Chapter 18
TRANSPORTATION AND TRAFFIC (TERRESTRIAL)

18.1 Introduction

This chapter provides an overview of transportation resources in the vicinity of each element of the Clearwater Program, analyzes potential traffic impacts associated with the construction and operation of each element, determines the significance of impacts, and provides mitigation measures that would reduce these impacts where feasible. Transportation resources comprise the street and highway network, and include facilities for motorized and non-motorized transportation, traffic volumes and operating conditions, and public transit service. Impacts associated with vessel traffic and safety are discussed in Chapter 19.

As discussed in Section 3.6.1, a Preliminary Screening Analysis (Appendix 1-A) was performed to determine impacts associated with the construction and operation of program and project elements by resource area. During preliminary screening, each element was determined to have no impact, a less than significant impact, or a potentially significant impact. Those elements determined to be potentially significant were further analyzed in this environmental impact report/environmental impact statement (EIR/EIS). This EIR/EIS analysis discloses the final impact determination for those elements deemed potentially significant in the Preliminary Screening Analysis. The location of the terrestrial transportation and traffic impact analysis for each program element is summarized by alternative in Table 18-1.

Table 18-1. Impact Analysis Location of Program Elements by Alternative

	Alternative						Analysis Location	
Program Element	**1**	**2**	**3**	**4**	**5[a]**	**6[b]**	**PSA**	**EIR/EIS**
Conveyance System								
Conveyance Improvements	X	X	X	X	X	N/A	C,O	C,O
SJCWRP								
Plant Expansion	X	X	X	X	X	N/A	C,O	C,O
Process Optimization	X	X	X	X	N/A	N/A	C,O	C,O
WRP Effluent Management	X	X	X	X	X	N/A	O	-
POWRP								
Process Optimization	X	X	X	X	N/A	N/A	C,O	C,O
WRP Effluent Management	X	X	X	X	X	N/A	O	-
LCWRP								
Process Optimization	X	X	X	X	N/A	N/A	C,O	C,O
WRP Effluent Management	X	X	X	X	X	N/A	O	-

Table 18-1 (Continued)

	Alternative						Analysis Location	
Program Element	**1**	**2**	**3**	**4**	**5[a]**	**6[b]**	**PSA**	**EIR/EIS**
LBWRP								
Process Optimization	X	X	X	X	N/A	N/A	C,O	C,O
WRP Effluent Management	X	X	X	X	X	N/A	O	-
WNWRP								
WRP Effluent Management	X	X	X	X	X	N/A	O	-
JWPCP								
Solids Processing	X	X	X	X	X	N/A	C,O	C,O
Biosolids Management	X	X	X	X	X	N/A	O	O
JWPCP Effluent Management	X	X	X	X	N/A	N/A	Evaluated at the project level. See Table 18-2.	

WRP effluent management and biosolids management do not include construction.
[a] See Section 18.4.7 for a discussion of the No-Project Alternative.
[b] See Section 18.4.8 for a discussion of the No-Federal-Action Alternative.
PSA = Preliminary Screening Analysis
C = construction
O = operation
N/A = not applicable

As discussed in Section 3.2.2, Joint Water Pollution Control Plant (JWPCP) effluent management was the one program element that was carried forward as a project. The location of the impact analysis for each project element is summarized by alternative in Table 18-2.

Table 18-2. Impact Analysis Location of Project Elements by Alternative

	Alternative						Analysis Location	
Project Element	**1**	**2**	**3**	**4**	**5[a]**	**6[b]**	**PSA**	**EIR/EIS**
Tunnel Alignment								
Wilmington to SP Shelf (onshore)	X				N/A	N/A	C,O	C,O
Wilmington to SP Shelf (offshore)	X				N/A	N/A	C,O	C,O
Wilmington to PV Shelf (onshore)		X			N/A	N/A	C,O	C,O
Wilmington to PV Shelf (offshore)		X			N/A	N/A	C,O	C,O
Figueroa/Gaffey to PV Shelf (onshore)			X		N/A	N/A	C,O	C,O
Figueroa/Gaffey to PV Shelf (offshore)			X		N/A	N/A	C,O	C,O
Figueroa/Western to Royal Palms (onshore)				X	N/A	N/A	C,O	C,O
Shaft Sites								
JWPCP East	X	X			N/A	N/A	C,O	C,O
JWPCP West			X	X	N/A	N/A	C,O	C,O
TraPac	X	X			N/A	N/A	C,O	C,O
LAXT	X	X			N/A	N/A	C,O	C,O
Southwest Marine	X	X			N/A	N/A	C,O	C,O
Angels Gate			X		N/A	N/A	C,O	C,O
Royal Palms				X	N/A	N/A	C,O	C,O

Table 18-2 (Continued)

Project Element	Alternative 1	2	3	4	5[a]	6[b]	Analysis Location PSA	EIR/EIS
Riser/Diffuser Areas								
SP Shelf	X				N/A	N/A	C,O	C,O
PV Shelf		X	X		N/A	N/A	C,O	C,O
Existing Ocean Outfalls	X	X	X	X	N/A	N/A	C,O	C,O

[a] See Section 18.4.7 for a discussion of the No-Project Alternative.
[b] See Section 18.4.8 for a discussion of the No-Federal-Action Alternative.
PSA = Preliminary Screening Analysis
C = construction
O = operation
N/A = not applicable

18.2 Environmental Setting

18.2.1 Regional Setting

The elements of the program and project alternatives are located in an area of approximately 660 square miles located in the southern and eastern portions of Los Angeles County and approximately 20 square miles located in the city of Los Angeles and the Port of Los Angeles. This area includes most of the urbanized area lying south of the San Gabriel and Santa Monica Mountains but excludes the San Fernando Valley and the area of the Los Angeles Basin north of the cities of Inglewood and El Segundo. The transportation system serving this area is a complex multimodal network designed to carry people and goods. It consists of roads and highways, bikeways and sidewalks, public transit (paratransit, bus, and rail), freight railroads, airports, seaports, and intermodal terminals.

The network of freeways and state highways supports high-capacity limited-access travel, whereas the arterial network provides high levels of signalized street capacity and serves as a feeder system for the regional freeways and local street system. The freeway and highway system is the primary means of regional person and goods movement, providing for direct vehicular access to employment, services, and goods. Regional vehicular access to the facilities affected by the project alternatives is provided by numerous freeways and highways, including State Route (SR-) 1, Interstate (I-) 5, I-10, SR-57, SR-60, SR-71, SR-91, SR-103/SR-47, I-105, I-110, I-405, I-605, and I-710.

The regional public transit system includes local shuttles, municipal and area-wide public bus operations, rapid rail transit operations, regional commuter rail services, and inter-regional passenger rail service. The Los Angeles County Metropolitan Transportation Authority (MTA) is the largest provider of public transit service in the study area, and its service is supplemented by numerous municipal transit lines and local shuttle services.

Non-motorized transportation includes biking and walking trips, which are typically shorter than motorized trips. Bicycle trips are facilitated and encouraged by bikeways. Class I bikeways are defined as separate off-street paths, Class II bikeways are defined as striped lanes within streets, and Class III bikeways are defined as signed bicycle routes. Pedestrian trips are facilitated by sidewalks and pathways that provide access to public transit stops and other destinations throughout the region. Sidewalks are present on most streets in the urbanized areas of the region.

18.2.2 Program Setting

Conveyance System

The conveyance system consists of an extensive network of sewer pipelines, which are generally located 5 to 25 feet underground and within public rights-of-way. Aside from manhole covers and pump stations, there is little physical or visual evidence of the system above ground. A full description of the conveyance system can be found in Section 3.3.1.1. Access to the conveyance system is obtained through manholes located along the pipelines.

San Jose Creek Water Reclamation Plant

Regional access to the San Jose Creek Water Reclamation Plant (SJCWRP) is provided by I-605 and SR-60 as shown on Figure 3-5. Local access is provided by Workman Mill Road.

Interstate 605

I-605 is a north-south freeway that extends north from I-405 in Long Beach to I-210 in Duarte. Near the SJCWRP, this freeway is eight lanes wide and has interchanges at Peck Road and Valley Boulevard. The existing average annual daily traffic (AADT) on the segment of this freeway between the SR-60 and Valley Boulevard interchanges is approximately 231,000, with a peak hour volume of approximately 15,700 vehicles (California Department of Transportation 2008).

State Route 60

SR-60 is an east-west freeway that extends between Los Angeles and Riverside Counties. Near the SJCWRP, this freeway is eight lanes wide and has an interchange with Crossroads Parkway. The existing AADT on this freeway between the I-605 and Crossroads Parkway interchanges is approximately 246,000, with a peak hour volume of approximately 16,100 vehicles (California Department of Transportation 2008).

Workman Mill Road

Workman Mill Road provides access to the SJCWRP. Immediately adjacent to the plant driveway, this road has four through lanes and a center left-turn lane. The posted speed limit on this segment is 45 miles per hour (mph).

A narrow, private two-lane access road adjacent to San Jose Creek, which runs beneath I-605, joins the eastern and western areas of the SJCWRP. This under crossing also includes a pedestrian walkway.

Pomona Water Reclamation Plant

Regional access to the Pomona Water Reclamation Plant (POWRP) is provided by SR-71 and SR-57. Local access is provided by Humane Way via Pomona Boulevard and Mission Boulevard.

State Route 57

SR-57 is a north-south freeway extending north from I-5 in Santa Ana to I-210 in Glendora. Near the POWRP, SR-57 is eight lanes wide and has an interchange at Temple Avenue. The existing AADT on the segment of this freeway between I-10 and Temple Avenue is approximately 160,000, with a peak hour volume of approximately 12,500 vehicles (California Department of Transportation 2008).

State Route 71

SR-71 is a north-south freeway extending north from SR-91 in Corona and ending at SR-57 just north of the POWRP. Near the POWRP, SR-71 is four lanes wide and has interchanges with Pomona Boulevard and Mission Boulevard. The existing AADT on the segment of this freeway between the Pomona

Boulevard and Mission Boulevard interchanges is approximately 69,000, with a peak hour volume of approximately 5,300 vehicles (California Department of Transportation 2008).

Humane Way

Humane Way, a north-south road, provides vehicular access to the POWRP and has four through lanes at the plant driveway, as shown on Figure 3-6. Vehicles can reach Humane Way via Pomona Boulevard to the north or Mission Boulevard to the south.

Pomona Boulevard

Pomona Boulevard, extends east-west 0.1 mile north of the plant, provides vehicle access from SR-57 (via the Temple Avenue Interchange) and SR-71 to Humane Way. Near the plant, this roadway is four lanes wide.

Mission Boulevard

Mission Boulevard, extending east-west 0.2 mile south of the plant, provides vehicle access from SR-57 (via the Temple Avenue interchange) and SR-71 to Humane Way. Near the plant, Mission Boulevard is four lanes wide with a raised center median.

Los Coyotes Water Reclamation Plant

Regional access to the Los Coyotes Water Reclamation Plant (LCWRP) is provided by I-605. Local access is provided by Alondra Boulevard and Piuma Avenue.

Interstate 605

I-605 is a north-south freeway extending north from I-405 to I-210 near Duarte. Near the LCWRP, this freeway is eight lanes wide and has an interchange at Alondra Boulevard. The existing AADT on the segment of this freeway between the SR-91 and Alondra Boulevard interchanges is approximately 294,000, with a peak hour volume of approximately 21,000 vehicles (California Department of Transportation 2008).

Piuma Avenue

Piuma Avenue, a north-south road, provides vehicular access to the LCWRP. This road is two lanes wide and has a posted speed limit of 35 mph. At its southern end, Piuma Avenue continues as the driveway of the LCWRP.

Alondra Boulevard

Alondra Boulevard, an east-west road that is 0.5 mile north of the plant, provides vehicle access from I-605 to Piuma Avenue. Near the plant, this roadway is six lanes wide with a raised center median.

Long Beach Water Reclamation Plant

Regional access to the Long Beach Water Reclamation Plant (LBWRP) is provided by I-605. Local access is provided by Willow Street–Katella Avenue.

Interstate 605

I-605 is a north-south freeway extending north from I-405 to I-210 near Duarte. Near the LBWRP, I-605 is eight lanes wide and has an interchange at Willow Street–Katella Avenue. The existing AADT on the segment of this freeway south of the Willow Street–Katella Avenue interchange is approximately 185,000, with a peak hour volume of approximately 13,400 vehicles (California Department of Transportation 2008).

Willow Street–Katella Avenue

Willow Street–Katella Avenue, an east-west road that is 0.1 mile north of the plant, provides access to the driveway of the LBWRP. Near the plant, this roadway is four lanes wide with a raised center median and has a posted speed limit of 40 mph. The raised center median on Willow Street–Katella Avenue limits the LBWRP driveway to right-turns in/right-turns out only.

Joint Water Pollution Control Plant

Regional access to the JWPCP is provided by I-110. Local access is provided by Sepulveda Boulevard, Figueroa Street, and Lomita Boulevard, as shown on Figure 3-9.

Interstate 110

I-110 is a north-south freeway extending north from Gaffey Street in San Pedro to Arroyo Parkway in Pasadena. Near the JWPCP, I-110 is eight lanes wide and has interchanges at Sepulveda Boulevard and Pacific Coast Highway. The existing AADT on the segment of this freeway between the Sepulveda Boulevard and Pacific Coast Highway interchanges is approximately 146,000, with a peak hour volume of approximately 11,500 vehicles (California Department of Transportation 2008).

Sepulveda Boulevard

Sepulveda Boulevard, an east-west road, lies along the northern edge of the JWPCP and provides secondary access to the JWPCP. Near the JWPCP, this roadway is four lanes wide with a planted center median and left-turn pockets. It has a posted speed limit of 40 mph.

Figueroa Street

Figueroa Street, a north-south road, lies between the eastern and western portions of the JWPCP and provides primary access to the JWPCP. Near the JWPCP, this roadway is four lanes wide with a center left-turn lane. North of Lomita Boulevard, it has a posted speed limit of 40 mph.

Lomita Boulevard

Lomita Boulevard, an east-west road, lies along the southern edge of the JWPCP and provides secondary access to the JWPCP. Near the JWPCP, this roadway is four lanes wide with a raised center median and left-turn lanes. It has a posted speed limit of 40 mph.

18.2.3 Project Setting

A detailed peak hour traffic impact analysis was conducted at selected locations (study intersections) in the vicinity of the shaft sites and along key access routes to assess the potential for short-term traffic impacts to occur during construction of the four alternatives (project). An assessment of potential traffic impacts during the operational phase of the project is also provided.

This Section describes the local street system and existing transit service near each shaft site. The existing characteristics of the street system in the vicinity of the alternatives are summarized in Table 18-3. This Section also describes the methodology used to assess the traffic conditions at each study intersection and presents the existing operating conditions at each location. The location of the shaft sites and the 22 study intersections selected for detailed traffic impact analysis are shown on Figure 18-1. The study intersections were selected on the basis of their location in relation to the alternatives and the potential for project-related traffic to travel through them. The existing lane configurations of the study intersections are illustrated on Figure 18-2. The existing (2010) baseline AM and PM peak hour traffic volumes used in this analysis are shown on Figure 18-3. New baseline traffic count data was collected during the weekday peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to

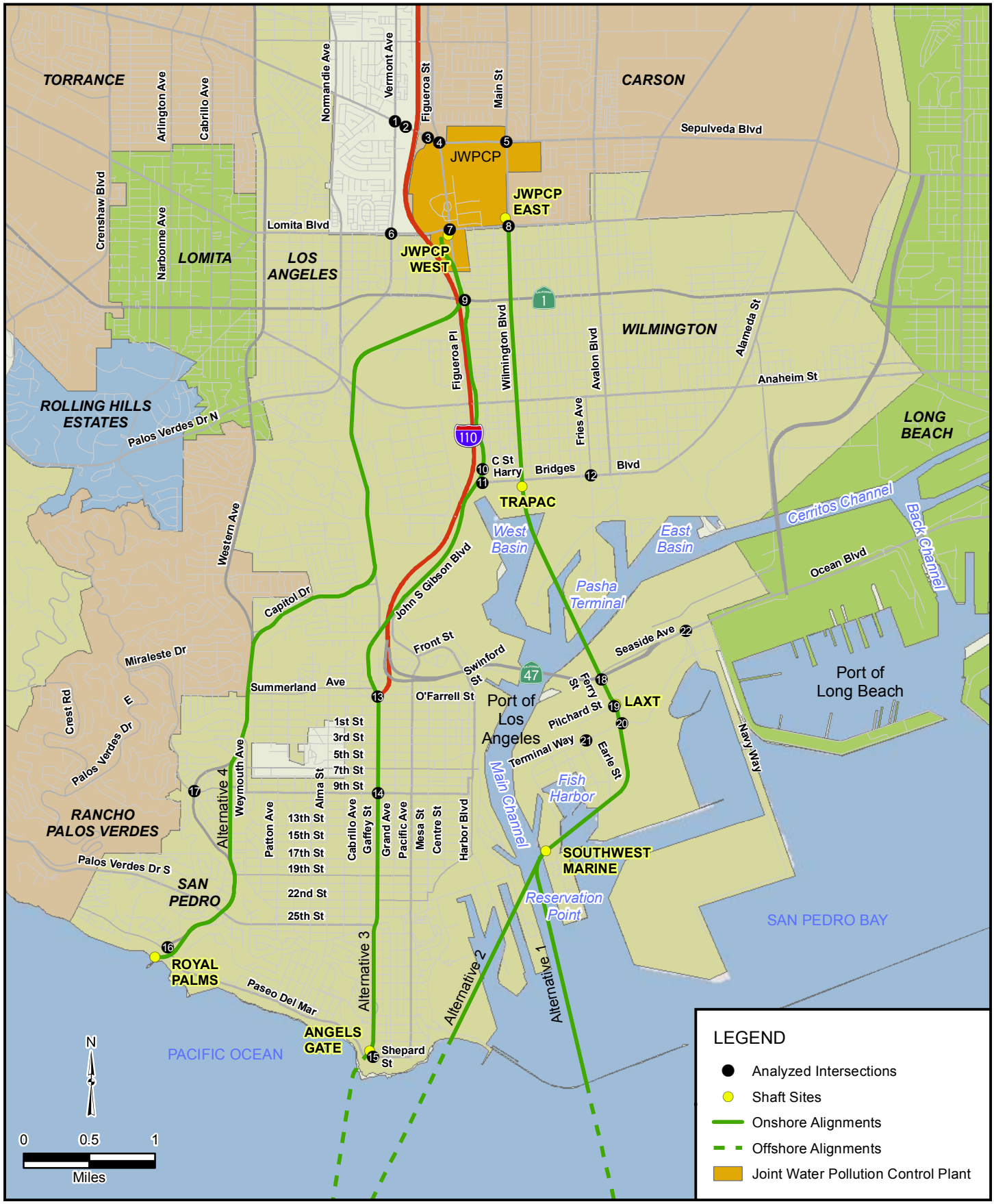
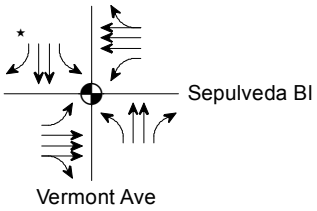
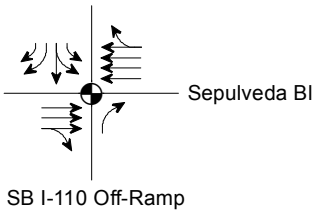
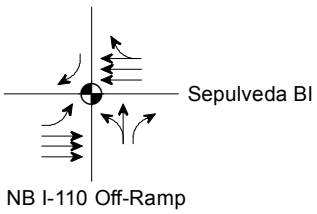
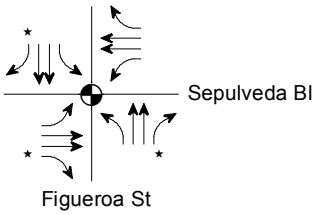
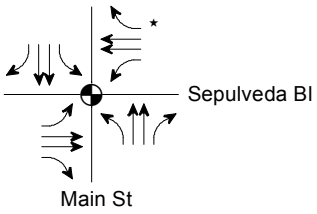
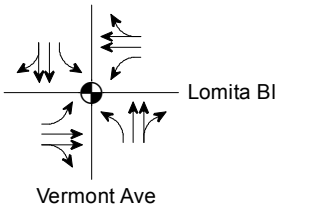


FIGURE 18-1

Study Area and Intersections

CLEARWATER Program

Source: Sanitation Districts of Los Angeles County 2011, Fehr & Peers 2010, Thomas Bros. 2011, ESRI 2011

	EXISTING CONDITIONS	FUTURE CONDITIONS
1. Vermont Ave & Sepulveda Bl		Same As Existing Conditions
2. SB I-110 Off-Ramp & Sepulveda Bl		Same As Existing Conditions
3. NB I-110 Off-Ramp & Sepulveda Bl		Same As Existing Conditions
4. Figueroa St & Sepulveda Bl		Same As Existing Conditions
5. Main St & Sepulveda Bl		Same As Existing Conditions
6. Vermont Ave & Lomita Bl		Same As Existing Conditions

LEGEND

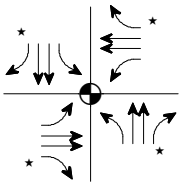
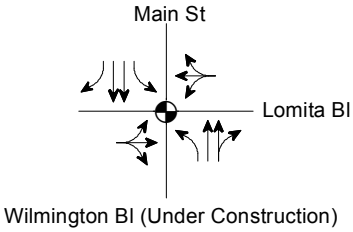
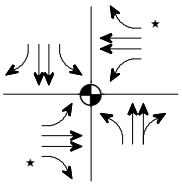
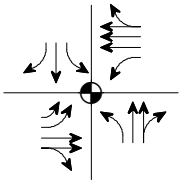
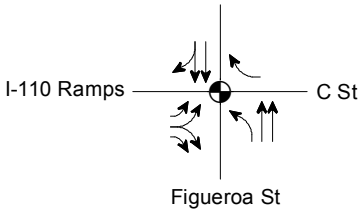
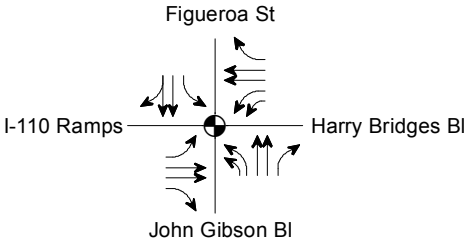
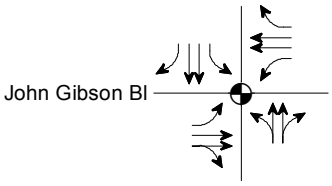
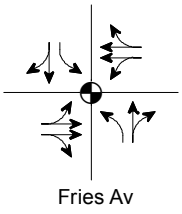
- Stop Controlled
- Traffic Signal
- ⋆ Functional Right-Turn Lane

FIGURE 18-2

CLEARWATER Program

Lane Configuration at Study Intersections

Source: Fehr & Peers 2010

	EXISTING CONDITIONS	FUTURE CONDITIONS
7. Figueroa St & Lomita Bl		Same As Existing Conditions
8. Wilmington Bl & Lomita Bl		
9. Figueroa St & Pacific Coast Hwy		Same As Existing Conditions
10. Figueroa St & C St		
11. Figueroa St & Harry Bridges Bl		Intersection Does Not Exist in Future Conditions
12. Fries Av & Harry Bridges Bl		Same As Existing Conditions

LEGEND

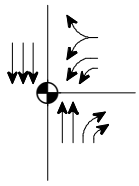
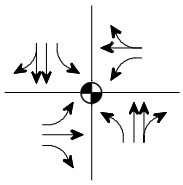
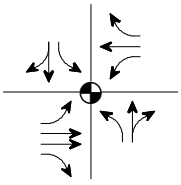
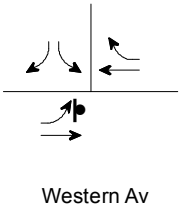
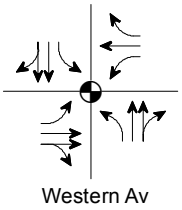
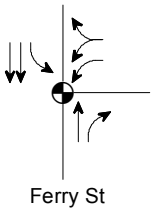
- Stop Controlled
- Traffic Signal
- ⋆ Functional Right-Turn Lane

FIGURE 18-2 (continued)

CLEARWATER Program

Lane Configuration at Study Intersections

Source: Fehr & Peers 2010

	EXISTING CONDITIONS	FUTURE CONDITIONS
13. Gaffey St & I-110 Ramps		Same As Existing Conditions
14. Gaffey St & 9th St		Same As Existing Conditions
15. Gaffey St & Paseo del Mar		Same As Existing Conditions
16. Western Av & Paseo del Mar		Same As Existing Conditions
17. Western Av & 9th St		Same As Existing Conditions
18. Ferry St & SR-47 EB On/Off-Ramps		Same As Existing Conditions

LEGEND

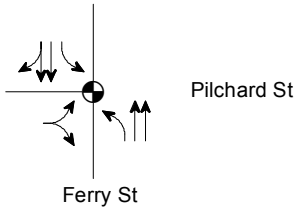
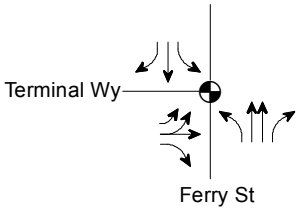
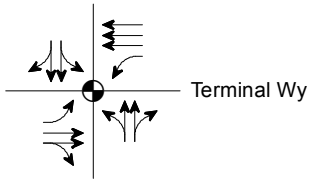
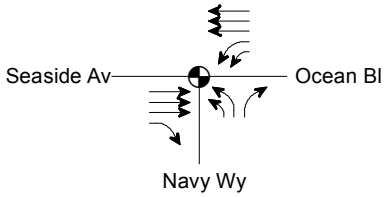
- Stop Controlled
- Traffic Signal
- ⋆ Functional Right-Turn Lane

FIGURE 18-2 (continued)

CLEARWATER Program

Lane Configuration at Study Intersections

Source: Fehr & Peers 2010

	EXISTING CONDITIONS	FUTURE CONDITIONS
19. Ferry St & Pilchard St		Same As Existing Conditions
20. Ferry St & Terminal Wy		Same As Existing Conditions
21. Earle St & Terminal Wy		Same As Existing Conditions
22. Navy Wy & Seaside Av/Ocean Blvd		Same As Existing Conditions

LEGEND

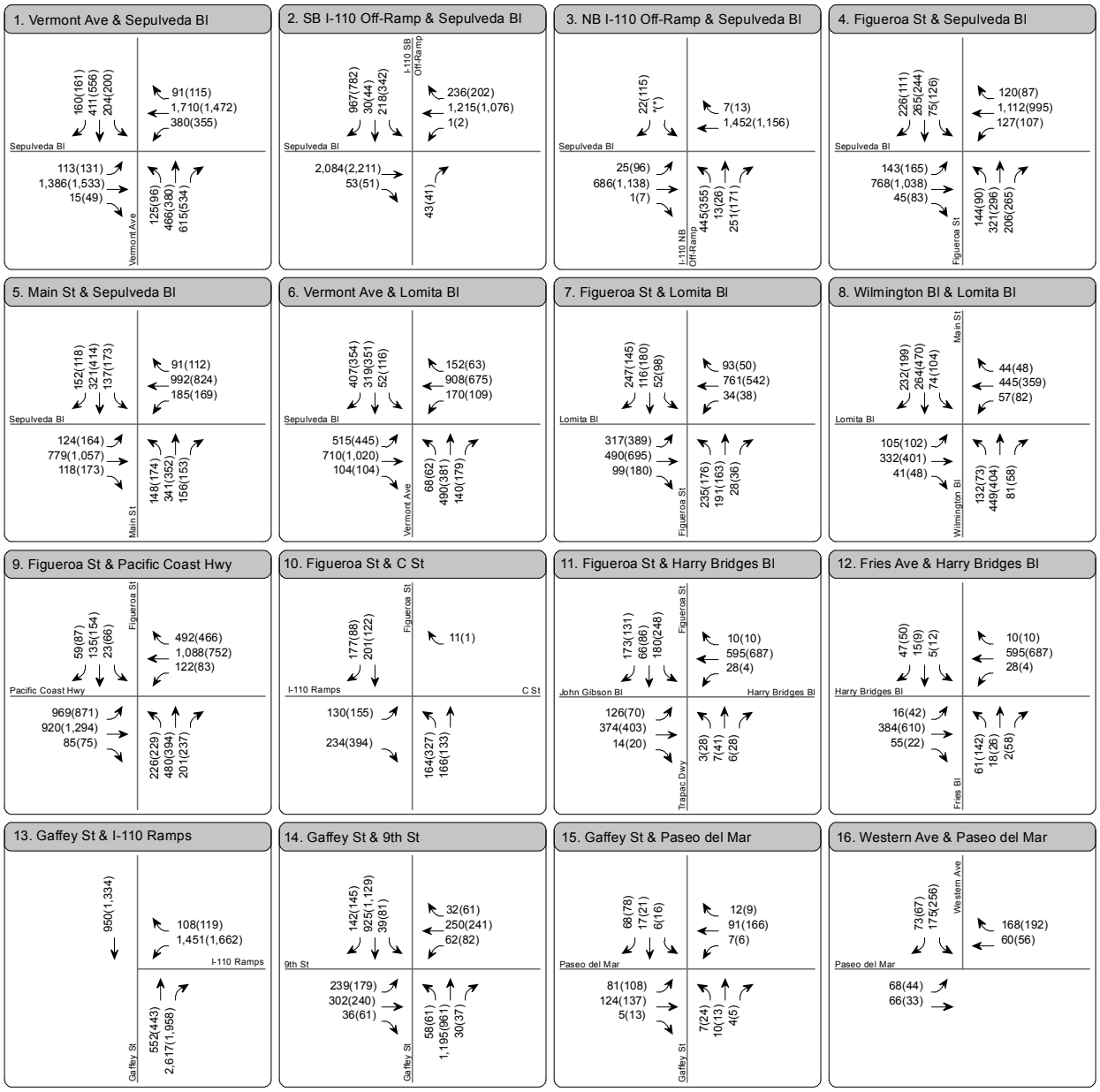
- Stop Controlled
- Traffic Signal
- ⋆ Functional Right-Turn Lane

FIGURE 18-2 (continued)

CLEARWATER Program

Lane Configuration at Study Intersections

Source: Fehr & Peers 2010



LEGEND

A M(PM) Peak Hour Traffic Volume

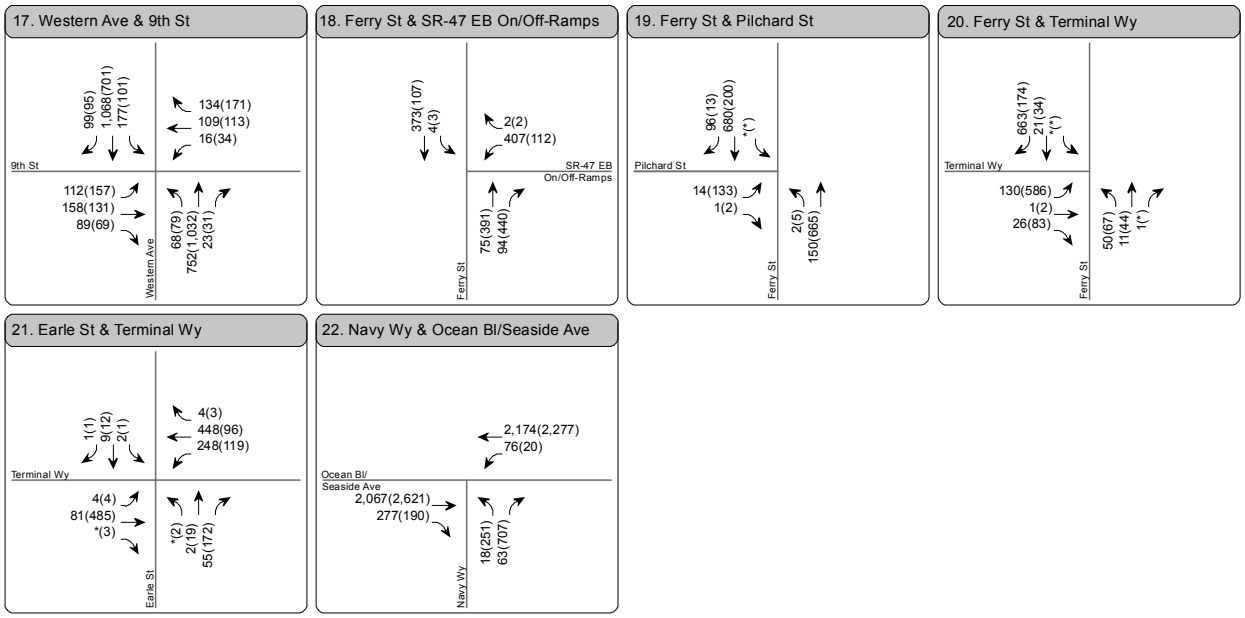
* No Traffic Data

FIGURE 18-3

CLEARWATER Program

Existing (2010) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010



LEGEND

A M(PM) Peak Hour Traffic Volume

* No Traffic Data

FIGURE 18-3 (continued)

CLEARWATER Program

Existing (2010) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010

6:00 p.m.) in late February and early March 2010 at all but three study intersections, which were analyzed using an alternative methodology, described below. The highest observed 1-hour (peak hour) volumes were analyzed. The baseline traffic count data for study intersections 10, 11, and 12 in Wilmington was drawn from the certified Final Environmental Impact Report (EIR) for the Wilmington Waterfront Development Project (ICF 2009). The weekday morning and evening peak hour traffic counts are included in Appendix 18-A. Because of the high percentage of trucks in the overall traffic stream in Wilmington and on Terminal Island, vehicle counts for study intersections 9 through 12 and 18 through 22 included the classification of passenger cars and large trucks. A factor of 2.0 was applied to the large trucks and a factor of 1.1 was applied to the bobtail trucks in the traffic stream to convert the traffic counts to passenger car equivalents (PCEs), and the resulting volumes were used in this analysis. At the time of the traffic counts, the eastbound-westbound capacity and signal operation at the Main Street–Wilmington Boulevard/Lomita Boulevard intersection was modified to accommodate a long-term construction project (through June 2010). A review of previous traffic count data along Lomita Boulevard showed that existing traffic volumes were not substantially affected. The existing level of service (LOS) reported at this location, however, is worse than under typical conditions. When the current construction project is completed, the roadway will be restored. Therefore, the future analysis of this study intersection reflects its typical configuration.

Table 18-3. Existing (2010) Roadway Characteristics

Segment	From	To	Lane NB	Lane SB	Median Type	Parking Restrictions NB	Parking Restrictions SB	Speed Limit (mph)
North/South Streets								
Figueroa Street	228th Street	234th Street	2	2	RM	PA (service)	PA (service)	40
	234th Street	Carriagedale Drive	2	2	2LT	PA (service)	PA	40
	Carriagedale Drive	Sepulveda Boulevard	2	2	2LT	NOT POSTED	NOT POSTED	40
	Sepulveda Boulevard	Lomita Boulevard	2	2	2LT	NPAT/72HR TP	NPAT	40
	Lomita Boulevard	R Street	2	2	2LT	TANP 10PM–6AM	NPAT	35
	R Street	Pacific Coast Highway	2	2	2LT	TANP 10PM–6AM	NPAT	35
	Pacific Coast Highway	L Street	2	2	2LT	NPAT	TANPAT	35
	L Street	Anaheim Street	2	2	2LT	PA	TANSAT	35
	Anaheim Street	Emden Street	2	2	DY	2HR 8AM–6PM	PA	35
	Emden Street	E Street	2	2	2LT	2HR 8AM–6PM	2HR 8AM–6PM	35
	E Street	Frigate Avenue	2	2	2LT	RZ	PA	35
	Frigate Avenue	C Street	2	2	2LT	PA	PA	35
	C Street	John S. Gibson Boulevard/ Harry Bridges Boulevard	2	2	DY	NSAT	NSAT	35
Vermont Avenue	Sepulveda Boulevard	Stonebryn Drive	2	2	RM	NPAT	RZ	40
	Stonebryn Drive	Lomita Boulevard	2	2	RM	PA	PA	40
	Lomita Boulevard	253rd Street	2	2	2LT	PA	PA	40
	253rd Street	255th Street	2	2	DY	NPAT	RZ/PA/TANPAT	35
	255th Street	Pacific Coast Highway	2	2	DY	NPAT	RZ/PA/TANPAT	35
Wilmington Boulevard	228th Street	236th Street	2	2	RM	PA (service)	PA	40
	236 Street	Sepulveda Boulevard	2	2	RM	PA	PA	40
	Sepulveda Boulevard	Lomita Boulevard	2	2	RM	NSAT	PA/NSAT	40
	Lomita Boulevard	Don Street	2	2	DY	NSAT	NSAT	35
	Don Street	Pacific Coast Highway	2	2	DY	PA	PA	35
	Pacific Coast Highway	L Street	1	2	2LT	1HR 8AM–6PM	PA	35
	L Street	Denni Street	1	2	2LT	PA	PA	35
	Denni Street	Opp Street	1	2	2LT	2HR 8AM–6PM	PA	35

Table 18-3 (Continued)

Segment	From	To	Lane		Median	Parking Restrictions		Speed Limit
			NB	SB	Type	NB	SB	(mph)
	Opp Street	Anaheim Street	1	2	DY	PA	PA	35
	Anaheim Street	Harry Bridges Boulevard	2	2	DY	PA	PA	30
John S. Gibson Boulevard	Figueroa Street	I-110 NB Ramps	2	2	2LT/ RM	TANSAT	TANSAT/PA	35/40
Western Avenue	Paseo Del Mar	25th Street	1	1	DY	TANPAT	TANSAT/PA	40
	25th Street	19th Street	2	2	DY	PA	PA	40
	19th Street	9th Street	2	2	RM	NPAT	RZ	40
	9th Street	Bynner Drive	2	2	2LT	PA	PA	40
Gaffey Street	Channel Street	Miraflores Avenue	2	2	DY	TANSAT	RZ	35
	Miraflores Avenue	Summerland Avenue/Gaffey Place	2	2	2LT/DY	TANSAT	TANSAT	35
	Summerland Avenue/Gaffey Place	I-110 Interchange	2	3	DY	TANSAT	TANSAT	35
	I-110 Interchange	Santa Cruz Street	4/3	3	RM	RZ/TANSAT	TANSAT/NS	35
	Santa Cruz Street	1st Street	3	3	DY	TANPAT	TANSAT	35
	1st Street	3rd Street	3	3	DY	TANS 7–9AM, 4–6PM	TANS 7AM–7PM	35
	3rd Street	5th Street	3	2	DY	TANS 7–9AM, 4–6PM, 1HR 9AM–4PM	TANS 7AM–7PM	35
	5th Street	7th Street	2	2	DY	1HR 8AM–6PM	1HR 8AM–6PM 30MIN	35
	7th Street	9th Street	2	2	DY	30MIN 8AM–6PM, 1 HR 8AM–6PM	1HR 8AM–6PM	35
	9th Street	11th Street	2	2	DY	1 HR 8AM–6PM	TANSAT/RZ	35
	11th Street	13th Street	2	2	DY	RZ/1HR 8AM–6PM	1HR 8AM–6PM/RZ	35
	13th Street	15th Street	2	2	DY	1HR 8AM–6PM	1HR 8AM–6PM	35
	15th Street	17th Street	2	2	DY	TANPAT/PA	PA	35
	17th Street	19th Street	2	2	DY	1HR 8AM–6PM/PA	1HR 8AM–6PM/PA	35
	19th Street	22nd Street	2	2	DY	PA	PA	35
	22nd Street	23rd Street	2	1	DY	PA	PA	35
	23rd Street	24th Street	1	1	DY	PA	PA	35

Table 18-3 (Continued)

Segment	From	To	Lane		Median	Parking Restrictions		Speed Limit
			NB	SB	Type	NB	SB	(mph)
	24th Street	25th Street	1	1	DY	TANPAT	TANPAT	20
	25th Street	27th Street	1	1	DY	PA	PA	35
	27th Street	31st Street	1	1	DY	PA	PA/RZ	35
	31st Street	32nd Street	1	1	DY	PA	NPAT	25
	32nd Street	33rd Street	1	1	DY	TANSAT	TANSAT	35
	33rd Street	36th Street	1	1	DY	TANSAT	TANSAT	25
	36th Street	Paseo Del Mar/Shepard Street	1	1	2 LT	PA	PA	35
Ferry Street	N Seaside Avenue	East Road	2	2	RM	NPAT	NPAT	25
	East Road	Terminal Way	2	2	RM/DY	NPAT	NPAT	25
Earle Street	Pilchard Street	Terminal Way	2	2	DY	PA/RZ	PA/RZ	25
	Terminal Way	Cannery Street	2	2	DY	PA	PA	35
S Seaside Avenue	Cannery Street	Wharf Street	2/1	1/2	DY	NSAT	NSAT	25
	Wharf Street	Reservation Point	1	1	DY	NSAT	NSAT	25
East/West Streets								
Sepulveda Boulevard	Vermont Avenue	I-110 Freeway	3	3	RM	NSAT	NSAT	40
	I-110 Freeway	Figueroa Street	3	3	RM	NSAT/PA	NSAT	40
	Figueroa Street	Main Street	2	2	RM	PA/1HR TP	PA/NSAT	40
	Main Street	Dolores Street	2	2	RM	2HR 7AM–6PM	PA	40
	Dolores Street	Marbella Avenue	2	2	RM	2HR 7AM–6PM/1HR TP	PA	40
	Marbella Avenue	Fries Avenue	2	2	RM	PA	PA	40
	Fries Avenue	Avalon Boulevard	2	2	RM	PA	1HR TP/PA	40
Lomita Boulevard	Vermont Avenue	I-110 Freeway	2	2	RM	TANP 10PM–6AM	TANPAT	40
	I-110 Freeway	Figueroa Street	2	2	2LT	NPAT	NPAT	40
	Figueroa Street	Main Street/Wilmington Boulevard	2	2	RM	PA	NPAT	40

Table 18-3 (Continued)

Segment	From	To	Lane		Median	Parking Restrictions		Speed Limit
			EB	WB	Type	EB	WB	(mph)
	Main Street/Wilmington Boulevard	Bayview Avenue	2	2	2LT	NPAT/PA	PA	
	Bayview Avenue	Avalon Boulevard	2	2	2LT	PA	PA	40
Pacific Coast Highway	Vermont Avenue	I-110 Freeway	3	3	2LT	TANSAT	TANS 6–9:30AM, 3–7PM, 1HR 9:30AM–7PM	40
	I-110 Freeway	Figueroa Street	3	2	2LT	TANS 7–9AM, 4–6PM	TANSAT	40
	Figueroa Street	Avalon Boulevard	2	2	2LT	TANS 7–9AM, 4–6PM	TANS 7–9AM, 4–6PM	40
Anaheim Street	I-110 Freeway	Figueroa Street	2	2	DY	NSAT	NSAT	35
	Figueroa Street	Mar Vista Avenue	2	2	DY	PA	NSAT	35
	Mar Vista Avenue	Hawaiian Avenue	2	2	DY	PA	PA	35
	Hawaiian Avenue	King Avenue	2	2	DY	PA	TANSAT	35
	King Avenue	Ronan Avenue	2	2	2LT	TANSAT	TANSAT	35
	Ronan Avenue	McDonald Avenue	2	2	DY	PA/RZ	PA	35
	McDonald Avenue	Bayview Avenue	2	2	DY	1HR 8AM–6PM	1HR 8AM–6PM	35
	Bayview Avenue	Neptune Avenue	2	2	DY	PA	PA	35
	Neptune Avenue	Lagoon Avenue	2	2	DY	PA	PA	30
	Lagoon Avenue	Island Avenue	2	2	DY	PA	1HR 8AM–6PM	30
	Island Avenue	Fries Avenue	2	2	2LT	PA/RZ	1HR 8AM–6PM	30
	Fries Avenue	Marine Avenue	2	2	DY	1HR 8AM–6PM (metered)	2HR 8AM–6PM (metered)	30
	Marine Avenue	Avalon Boulevard	2	2	DY	1HR 8AM–6PM (metered)	1HR 8AM–6PM (metered)/RZ	35
	Avalon Boulevard	Broad Avenue	2	2	DY	1HR 8AM–6PM/RZ	1HR 8AM–6PM/PA	35
	Broad Avenue	Lakme Avenue	2	2	DY	1HR 8AM–6PM	PA	35
	Lakme Avenue	Eubank Avenue	2	2	DY	PA	PA	35
	Eubank Avenue	Dominguez Avenue	2	2	2LT/DY	PA	NSAT/PA	35
	Dominguez Avenue	Stanford Avenue	2	2	DY	PA	PA	35
	Stanford Avenue	Flint Avenue	2	2	DY	PA	1HR 8AM–6PM	35
	Flint Avenue	Pioneer Avenue	2	2	DY	PA	PA	35

Table 18-3 (Continued)

Segment	From	To	Lane EB	Lane WB	Median Type	Parking Restrictions EB	Parking Restrictions WB	Speed Limit (mph)
	Pioneer Avenue	Watson Avenue	2	2	DY	PA/RZ	PA	35
	Watson Avenue	Alameda Street	2	2	2LT	RZ	PA	35
Harry Bridges Boulevard	Figueroa Street	Lakme Avenue	2	2	DY	TANSAT	TANSAT	35
	Lakme Avenue	Eubank Avenue	2	2	DY	PA	PA/TANSAT	35
	Eubank Avenue	Anaheim Street	2	2	DY	TANSAT	TANSAT	40
Paseo Del Mar	Graysby Avenue	Western Avenue	1	1	RM	PA	PA	35
	Walker Avenue	Barbara Street	1	1	2 LT	PA	PA	35
	Barbara Street	Meyler Street	1	1	2 LT	TANP 10PM–6AM	PA	35
	Meyler Street	Roxbury Street	1	1	2 LT	TANP 10PM–6AM	PA	35
	Roxbury Street	Gaffey Street	2/1	2/1	DY	TANSAT/PA	TANSAT	35
	Gaffey Street	California Street	1	1	DY	PA	PA	35
Ocean Boulevard	Vincent Thomas Bridge	Navy Way	3	3	RM	NSAT	NSAT	45
	Navy Way	Pier S Avenue	3	3	RM	NSAT	NSAT	45
	Pier S Avenue	Terminal Island Freeway	3	3	RM	NSAT	NSAT	45
N Seaside Avenue	Ferry Street	SR 47 On/Off-Ramp	1	1	2LT	TANSAT	TANSAT	40
Pilchard Street	Earle Street	Ferry Street	1	1	SDY	NPAT	NPAT	35
Terminal Way	S Seaside Avenue	Tuna Street	2	2	RM	NPAT	NPAT	25
	Tuna Street	Earle Street	2	2	DY	NPAT	NPAT	25
	Earle Street	Ferry Street	2	2	RM	NPAT	NPAT	25

Median Type:
DY = Double Yellow Centerline
SDY = Single Dashed Yellow Centerline
2LT = Two-Way Left-Turn Lane
RM = Raised Median
UD = Undivided Lane

Parking:
PA = Parking Allowed
NPAT = No Parking Anytime
NSAT = No Stopping Anytime
RZ = Red Zone - No Parking Allowed
TANS = Tow Away No Stopping
TANP = Tow Away No Parking
TANSAT = Tow Away No Stopping Any Time

Lanes:
= Number of Lanes

Other:
mph = miles per hour
NB = Northbound
SB = Southbound
EB = Eastbound
WB = Westbound

LOS is a qualitative measure used to describe the condition of traffic flow, ranging from excellent "free flow" conditions at LOS A to overloaded "stop and go" conditions at LOS F. The intersection capacity utilization method of intersection analysis, per the city of Carson requirements for analyzing signalized intersection conditions, was used to determine the intersection volume-to-capacity (V/C) ratio and corresponding LOS for each signalized study intersection in Carson. The Los Angeles Department of Transportation (LADOT) requires use of the critical movement analysis (CMA) method to analyze the LOS of signalized intersections (LADOT 2002). These methodologies determine the V/C ratio of an intersection based on the number of approach lanes, traffic signal phasing, and traffic volumes. The CalcaDB software package developed by LADOT was used to implement the CMA methodology at locations in Los Angeles. The V/C ratio was then used to find the corresponding LOS based on the definitions in Table 18-4. All but three of the 22 analyzed intersections are currently controlled by traffic signals; the exceptions are study intersections 10, 15, and 16. Four of the signalized study intersections in the city of Los Angeles are currently controlled by the city's automated traffic surveillance and control (ATSAC) system: Figueroa Street/Pacific Coast Highway, Gaffey Street/I-110 Ramps, Gaffey Street/ 9th Street, and Western Avenue/9th Street. In accordance with LADOT procedures, a capacity increase of 7 percent (0.07 V/C adjustment) was applied to reflect the combined benefits of ATSAC systems at these intersections.

Table 18-4. Level of Service Definitions for Signalized Intersections

Level of Service	Intersection Capacity Utilization	Definition
A	0.000–0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601–0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701–0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801–0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901–1.000	POOR. Represents the most vehicles intersection approaches can accommodate; there may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Tremendous delays with continuously increasing queue lengths.

Source: LADOT 2002

Three study intersections are unsignalized and were analyzed using the stop-controlled methodologies from the Highway Capacity Manual (Transportation Research Board 2000). Study intersections 15 and 16 (Gaffey Street/Paseo Del Mar and Western Avenue/Paseo Del Mar) were analyzed using the all-way stop methodology. Study intersection 10 (I-110 Ramps–Harry Bridges Boulevard/Figueroa Street) was analyzed using the two-way stop methodology. For stop-controlled intersections, LOS depends on the amount of delay experienced by drivers on the stop-controlled approaches. Thus, for two-way stop-controlled intersections, LOS is based upon the average delay experienced by vehicles entering the intersection on the minor (stop-controlled) approaches while for all-way stop-controlled intersections, LOS is determined by the average delay for all movements through the intersection. The average delay criteria for the different LOS designations for stop-controlled intersections are presented in Table 18-5.

Table 18-5. Level of Service Definitions for Stop-Controlled Intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	< 10.0
B	> 10.0 and < 15.0
C	> 15.0 and < 25.0
D	> 25.0 and < 35.0
E	> 35.0 and < 50.0
F	> 50.0

Source: Transportation Research Board 2000

The LOS methodologies previously described were applied to existing weekday AM and PM peak hour turning volumes to determine existing operating conditions at each of the study intersections. The results of this analysis are summarized in Table 18-6 and detailed LOS worksheets are included in Appendix 18-B. As shown in Table 18-6, all but four of the study intersections are currently operating at LOS D or better in both peak hours, generally considered desirable in urbanized areas. The exceptions are the intersections of Vermont Avenue/Sepulveda Boulevard, Vermont Avenue/Lomita Boulevard, Main Street–Wilmington Boulevard/Lomita Boulevard, and Figueroa Street/Pacific Coast Highway.

Table 18-6. Existing (2010) Intersection Level of Service Analysis

Intersection		Peak Hour	Existing (Year 2010) V/C or Delay	LOS
1	Vermont Avenue	AM	0.935	E
	Sepulveda Boulevard	PM	0.925	E
2	SB I-110 Off-Ramp	AM	0.858	D
	Sepulveda Boulevard	PM	0.817	D
3	NB I-110 Off-Ramp	AM	0.712	C
	Sepulveda Boulevard	PM	0.698	B
4	Figueroa Street	AM	0.710	C
	Sepulveda Boulevard	PM	0.725	C
5	Main Street	AM	0.681	B
	Sepulveda Boulevard	PM	0.774	C
6	Vermont Avenue	AM	0.963	E
	Lomita Boulevard	PM	0.799	C
7	Figueroa Street	AM	0.787	C
	Lomita Boulevard	PM	0.654	B
8	Main Street/Wilmington Boulevard[a]	AM	0.956	E
	Lomita Boulevard	PM	0.964	E
9	Figueroa Street	AM	0.929	E
	Pacific Coast Highway[b]	PM	0.862	D
10	Figueroa Street	AM	10.7 sec.	B
	I-110 Ramps/C Street[c d]	PM	13.6 sec.	B
11	Figueroa Street/TraPac Gate	AM	0.379	A
	Harry Bridges Boulevard[e]	PM	0.465	A
12	Fries Avenue	AM	0.313	A
	Harry Bridges Boulevard	PM	0.403	A

Table 18-6 (Continued)

Intersection		Peak Hour	Existing (Year 2010) V/C or Delay	LOS
13	Gaffey Street	AM	0.488	A
	I-110 Ramps[b]	PM	0.623	B
14	Gaffey Street	AM	0.712	C
	9th Street[b]	PM	0.716	C
15	Gaffey Street	AM	8.5 sec.	A
	Paseo Del Mar[c]	PM	9.1 sec.	A
16	Western Avenue	AM	11.1 sec.	B
	Paseo Del Mar[f]	PM	11.8 sec.	B
17	Western Avenue	AM	0.543	A
	9th Street[b]	PM	0.569	A
18	Ferry Street	AM	0.285	A
	SR-47 EB On/Off-Ramps	PM	0.343	A
19	Ferry Street	AM	0.270	A
	Pilchard Street	PM	0.312	A
20	Ferry Street	AM	0.476	A
	Terminal Way	PM	0.262	A
21	Earle Street	AM	0.231	A
	Terminal Way	PM	0.357	A
22	Navy Way	AM	0.520	A
	Ocean Boulevard/Seaside Avenue	PM	0.718	C

[a] Intersection is currently under construction; eastbound and westbound lanes and signal phasing are currently modified.

[b] Intersection is currently operating under ATSAC system. Per LADOT guidelines, a 7 percent capacity credit has been taken at intersections operating with ATSAC systems.

[c] Intersection is a four-way stop-controlled intersection. LOS is based on 2000 HCM four-way stop method. Average delay of the intersection is reported.

[d] Intersection would be reconfigured in the future per the conceptual plan for Harry Bridges Boulevard realignment.

[e] Intersection analyzed under existing conditions only. In the future, intersection would no longer exist per the conceptual plan for Harry Bridges Boulevard realignment.

[f] Intersection is a one-way stop-controlled intersection. LOS is based on 2000 HCM unsignalized method. Worst approach delay of the intersection is reported.

18.2.3.1 Tunnel Alignments

A detailed description of the alignments is provided in Section 3.3.2.1, and the alignments are illustrated on Figure 3-11. The alignments would be constructed underground and generally within public rights-of-way and there would be little physical or visual evidence of the system above ground. Potential transportation and traffic impacts associated with this alignment would occur in the vicinity of the shaft sites during construction as discussed in Section 18.4.

18.2.3.2 Shaft Sites

JWPCP East

The JWPCP East shaft site would be used in the construction of Alternatives 1 and 2 (Project). As shown on Figure 3-17, the JWPCP East shaft site would be located within the JWPCP property near the northwest corner of Main Street–Wilmington Boulevard/Lomita Boulevard in the city of Carson. Access

to this site would be from the existing JWPCP entrances via Figueroa Street, or the Sepulveda Boulevard JWPCP entrance. Descriptions of the streets surrounding this shaft site are provided in Table 18-3. The following transit lines serve the area around this shaft site.

- **Torrance Transit 3.** Line 3 operates on Main Street and Pacific Coast Highway in the vicinity of the JWPCP East shaft site, making stops between the Redondo Beach Pier and downtown Long Beach. This line provides service from approximately 4:30 a.m. to 10:30 p.m. on weekdays, with headways of 15 minutes.
- **Torrance Transit 7.** Line 7 operates on Lomita Boulevard, Wilmington Boulevard, and Pacific Coast Highway in the vicinity of the JWPCP East shaft site, making stops between the Redondo Beach Pier and the community of Wilmington. This line provides service from approximately 7:00 a.m. to 9:00 p.m. on weekdays, with headways of 10 minutes.
- **Carson North-South Shuttle.** This shuttle operates on Figueroa Street, Main Street, Sepulveda Boulevard, and Lomita Boulevard in the vicinity of the JWPCP East shaft site, providing bus service in the western area of Carson. This line provides service from approximately 5:20 a.m. to 6:03 p.m. on weekdays, with headways of 50 minutes.

Potential construction-period traffic impacts were assessed at the following nine study intersections in the vicinity of the JWPCP East shaft site.

1. Vermont Avenue/Sepulveda Boulevard
2. I-110 Southbound On- and Off-Ramps/Sepulveda Boulevard
3. I-110 Northbound Off-Ramp/Sepulveda Boulevard
4. Figueroa Street/Sepulveda Boulevard
5. Main Street/Sepulveda Boulevard
6. Vermont Avenue/Lomita Boulevard
7. Figueroa Street/Lomita Boulevard
8. Main Street–Wilmington Boulevard/Lomita Boulevard
9. Figueroa Street/Pacific Coast Highway

Existing peak hour LOS for these study intersections is shown in Table 18-6.

JWPCP West

The JWPCP West shaft site would be used under Alternatives 3 and 4 (Project). As shown on Figure 3-18, the JWPCP West shaft site would be located within the JWPCP property southwest of the Lomita Boulevard/Figueroa Street intersection in the city of Los Angeles. Access to this site would be provided from Figueroa Street via Lomita Boulevard, Pacific Coast Highway, or Sepulveda Boulevard. Descriptions of the streets surrounding this shaft site are provided in Table 18-3. The transit lines that serve this area are the same as those described under the JWPCP East shaft site.

Potential construction-period traffic impacts were assessed at the same nine intersections that were analyzed for impacts associated with the JWPCP East shaft site. Existing peak hour LOS for the selected study intersections is shown in Table 18-6.

TraPac

The Trans Pacific Container Service Corporation (TraPac) shaft site would be used under Alternatives 1 and 2 (Project). As shown on Figure 3-19, the TraPac shaft site would be located south of the Harry Bridges Boulevard/Wilmington Boulevard intersection within the Port of Los Angeles. Access to the shaft site would either be at the existing TraPac gate at Figueroa Street/Harry Bridges Boulevard or at the future TraPac gate accessed via the planned Lagoon Avenue grade separation. Descriptions of the streets surrounding this shaft site are provided in Table 18-3. The following transit lines serve the area around the TraPac shaft site.

- **Metro Line 202.** Line 202 travels along Anaheim Street, Avalon Boulevard, C Street, Broad Avenue, and D Street in the vicinity of the TraPac shaft site. This line provides north-south service between Willowbrook and Wilmington. The line runs from approximately 5:50 a.m. to 10:00 a.m. and from 4:00 p.m. to 7:20 p.m., with headways of approximately 30 minutes.
- **Metro Lines 246/247.** Lines 246 and 247 operate on Avalon Boulevard, Harry Bridges Boulevard, and John S. Gibson Boulevard in the vicinity of the TraPac shaft site. Between San Pedro and downtown Los Angeles, both lines operate over the same route, providing freeway express service via the Harbor Transitway to the Patsaouras Transit Plaza at Union Station in downtown Los Angeles. Both lines provide service from approximately 4:30 a.m. to 1:30 a.m. seven days a week, with headways from 10 to 60 minutes on weekdays and 30 to 60 minutes on weekends.

Potential construction-period traffic impacts were assessed at the following three study intersections in the vicinity of the TraPac shaft site.

1. Figueroa Street/I-110 Ramps–C Street
2. Figueroa Street–TraPac Gate/John S. Gibson Boulevard–Harry Bridges Boulevard
3. Fries Avenue/Harry Bridges Boulevard

Existing peak hour LOS for these study intersections is shown in Table 18-6.

LAXT

The Los Angeles Export Terminal (LAXT) shaft site would be used under Alternatives 1 and 2 (Project). As shown on Figure 3-20, the LAXT shaft site is located on Terminal Island on the east side of Ferry Street across from the Terminal Island Water Reclamation Plant. Access for construction workers would likely be via the Ferry Street/Eldridge Street intersection, and access for construction equipment would likely be via the LAXT driveways on Ferry Street. Descriptions of the streets surrounding this shaft site are provided in Table 18-3. The following transit line operates in the vicinity of the LAXT shaft site.

- **LADOT Commuter Express Line 142.** Line 142 travels along the Vincent Thomas Bridge, Seaside Avenue–Ocean Avenue, Ferry Street, and Terminal Way in the vicinity of the LAXT shaft site. This line provides service between Ports O'Call in east San Pedro, downtown San Pedro, and the Long Beach Transit Center via SR-47. The line runs from approximately 5:30 a.m. to 11:30 p.m., seven days a week, with headways of 25 to 60 minutes.

The following five intersections in the vicinity of the LAXT shaft site were analyzed.

1. Ferry Street/SR-47 Eastbound On- and Off-Ramps
2. Ferry Street/Pilchard Street
3. Ferry Street/Terminal Way

4. Earle Street/Terminal Way
5. Navy Way/Seaside Avenue–Ocean Boulevard (SR-47)

Existing peak hour LOS for these study intersections is shown in Table 18-6.

Southwest Marine

The Southwest Marine shaft site would be used under Alternatives 1 and 2 (Project). As shown on Figure 3-21, it would be located on the west side of Seaside Avenue south of the existing Southwest Marine shipbuilding complex on Terminal Island. Access to the Southwest Marine shaft site would be at Seaside Way via Terminal Way and Ferry Street. Descriptions for the streets surrounding this shaft site are provided in Table 18-3. The transit line that serves this area is the same as that described under the LAXT shaft site.

Potential construction-period traffic impacts were assessed at the same five intersections that were analyzed for impacts associated with the LAXT shaft site. Existing peak hour LOS for the selected study intersections is shown in Table 18-6.

Angels Gate

The Angels Gate shaft site would be used under Alternative 3 (Project). As shown on Figure 3-22, it would be located near the southern boundary of Angels Gate Park on the northwest corner of Gaffey Street/Shepard Street–Paseo Del Mar. Access to the Angels Gate shaft site would likely occur from Shepard Street–Paseo Del Mar via Gaffey Street. Descriptions for the streets surrounding this shaft site are provided in Table 18-3. The following transit lines serve the area around the Angels Gate shaft site.

- **Metro Lines 246.** Line 246 operates on Pacific Avenue in the vicinity of the Angels Gate shaft site. Between San Pedro and downtown Los Angeles, this line provides freeway express service via the Harbor Transitway to the Patsaouras Transit Plaza at Union Station in downtown Los Angeles. Line 246 provides service from approximately 4:30 a.m. to 1:30 a.m. seven days a week, with headways from 10 to 60 minutes on weekdays and 30 to 60 minutes on weekends.
- **MAX Line 3.** In the vicinity of the Angels Gate shaft site, this Municipal Area Express bus line travels along Paseo Del Mar and Pacific Avenue. It is a directional express line that brings passengers from the South Bay to employment centers in the El Segundo and Los Angeles International Airport area. The weekday morning northbound route has four buses with headways of 20 to 30 minutes starting at 5:20 a.m. The afternoon southbound route also has four buses with headways of 20 to 30 minutes starting at 5:00 p.m.

The following five intersections in the vicinity of the Angels Gate shaft site were analyzed.

1. Gaffey Street/I-110 Northbound On-Ramp and Southbound Off-Ramp
2. Gaffey Street/9th Street
3. Gaffey Street/Paseo Del Mar
4. Western Avenue/Paseo Del Mar
5. Western Avenue/9th Street

Existing peak hour LOS for these study intersections is shown in Table 18-6.

Royal Palms

The Royal Palms shaft site would be used under Alternative 4 (Project). As shown on Figure 3-23, it would be located adjacent to Royal Palms Beach, predominantly within the Sanitation Districts' property surrounding the existing ocean outfalls manifold that is located there. Access to this site would occur via the beach access road off of West Paseo Del Mar, 0.2 mile east of where Western Avenue begins. Descriptions for the streets surrounding this shaft site are provided in Table 18-3. The transit lines that serve this shaft site are the same as those described under the Angels Gate shaft site.

Potential construction-period traffic impacts were assessed at the same five intersections that were analyzed for impacts associated with the Angels Gate shaft site. Existing peak hour LOS for the selected study intersections is shown in Table 18-6.

18.2.3.3 Riser/Diffuser Areas

Construction of the riser and diffuser would take place at the end of the offshore alignments for Alternatives 1 through 3 (Project), where a riser would be constructed to physically connect the tunnel to seafloor diffusers, as depicted on Figure 3-24. The onshore tunnel alignment for Alternative 4 (Project) would be connected to the existing ocean outfalls at Royal Palms Beach.

San Pedro Shelf

A full description of the San Pedro Shelf (SP Shelf) can be found in Section 3.3.2.3. As stated in Section 3.3.2.3, the parts and materials for the riser and diffuser would be pre-assembled at the Pasha Terminal within the Port of Los Angeles.

Palos Verdes Shelf

A full description of the Palos Verdes Shelf (PV Shelf) can be found in Section 3.3.2.3. As stated in Section 3.3.2.3, the parts and materials for the riser and diffuser would be pre-assembled at the Pasha Terminal within the Port of Los Angeles.

Existing Ocean Outfalls

A full description of the existing ocean outfalls can be found in Section 3.3.2.3. The existing ocean outfalls extend from the existing manifold structure at Royal Palms Beach. Rehabilitation of the existing ocean outfalls would occur in the Pacific Ocean, with boats departing from within the Port of Los Angeles. Descriptions for the relevant streets within and adjacent to the Port of Los Angeles are provided in Table 18-3.

Potential construction-period traffic impacts were assessed at the same five intersections that were analyzed for impacts associated with the Angels Gate and Royal Palms shaft sites. Existing peak hour LOS for the selected study intersections is shown in Table 18-6.

18.3 Regulatory Setting

18.3.1 Federal

Federal regulations governing transportation facilities and activities do not apply to the environmental analysis of the Clearwater Program because no transportation facilities would be constructed.

18.3.2 State

Where construction of the Clearwater Program would affect highways under the jurisdiction of the California Department of Transportation (Caltrans), including surface streets designated as state highways and all freeways and freeway ramps, coordination with that agency would be required. This would include coordination with Caltrans to obtain encroachment permits for work within state rights-of-way and to obtain permits for the transportation of equipment or materials requiring the use of oversize or overweight vehicles.

18.3.3 Regional

The MTA is responsible for preparing the Congestion Management Program for Los Angeles County (CMP). The CMP addresses the impact of local growth on the regional transportation system and monitors the operations of the designated CMP roadway network. At the time of the notice of preparation (NOP) for the draft EIR/EIS, the current CMP was the 2004 CMP. Since that time, in October 2010, the Metro Board adopted the 2010 CMP for Los Angeles County.

18.3.4 Local

Local jurisdictions, including the city of Los Angeles, the city of Carson, and Los Angeles County, have primary responsibility for managing the various roadways that compose the local street network.

Local jurisdictions typically consider construction-related traffic effects as adverse but not significant because such effects, while sometimes inconvenient, are temporary. Additionally, local agencies typically require the preparation of traffic management plans for major construction projects that include designation of haul routes and areas for worker parking and work areas, allowable hours of construction activity, and, where in-street construction would occur, worksite traffic control plans. These plans are prepared to ensure that any construction-related effects are minimized to the greatest extent possible.

Local agencies designate certain streets, major/primary and secondary arterials, as truck routes for use by heavy vehicles. Some local streets, however, have weight limitations or restrictions that limit truck traffic. Typically, trucks are not permitted to travel on these streets except to obtain access to a specific site. Trucks are generally allowed to travel in a “reasonable fashion” to and from a work site and each haul-route permit is reviewed for specific application of its general guidelines.

In the vicinity of the shaft sites that would be used to construct the alternatives (project), the streets listed in Table 18-7 are designated as truck routes. All state highways in this area are designated truck routes.

Table 18-7. Designated Truck Routes in the Project Area

City of Carson	
Avalon Boulevard (between 223rd Street and the southern city limit)	Lomita Boulevard
Figueroa Street	Sepulveda Boulevard
Main Street (between Sepulveda Boulevard and Lomita Boulevard)	
City of Los Angeles	
9th Street	Alameda Street
Anaheim Street	Avalon Boulevard
Ferry Street	Figueroa Street
Fries Avenue	Gaffey Street
Harbor Boulevard	Harry Bridges Boulevard
John S. Gibson Boulevard	Lomita Boulevard
Pacific Avenue	Pacific Coast Highway
Paseo Del Mar	Seaside Avenue
Vermont Avenue	Western Avenue
Wilmington Boulevard (south of Lomita Boulevard)	

Construction traffic would be limited by noise ordinances that restrict the allowable days and hours when construction and excavation work is normally permitted. In the city of Los Angeles, work in residential areas is normally limited to the hours of 7:00 a.m. to 9:00 p.m. on weekdays and 8:00 a.m. to 6:00 p.m. on Saturdays, and no construction or excavation is permitted on Sundays or national holidays. In the city of Carson, the lowest limitations on construction noise are in place from 7:00 a.m. to 8:00 p.m. on weekdays and Saturdays.

18.4 Environmental Impacts and Mitigation Measures

18.4.1 Methodology and Assumptions

The objective of the traffic analysis was to evaluate the potential impacts of the program and project alternatives on the streets in the vicinity of each construction site. The traffic analysis addresses the short-term effects of the use of these streets by construction-related traffic. None of the project elements would require surface construction within public rights-of-way, nor would most of the program elements. The improvements to the conveyance system, one element of the program, would entail the periodic construction of pipelines and structures within public street rights-of-way, potentially including temporary lane closures, driveway blockages, detours, and disruptions to the normal movement of traffic, transit patrons, and pedestrians. The long-term impacts of operation of the facilities were assessed by evaluating the amount of traffic that would be generated under normal operation. Analysis of the alternatives (program) is at a programmatic level, identifying the types of impacts that may occur during construction but not specifying the location of those impacts.

Local agencies have established operational traffic impact criteria for assessing potential impacts of a project on the local street system. These criteria pertain to conditions after completion (i.e., during operation). The operational standards indicate that a project is considered to have a significant traffic impact if the increase in V/C ratio attributed to the project exceeds a specific threshold for each LOS (definitions of LOS are shown in Table 18-4 and Table 18-5). The cities of Los Angeles and Carson have established sliding scales under which the maximum allowable increase in the V/C ratio decreases as the existing V/C ratio increases, as shown in Table 18-8.

Table 18-8. Operational Impact Thresholds for Los Angeles, Los Angeles County, and Carson

V/C Ratio With Project Traffic	Maximum Allowable Increase in V/C Ratio
City and County of Los Angeles	
0.701 to 0.800 (LOS C)	<0.040
0.801 to 0.900 (LOS D)	<0.020
0.901 or greater (LOS E or LOS F)	<0.010
City of Carson	
0.901 or greater (LOS E or LOS F)	<0.020

Using these criteria, a project would not have a significant impact at an analyzed location in either the city or the county of Los Angeles if it were operating at LOS A or B after the addition of project-operational traffic. Also, a project would not have a significant impact on an analyzed location if it were operating at LOS C and the incremental change in the V/C ratio were less than 0.04, or if it were operating at LOS D and the incremental change in the V/C ratio were less than 0.02. If the location were operating at LOS E or F after the addition of project-operational traffic and the incremental change in the V/C ratio were greater than or equal to 0.01, a project would be considered to have a significant impact.

Although the methodology to calculate V/C ratios and the criteria are intended to identify potential traffic impacts during operation, they can also be applied to construction. During construction, however, such impacts would be considered adverse but not significant because the inconvenience for vehicular traffic is temporary.

The projected baseline traffic conditions are a conservative estimate of future conditions without development of the alternatives in 2017 (the year when construction is most intense for Alternatives 1 and 2) and 2019 (the year when construction is most intense for Alternatives 3 and 4). Since this analysis was prepared for the draft EIR/EIS, the project schedule has been shifted 1 year later. Thus, the scenarios analyzed as 2017 and 2019 are now planned to occur in 2018 and 2020. For reasons discussed below, this analysis still represents a conservative estimate of traffic conditions in the horizon years when peak project construction activity would actually occur. While the analysis is presented as it was done, Table 18-15, Table 18-25, and Table 18-32, which show the planned schedule of project activities, have been updated to reflect the current project schedule. These projections reflect the changes to existing traffic levels due to future baseline street improvements, area-wide background traffic growth, and traffic generated by other planned development in the surrounding area.

Several roadway improvements in the study area are expected to be completed by 2017. These improvements, which are the result of local or regional capital improvement programs or as mitigation for ongoing or entitled cumulative development (related) projects, would result in capacity changes at the specified locations. They are included in the adopted budgets for the Port of Los Angeles and the City of Los Angeles Capital Improvement Plan. These infrastructure improvements are listed below. Estimated traffic shifts associated with these improvements listed were drawn from the EIR for the Wilmington Waterfront Development project (ICF 2009).

- **I-110 and C Street Interchange Improvements.** This project would improve the flow of traffic from the I-110 ramps at C Street by consolidating two closely spaced intersections and facilitating heavy right-turn volumes with free-flowing turn lanes. As part of this improvement, C Street would be terminated in a cul-de-sac east of Figueroa Street and would no longer intersect with Figueroa Street. Harry Bridges Boulevard would be re-aligned to intersect with Figueroa Street across from the existing I-110 ramps. Also, part of the improvement would be the construction of

a northbound I-110 off-ramp to eastbound Harry Bridges Boulevard that would be grade-separated over Figueroa Street/John S. Gibson Boulevard east of the consolidated intersection. The existing TraPac terminal gate aligned with Figueroa Street would be relocated and accessed from Lagoon Avenue.

- **Lagoon Avenue Grade Separation.** Also known as the South Wilmington Grade Separation, this grade separation would provide access to all facilities south of Harry Bridges Boulevard, in addition to providing access to the relocated TraPac terminal gate. The purpose of this grade separation is to provide vehicular traffic with an alternative route that avoids existing at-grade railroad crossings on Fries Avenue and Broad Avenue. It would consist of an elevated road extending from Lagoon Avenue, passing over the existing railroad tracks, and connecting to Pier A Street and Fries Avenue. The existing TraPac terminal gate would be relocated to Lagoon Avenue.
- **Harry Bridges Buffer Area.** This project involves the construction of a recreational open space buffer area along the north side Harry Bridges Boulevard from Figueroa Street in the west to Lagoon Avenue in the east. This project involves the closure of all north-south streets between Figueroa Street and Avalon Boulevard except for King Avenue from Harry Bridges Boulevard to C Street. Existing and projected traffic volumes on these streets are low enough to be accommodated by the parallel routes that would remain open (Figueroa Street, King Avenue, Fries Avenue, Marine Avenue, Avalon Boulevard, and Broad Avenue).
- **Equipping All Signalized Study Intersections With Automated Traffic Surveillance and Control/Adaptive Traffic Control System.** The city of Los Angeles currently plans to equip all signalized intersections with ATSAC systems and install the state-of-the-art adaptive traffic control system (ATCS) as an additional feature of the ATSAC system. ATCS is the latest enhancement to the ATSAC system and uses a personal-computer-based traffic signal control software program that provides fully traffic-adaptive signal control based on real-time traffic conditions. ATCS allows for the automatic adjustment to the traffic signal timing strategy and control pattern in response to current traffic demands by allowing ATCS to control all three critical elements of traffic signal timing simultaneously, namely cycle length, phase split, and offset. In the analysis of future operating conditions, a total capacity increase of 10 percent (0.10 V/C adjustment) was applied to reflect the benefits of ATSAC/ATCS control at all signalized study intersections in Los Angeles.

Application of the growth factor found in the 2004 CMP (0.65 percent per year) was used to estimate total ambient growth to 2017 and 2019. The annual growth factor for this sub-region found in the 2010 CMP is slightly lower (0.51 percent per year), reflecting a revised regional growth forecast. Application of the current (lower) ambient growth factor for 8 or 10 years instead of the higher ambient growth factor for 7 or 9 years would yield over 10 percent less ambient growth than was used in this analysis (4.08 percent over 8 years instead of 4.55 percent over 7 years, and 5.1 percent over 10 years instead of 5.85 percent over 9 years). Thus, the analysis presented here uses a conservative assumption of ambient traffic growth. In addition, information was obtained from LADOT, the city of Carson, and the county of Los Angeles regarding approved or planned development projects (cumulative projects) in the vicinity of the alternatives (project). A list of these 50 projects and the estimated trip generation of each is presented in Table 18-9. Their locations are shown on Figure 18-4. Field checks were conducted to confirm that these projects have not yet been completed. Estimated cumulative project traffic was estimated on the basis of previous traffic studies and the trip generation rates contained in Trip Generation, 7th Edition (Institute of Transportation Engineers [ITE] 2003). These projections are conservative in that they do not in every case account for either the existing uses to be removed or the potential use of alternative travel modes (public transit, walking, etc.). The geographic distribution of cumulative project traffic was based on the

type and density of the proposed land uses, the geographic distribution of population from which the patrons and employees may be drawn, and the location of the each cumulative project in relation to the surrounding street system.

Table 18-9. Trip Generation Estimates for Cumulative Development Projects

					AM Peak Hour			PM Peak Hour		
Project Location		**Land Use**	**Size**		**In**	**Out**	**Total**	**In**	**Out**	**Total**
City of Carson										
1	129 E 223rd Street	Day Care Center	20	Students	8	8	16	8	8	16
2	440 E Sepulveda Boulevard	Office Building	10.66	KSF	27	4	31	15	76	91
3	101–155 E Lomita Boulevard	Retail	16.53	KSF	32	21	53	92	99	191
		Self Storage	105.49	KSF	9	7	16	14	13	27
	Subtotal				41	28	69	106	112	218
4	2211–2241 E Carson Street	Warehouse	270.764	KSF	138	30	168	36	107	143
5	20630 S Figueroa Street	Office Building	132.5	KSF	207	28	235	39	188	227
		Manufacturing Space	132.5	KSF	62	19	81	32	58	90
	Subtotal				269	47	316	71	246	317
6	708–724 E Carson Street	Condominiums	236	DU	18	86	104	82	41	123
7	21219 S. Figueroa Street	Office Building	11.437	KSF	29	4	33	16	76	92
8	Del Amo/ Dominquez Chanel	Mixed-Use Development	--		1,266	1,244	2,508	2,992	2,917	5,839
Unincorporated Los Angeles County										
9	958 W. Sepulveda Boulevard	Gym	30.351	KSF	16	21	37	63	60	123
		Less: Existing Discount Store	30.351	KSF	-47	-30	-77	-137	-148	-285
	Subtotal				-31	-9	-40	-74	-88	(162)
City of Los Angeles										
10	330 S. Centre Street	Police Headquarters	155	Employees	43	10	53	38	64	102
		Office	12.5	KSF						
11	281 W. 8th Street	Condominium	72	DU	7	32	39	42	21	63
		Retail	7	KSF						
12	550 S. Palos Verdes Street	Condominium	251	DU	15	62	77	29	17	46
		Retail	4	KSF						
13	LAUSD South Region High School #15	High School	810	Students	171	145	316	54	60	114
		Adult Evening School	450	Students	N/A	N/A	N/A	35	19	54
	Subtotal				171	145	316	89	79	168

Table 18-9 (Continued)

Project Location		Land Use	Size		AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
14	1717 W 255th Street, Harbor City	K-8 Private School	225	Students	85	55	140	(9)	(13)	(22)
15	1311 Sepulveda Boulevard, Torrance	Apartments	352	DU	4	15	19	36	19	55
16	2700 Lomita Boulevard, Torrance	Office Building	222	KSF	56	8	64	138	674	812
		Medical Office	129	KSF						
17	522 Flint Avenue, Wilmington	Rail Transfer Facility	4	Acres	16	17	33	14	15	29
18	1655 E Anaheim Street, Wilmington	Retail	5.332	KSF	104	67	171	65	70	135
19	2300 N Taper Avenue, San Pedro	Private High School	650	Students	359	162	521	52	59	111
20	755 L Street	Warehouse	135	KSF	72	50	122	9	102	111
21	1427 N Gaffey Street at Basin Street	Single Family Homes	135	DU	25	76	101	86	50	136
22	327 and 407 N Harbor Boulevard at O'Farrell Street	Condominiums	94	DU	7	34	41	33	16	49
		Specialty Retail	3	KSF	1	1	2	3	3	6
	Subtotal				8	35	43	36	19	55
23	931 N Frigate Avenue		128	Students	56	46	102	10	12	22
24	Berths 121–131		N/A	N/A	252	111	363	206	302	508
25	Berths 100–102		N/A	N/A	262	115	377	214	314	528
26	Berths 136–147		N/A	N/A	122	85	207	86	124	210
27	Wilmington Boulevard and Anaheim Street	Restaurant	N/A	N/A	149	155	304	114	94	208
28	Berths 171–181	Marine Terminal	N/A	N/A	143	118	261	93	139	232
29	West Side of Los Angeles Main Channel		N/A	N/A	646	462	1,108	562	751	1,313
30	407–409 7th Street and 390 W 8th Street	Residential Lofts	87	DU	9	42	51	57	28	85
		Specialty Retail	5	KSF						
31	255 W 5th Street at Centre Street	High-Rise Condominiums	220	DU	13	53	66	53	33	86
32	666 S Centre Street	Residential Lofts	116	DU	5	23	28	22	11	33
		Specialty Retail	20	KSF	7	4	11	18	23	41
	Subtotal				12	27	39	40	34	74
33	245–255 W 7th Street	Condominiums	26	DU	2	9	11	9	4	14

Table 18-9 (Continued)

Project Location		Land Use	Size		AM Peak Hour			PM Peak Hour		
					In	Out	Total	In	Out	Total
34	111 N Harbor Boulevard and 203–233 Harbor Boulevard	Condominiums	158	DU	12	58	70	55	27	82
		Specialty Retail	8	KSF	2	2	4	7	9	16
	Subtotal				14	60	74	62	36	98
35	420–430 9th Street at Mesa	Condominiums	25	DU	2	9	11	9	4	13
36	210 N Palos Verdes Street	Apartments	49	DU	5	20	25	20	10	30
37	308 N Palos Verdes Street	Town Homes	16	DU	1	6	7	5	3	8
38	366–372 W 8th Street	Condominiums	18	DU	1	7	8	6	3	9
39	901 E Street	Warehouse	85	KSF	61	13	74	14	43	57
40	L Street and Lecouvreur Street	Single Family Homes	8	DU	2	4	6	5	3	8
41	Miner and 22nd Street	Cabrillo Marina Phase II	N/A	N/A	102	83	185	186	172	358
42	26900 S Western Avenue	Condominiums	1,725	DU	112	475	587	407	249	656
		Senior Housing	575	DU	21	25	46	38	25	63
		Baseball Fields	2	Fields	2	1	3	28	13	41
	Subtotal				135	501	636	473	287	760
43	Harry Bridges Boulevard and Avalon Boulevard	Restaurant, Industrial, Retail	180	KSF	150	39	189	83	191	274
44	Maritime Industrial	130 - Industrial Park	-13	Acres	-81	-17	-98	-21	-73	-94
45	Wilmington Boulevard and E Street	Condominiums	115	DU	9	42	51	40	20	60
		Apartments	120	DU	12	49	61	48	26	74
		Single Family Homes	76	DU	14	43	57	49	28	77
		Senior Housing	100	DU	4	4	8	7	4	11
	Subtotal				39	138	177	144	78	222
46	Berths 226–236	Container Terminal Expansion	N/A			N/A			N/A	
47	Berths 302–305	Container Terminal Expansion	N/A			N/A			N/A	
48	Terminal Island	Container Inspection Area	N/A			N/A			N/A	
49	Berths 212–224	Container Terminal Expansion	N/A			N/A			N/A	
50	Port of Long Beach – Pier S	Container Terminal	N/A			N/A			N/A	
	Total				4,962	4,763	9,723	6,780	7,550	14,261

Table 18-9 (Continued)

Project Location	Land Use	Size	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
KSF = thousand square feet								
DU = dwelling units								
N/A = not available								
Source Data:								
Projects 1–8: Project parameters based on city of Carson website data.								
Project 9: Project parameters based on Los Angeles County project list.								
Projects 10–13: Based on data from Traffic Study for Los Angeles Unified School District South Region High School #15 (KOA Corporation 2008).								
Projects 14–19: Weekday data provided by LADOT. In/out splits from "Peak Hour Adjacent Street Traffic," Trip Generation, 7th Edition, ITE.								
Projects 20–44: Based on data from San Pedro Waterfront Project and Wilmington Waterfront Project.								
Projects 45–50: Based on data from Gerald Desmond Bridge EIR/EIS, Iteris, October 2009.								

Trip generation estimates prepared for each construction phase of the alternatives (project) were based on projected staffing and truck activity levels. To provide a conservative analysis, it was assumed that all day-shift construction workers and 10 percent of truck trips at each site would arrive or depart during the peak hours of adjacent street traffic (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m.). The projected future baseline traffic volumes at the study intersections prior to construction of the project and the changes related to construction activities in terms of temporary additional vehicular traffic attributable to the project were evaluated to identify potentially adverse impacts. This traffic analysis represents a conservative (i.e., worst-case) scenario in consideration of the upper bounds of impacts likely to be experienced on the street system in the vicinity of each shaft site where construction activities would result in the temporary increase of vehicular traffic.

The following general trip distribution is assumed for construction worker trips to and from the shaft sites, based on the population density of the surrounding area from which workers would be drawn.

- 45 percent to and from the north
- 40 percent to and from the east
- 15 percent to and from the west

The location(s) to which soil excavated during tunnel construction would be transported is unknown at this time. For the purpose of this analysis, it was assumed that it would be transported by truck via I-110, I-710, and other freeways to one or more locations within 150 miles of the working shaft sites.

Analysis was conducted to comply with the Los Angeles County CMP requirements, which present a regional analysis to quantify potential impacts of the project on the regional freeway system serving the project area, including impacts on the I-110 and I-710 segments, CMP freeway monitoring locations, and CMP intersection monitoring stations included in the Los Angeles County CMP road network in the vicinity of the project.

The CMP guidelines indicate that if a proposed development project would add 150 or more trips in either direction during either the morning or evening peak hour to the mainline freeway monitoring location, then a CMP freeway analysis must be conducted. If a project would add 50 or more peak hour trips (of adjacent street traffic) to a CMP arterial intersection, then a CMP arterial intersection analysis must be conducted.

For the purposes of a CMP traffic impact analysis, a project impact is considered to be significant if the project increases traffic demand on a CMP roadway by 2 percent of capacity (V/C greater than 0.02), causing or worsening LOS F (V/C greater than 1.00). Under these criteria, a project would not be considered to have a regionally significant impact if the analyzed roadway is operating at LOS E or better after the addition of project traffic, regardless of the increase in V/C ratio caused by the project. If the roadway is operating at LOS F with project traffic and the incremental change in the V/C ratio caused by the project is 0.02 or greater, the project would be considered to have a significant impact.

18.4.1.1 Baseline

CEQA Baseline

Section 15125 of the California Environmental Quality Act (CEQA) Guidelines requires EIRs to include a description of the physical environmental conditions in the vicinity of a proposed project that exist at the time of the NOP. These environmental conditions would normally constitute the baseline physical conditions by which the CEQA lead agency determines whether an impact is significant (*Sunnyvale West Neighborhood Association v. City of Sunnyvale City Council* (2010) decision). However, a lead agency has discretion not to use an environmental baseline as of the time of the NOP for the analysis of traffic impacts where the agency determines, on the basis of substantial evidence, that future traffic conditions surrounding the proposed project will change regardless of whether the proposed project is approved. Local and regional planning agencies long-term projections, as well as information on specific development projects, support the conclusion that traffic volumes will increase in the study area. The transportation and traffic impact analysis of the Clearwater Program assesses potential impacts against future baseline conditions because the alternatives include detailed schedules for construction and operation of the various elements. The use of future baseline conditions to assess project impacts provides a more conservative analysis of potential project impacts than existing baseline conditions because the estimated future traffic volumes are higher than existing traffic volumes, and the applicable thresholds of significance are based on a sliding scale that is more sensitive under more congested conditions (i.e., conditions with higher traffic volumes). The specific future baseline transportation improvements assumed in this analysis are identified in the relevant programming documents for the city of Los Angeles and the Port of Los Angeles. Transportation improvements that are planned but not funded are not assumed to be in place in the future horizon years. This provides a reasonable basis for estimating the future traffic conditions within which project construction would occur.

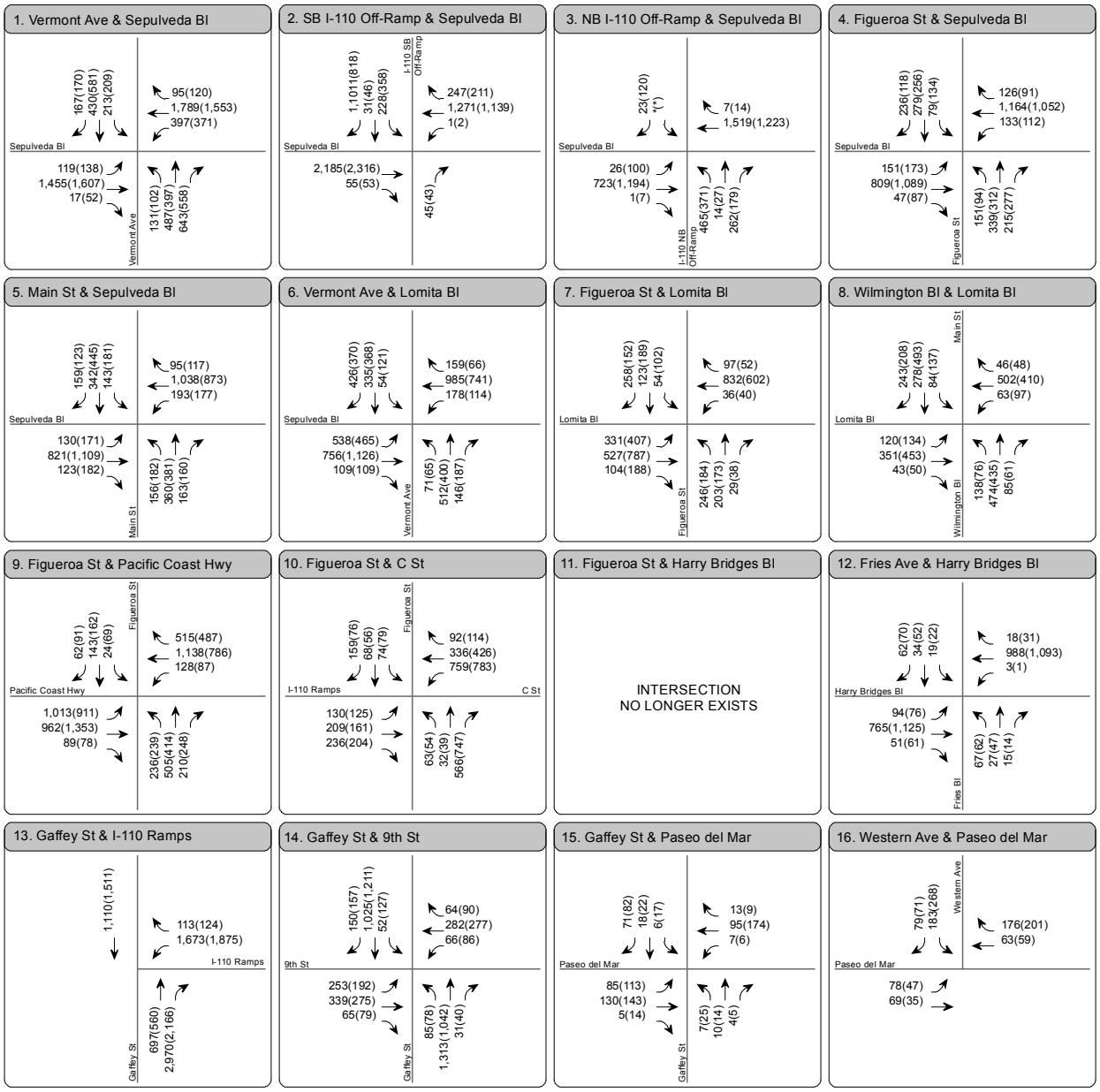
The CEQA baseline (program and project) is the cumulative future traffic conditions that would exist without the development of the alternatives. This baseline is compared against the proposed project conditions for the years identified in the Clearwater Program where construction would be the most intense. For Alternatives 1 and 2 (Project), the year 2017 was used. For Alternatives 3 and 4 (Project), year 2019 was used. The impact using this methodology accounts for the proposed project itself, as well as regional traffic growth, proposed local development projects, and traffic increases resulting from the Port of Los Angeles throughput growth that is not attributable to the proposed project. This method ensures that the growth of background traffic in the future years is not improperly attributed to the project. Although this methodology differs from that used in other resource chapter, it is utilized in this chapter because it provides a realistic and conservative identification and determination of the likely traffic impacts. To develop CEQA baseline conditions for 2017 and 2019, the cumulative base traffic volumes were analyzed using the LOS methodologies described in Section 18.2.3 to project future operating conditions at the study intersections for the weekday AM and PM peak hours. This analysis assumed completion of the related projects described in Table 18-9, as well as regional traffic growth. Figures 18-5 and 18-6 show the projected future traffic volumes at the study intersections in 2017 and in 2019, respectively. The 2017 and 2019 CEQA baseline LOS at the study intersections for Alternatives 1

FIGURE 18-4

CLEARWATER Program

Location of Cumulative Development Projects

Source: Sanitation Districts of Los Angeles County 2011, Fehr & Peers 2010, Thomas Bros. 2011, ESRI 2011



LEGEND

A M(PM) Peak Hour Traffic Volume

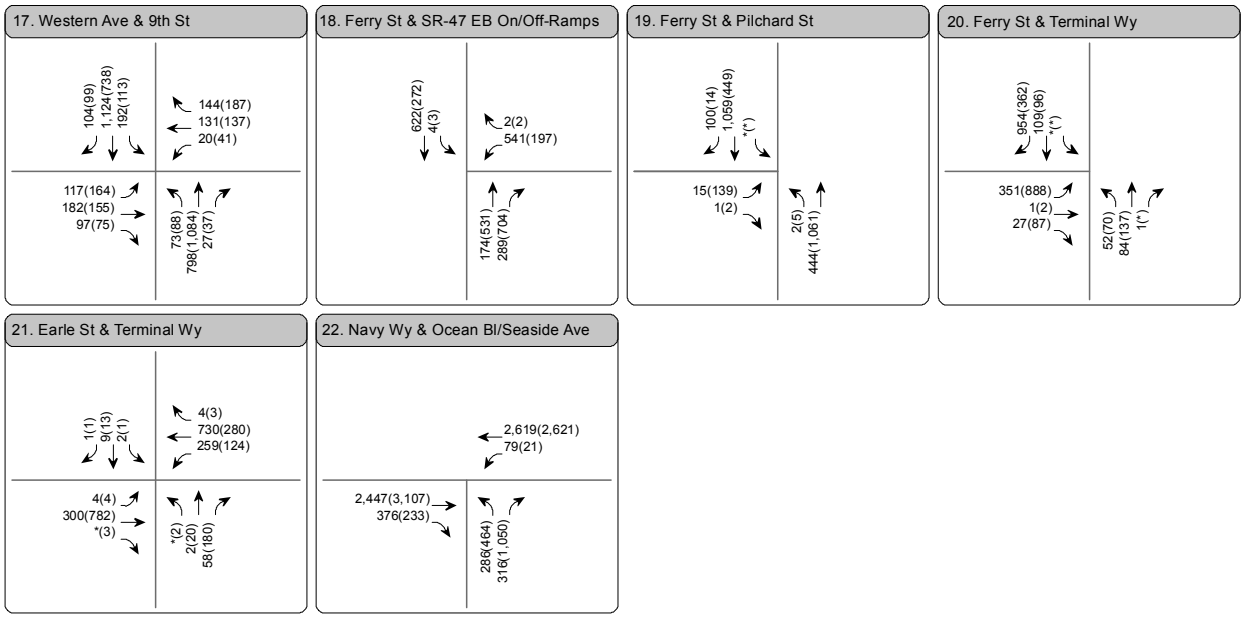
* No Traffic Data

FIGURE 18-5

CLEARWATER Program

Cumulative Base (2017) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010



LEGEND

A M(PM) Peak Hour Traffic Volume

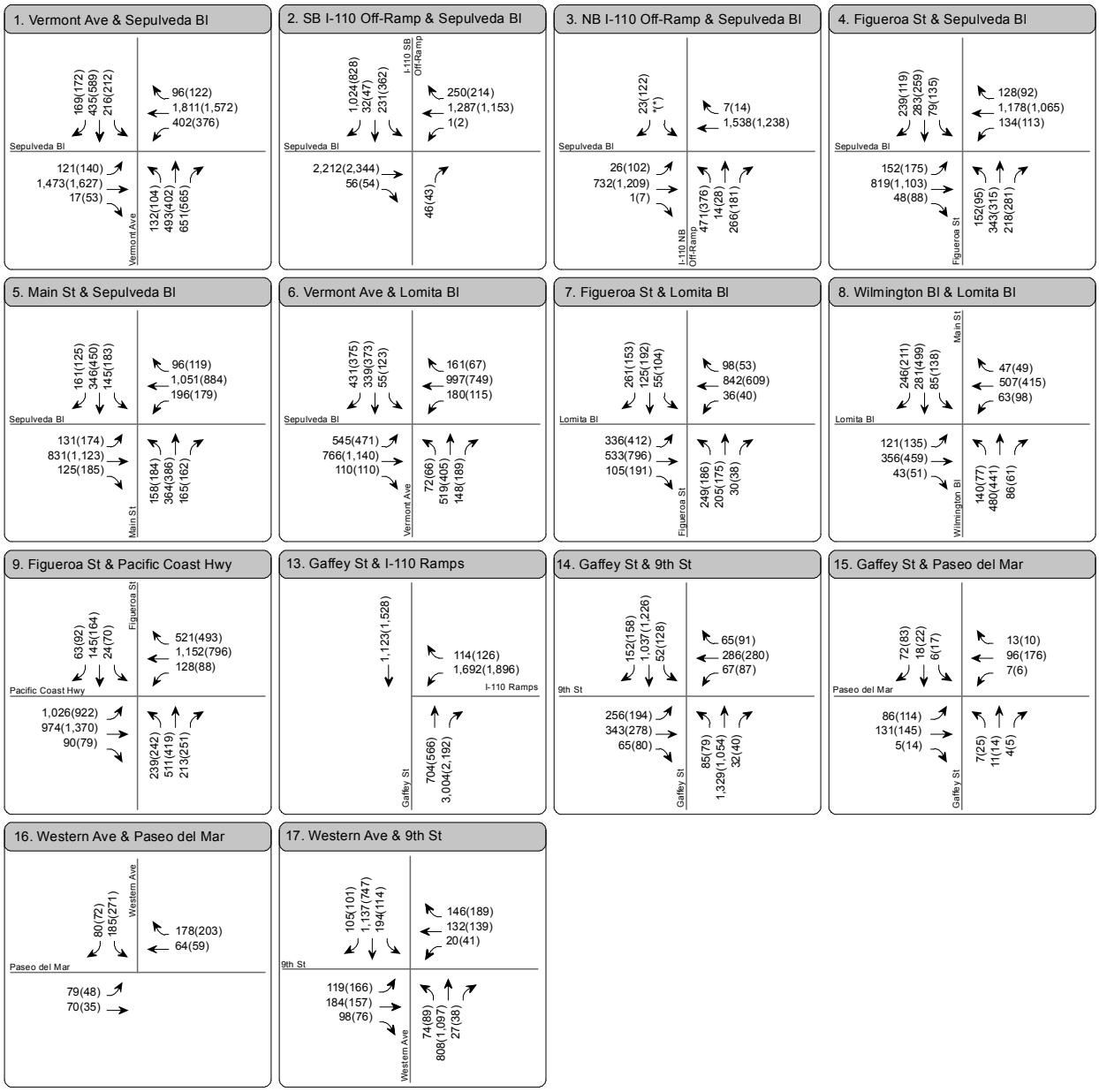
* No Traffic Data

FIGURE 18-5 (continued)

CLEARWATER Program

Cumulative Base (2017) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010



LEGEND

A M(PM) Peak Hour Traffic Volume

* No Traffic Data

FIGURE 18-6

CLEARWATER Program

Cumulative Base (2019) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010

and 2 (Project) and for Alternatives 3 and 4 (Project) are summarized in Table 18-10. As indicated in the table, 18 of the 21 study intersections are projected to operate at LOS D or better during the AM and PM peak hours in 2017, and 10 of the 14 study intersections are projected to operate at LOS D or better during the AM and PM peak hours in 2019. The exceptions are the intersections of Vermont Avenue/ Sepulveda Boulevard, Southbound I-110 Off-Ramp/Sepulveda Boulevard, Vermont Avenue/Lomita Boulevard, and Figueroa Street/Pacific Coast Highway.[1]

Table 18-10. Alternatives (Project) Cumulative Base (2017 and 2019) Intersection Level of Service Analysis

			Existing (Year 2010)		Cumulative Base (Year 2017)		Cumulative Base (Year 2019)	
	Intersection	Peak Hour	V/C or Delay	LOS	V/C or Delay	LOS	V/C or Delay	LOS
Study Intersections in the Vicinity of the JWPCP East and JWPCP West Shaft Sites								
1	Vermont Avenue	AM	0.935	E	0.980	E	0.992	E
	Sepulveda Boulevard	PM	0.925	E	0.969	E	0.981	E
2	SB I-110 Off-Ramp	AM	0.858	D	0.899	D	0.910	E
	Sepulveda Boulevard	PM	0.817	D	0.855	D	0.865	D
3	NB I-110 Off-Ramp	AM	0.712	C	0.739	C	0.746	C
	Sepulveda Boulevard	PM	0.698	B	0.728	C	0.736	C
4	Figueroa Street	AM	0.710	C	0.739	C	0.746	C
	Sepulveda Boulevard	PM	0.725	C	0.759	C	0.766	C
5	Main Street	AM	0.681	B	0.710	C	0.717	C
	Sepulveda Boulevard	PM	0.774	C	0.811	D	0.819	D
6	Vermont Avenue	AM	0.963	E	1.019	F	1.031	F
	Lomita Boulevard	PM	0.799	C	0.847	D	0.858	D
7	Figueroa Street	AM	0.787	C	0.779	C	0.787	C
	Lomita Boulevard	PM	0.654	B	0.716	C	0.724	C
8	Main Street/Wilmington Boulevard	AM	0.956	E	0.560	A	0.564	A
	Lomita Boulevard	PM	0.964	E	0.553	A	0.557	A
9	Figueroa Street	AM	0.929	E	0.945	E	0.958	E
	Pacific Coast Highway[a]	PM	0.862	D	0.875	D	0.887	D
Study Intersections in the Vicinity of the TraPac Shaft Site								
10	Figueroa Street	AM	10.7 sec.	B	0.497	A	Intersection was not analyzed under these alternatives.	
	I-110 Ramps/C Street[a b c]	PM	13.6 sec.	B	0.415	A		
11	Figueroa Street/TraPac Gate	AM	0.379	A	Intersection will not exist in the future.		Intersection was not analyzed under these alternatives.	
	Harry Bridges Boulevard[d]	PM	0.465	A				
12	Fries Avenue	AM	0.313	A	0.471	A	Intersection was not analyzed under these alternatives.	
	Harry Bridges Boulevard[a]	PM	0.403	A	0.571	A		

[1] A supplemental traffic analysis was also completed to determine if impacts would be different using an existing traffic baseline rather than the future baseline. This supplemental traffic analysis is included as Appendix 18-C. This analysis concluded that the impacts compared to existing traffic were consistent with the impacts compared to the future baseline conditions.

Table 18-10 (Continued)

Intersection		Peak Hour	Existing (Year 2010) V/C or Delay	Existing (Year 2010) LOS	Cumulative Base (Year 2017) V/C or Delay	Cumulative Base (Year 2017) LOS	Cumulative Base (Year 2019) V/C or Delay	Cumulative Base (Year 2019) LOS
Study Intersections in the Vicinity of the Angels Gate and Royal Palms Shaft Sites								
13	Gaffey Street	AM	0.488	A	Intersection was not analyzed under these alternatives.		0.551	A
	I-110 Ramps[a]	PM	0.623	B			0.689	B
14	Gaffey Street	AM	0.712	C	Intersection was not analyzed under these alternatives.		0.793	C
	9th Street[a]	PM	0.716	C			0.791	C
15	Gaffey Street	AM	8.5 sec.	A	Intersection was not analyzed under these alternatives.		8.5 sec.	A
	Paseo Del Mar[b]	PM	9.1 sec.	A			9.4 sec.	A
16	Western Avenue	AM	11.1 sec.	B	Intersection was not analyzed under these alternatives.		11.5 sec.	A
	Paseo Del Mar[e]	PM	11.8 sec.	B			12.2 sec.	A
17	Western Avenue	AM	0.543	A	Intersection was not analyzed under these alternatives.		0.564	A
	9th Street[a]	PM	0.569	A			0.593	A
Study Intersections in the Vicinity of the LAXT and Southwest Marine Shaft Sites								
18	Ferry Street	AM	0.476	A	0.324	A	Intersection was not analyzed under these alternatives.	
	SR-47 EB On/Off-Ramps[a]	PM	0.262	A	0.451	A		
19	Ferry Street	AM	0.231	A	0.299	A	Intersection was not analyzed under these alternatives.	
	Pilchard Street[a]	PM	0.357	A	0.347	A		
20	Ferry Street	AM	0.520	A	0.571	A	Intersection was not analyzed under these alternatives.	
	Terminal Way[a]	PM	0.718	C	0.307	A		
21	Earle Street	AM	0.476	A	0.213	A	Intersection was not analyzed under these alternatives.	
	Terminal Way[a]	PM	0.262	A	0.365	A		
22	Navy Way	AM	0.231	A	0.623	B	Intersection was not analyzed under these alternatives.	
	Ocean Boulevard/Seaside Avenue[a]	PM	0.357	A	0.814	D		

[a] Intersection is assumed to be operating under ATSAC and ATCS system in the future. Per LADOT guidelines, a 10 percent capacity credit has been taken at intersections operating with ATSAC/ATCS systems.

[b] Intersection is a four-way stop-controlled intersection. Level of service is based on 2000 HCM four-way stop method. Average delay of the intersection is reported.

[c] Intersection would be reconfigured in the future per the conceptual plan for Harry Bridges Boulevard realignment.

[d] Intersection analyzed under existing conditions only. In the future, intersection would no longer exist per the conceptual plan for Harry Bridges Boulevard realignment.

[e] Intersection is a one-way stop-controlled intersection. Level of service is based on 2000 HCM unsignalized method. Worst approach delay of the intersection is reported.

NEPA No-Federal-Action Baseline

The National Environmental Policy Act (NEPA) no-federal-action baseline for the Clearwater Program is described in Section 1.7.4.2. The NEPA baseline in general represents the condition of resources at the year 2022 when construction of project elements under the United States (U.S.) Army Corps of Engineers' (Corps') jurisdiction would conclude.

The CEQA baseline for transportation and traffic (terrestrial) utilizes projected conditions in the year 2017 for Alternatives 1 and 2, and the year 2019 for Alternatives 3 and 4. The methodology would account for the proposed project itself, as well as regional traffic growth, proposed local development projects, and traffic increases resulting from the Port of Los Angeles throughput growth that is not attributable to the proposed project. The projections for all alternatives at 2017 and 2019 would remain comparable to conditions in the year 2022. Therefore, the NEPA no-federal-action baseline is the same as the CEQA baseline.

Note that the NEPA analysis includes direct and indirect impacts as discussed in Section 3.5.2. Any impact associated with project elements located within the Corps' geographic jurisdiction (i.e., the marine environment) during construction would be the direct result of the Corps permit and considered a direct impact under NEPA. Any impact associated with project elements located outside the Corps' geographic jurisdiction during construction would be the indirect result of the Corps permit and considered an indirect impact under NEPA. Any impact that occurs during operation would be considered an indirect impact under NEPA.

18.4.2 Thresholds of Significance

The project would pose a significant impact if it exceeds any of the following thresholds for terrestrial transportation and traffic (TRT):

TRT-1. Conflicts with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

TRT-2. Conflicts with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways.

TRT-3. Results in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

TRT-4. Substantially increases hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

TRT-5. Results in inadequate emergency access.

TRT-6. Conflicts with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities.

Program and project elements were analyzed by threshold in the Preliminary Screening Analysis (Appendix 1-A) to identify potentially significant impacts to terrestrial transportation and traffic before mitigation. Table 18-11 identifies which elements were brought forward for further analysis by threshold

in this EIR/EIS for Alternatives 1 through 4. If applicable, Table 18-11 also identifies thresholds evaluated in this EIR/EIS if an emergency discharge into various water courses were to occur under the No-Project or No-Federal Action Alternatives, as described in Sections 3.4.1.5 and 3.4.1.6.

Table 18-11. Thresholds Evaluated

		Threshold					
	Alt.	**TRT-1**	**TRT-2**	**TRT-3**	**TRT-4**	**TRT-5**	**TRT-6**
Program Element							
Conveyance System Improvements	1–5	X	X		X	X	X
SJCWRP Plant Expansion	1–5	X	X		X	X	X
SJCWRP Process Optimization	1–4	X	X		X	X	X
POWRP Process Optimization	1–4	X	X		X	X	X
LCWRP Process Optimization	1–4	X	X		X	X	X
LBWRP Process Optimization	1–4	X	X		X	X	X
JWPCP Solids Processing	1–5	X	X		X	X	X
JWPCP Biosolids Management	1–5	X	X		X	X	X
Project Element							
Wilmington to SP Shelf (onshore tunnel) [a]	1,2	X	X		X	X	X
Wilmington to SP Shelf (offshore tunnel)	1	X	X		X	X	X
Wilmington to PV Shelf (onshore tunnel)[a]	1,2	X	X		X	X	X
Wilmington to PV Shelf (offshore tunnel)	2	X	X		X	X	X
Figueroa/Gaffey to PV Shelf (onshore tunnel)	3	X	X		X	X	X
Figueroa/Gaffey to PV Shelf (offshore tunnel)	3	X	X		X	X	X
Figueroa/Western to Royal Palms (onshore tunnel)	4	X	X		X	X	X
JWPCP East Shaft Site	1,2	X	X		X	X	X
TraPac Shaft Site	1,2	X	X		X	X	X
LAXT Shaft Site	1,2	X	X		X	X	X
Southwest Marine Shaft Site	1,2	X	X		X	X	X
JWPCP West Shaft Site	3,4	X	X		X	X	X
Angels Gate Shaft Site	3	X	X		X	X	X
Royal Palms Shaft Site	4	X	X		X	X	X
SP Shelf Riser/Diffuser Area	1	X	X		X	X	X
PV Shelf Riser/Diffuser Area	2,3	X	X		X	X	X
Existing Ocean Outfalls Riser/Diffuser Area	1–4	X	X		X	X	X

[a] The onshore tunnel alignment for the Wilmington to SP Shelf is the same as the onshore tunnel alignment for the Wilmington to PV Shelf.
Alt. = alternative

In the alternatives analysis that follows, if a program or project element is common to more than one alternative, a detailed discussion is presented only in the first alternative in which it appears.

18.4.3 Alternative 1

18.4.3.1 Program

Impact TRT-1. Would Alternative 1 (Program) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Conveyance System – Conveyance Improvements

Construction

The Clearwater Program has identified the need for future conveyance improvements. Implementation of the program-level conveyance improvements could result in impacts on traffic. At this time, however, no specific projects have been proposed. Even so, the Sanitation Districts incorporate many standard practices and requirements into each publicly bid construction contracts to minimize any traffic impacts. These standard practices and bid requirements are used on all conveyance system construction projects, whether installing new sewers or rehabilitating existing sewers.

- **Traffic Management/Control Plan.** A construction work site traffic management/control plan is prepared by the contractor and submitted to the responsible local agency for review and approval prior to the start of any construction work.
- **Advance Notice to Affected Parties.** An advance notice is provided to any affected residents, businesses, and property owners in the vicinity of each construction site. Any alternative means of access is identified where existing property access will be reduced.
- **Coordination With Emergency Service and Public Transportation Providers.** Advance notice is provided to emergency service (police, fire, and ambulance) and public transportation providers for any lane closures, detours, construction hours, or changes to local access.
- **Alternative Pedestrian and Bicycle Access Routes Identified.** Where sidewalks, crosswalks, or bike lanes are affected, alternative access routes are identified.

During the construction period, conveyance improvements would be constructed employing jacking/tunneling or open-trench methods, or a combination of the two. If the conveyance improvements were constructed using the jacking/tunneling method, temporary localized adverse impacts could occur in the vicinity of jacking/tunnel-access pits. If conveyance improvements were constructed using open-trench methods, the same types of adverse impacts would be expected, but their geographic extent would be larger, i.e., they would extend along the entire area of open-trench construction in streets and public rights-of-way. Effects could involve the temporary closure of travel and/or parking lanes, temporary closure of bicycle lanes and sidewalks, temporary relocation of bus stops, and limitations on local access. Because the precise location of the planned conveyance improvements and the appropriate construction techniques are not known at this time, the specific location of these potential impacts cannot be determined. The construction would result in the temporary addition of worker trips and truck trips (material delivery and removal of excavated soil) to the surrounding regional and local transportation system. Preliminary estimates show the need for approximately five truck trips per day and approximately five construction workers at any work site. The lane closures required for construction of

the conveyance system would temporarily reduce roadway capacity, but with the Sanitation Districts implementing the standard practices and bid requirements used on all conveyance system construction projects, construction-related traffic effects are considered to be less than significant.

Operation

Because the conveyance system is located underground, neither temporary lane closures nor additional trips are anticipated during the operation of the conveyance system; therefore, there would be no impacts.

San Jose Creek Water Reclamation Plant – Plant Expansion

Construction

Construction of the plant expansion would result in the temporary addition of worker trips and truck trips to and from the SJCWRP to the surrounding regional and local transportation system. Preliminary estimates show the need for approximately 30 workers to complete construction. It is anticipated that construction for this program element would last between 2 and 3 years and would be completed by approximately 2050. Implementation of Mitigation Measure (MM) TRT-1 would reduce the impacts from these additional trips to less than significant.

Operation

During regular operation of the SJCWRP, the permanent staff is not anticipated to increase appreciably; therefore, few, if any, additional trips are anticipated. Therefore, there would be no impacts.

San Jose Creek Water Reclamation Plant, Pomona Water Reclamation Plant, Los Coyotes Water Reclamation Plant, and Long Beach Water Reclamation Plant – Process Optimization

Construction

Construction for process optimization would result in the temporary addition of worker trips and truck trips to and from each WRP to the surrounding regional and local transportation system. Preliminary estimates show the need for approximately 30 workers to complete construction at each WRP. It is anticipated that construction for these program elements would last between 2 and 3 years and would be completed between 2018 and 2028. Implementation of MM TRT-1 would reduce the impacts from these additional trips to less than significant.

Operation

During regular operation of each WRP, the permanent staff is not anticipated to increase appreciably; therefore, few, if any, additional trips are anticipated. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Solids Processing

Construction

Construction for solids processing would result in the temporary addition of worker trips and truck trips to and from the JWPCP to the surrounding regional and local transportation system. Preliminary assumptions anticipate the need for approximately 50 one-way truck trips per day for excavation and

hauling to complete construction. It is anticipated that construction for this element would be completed by approximately 2040. Implementation of MM TRT-1 would reduce the impacts from these additional trips to less than significant.

Operation

During the operation of these solids processing facilities, no additional trips to the surrounding roadway network are anticipated. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Biosolids Management

Operation

In the operational phase, additional biosolids management would be expected to generate approximately 20 additional truck loads (40 additional one-way truck trips) per day as a result of this program element. As stated in Section 2.2.4.3, the current peak period for trucks transporting biosolids from the JWPCP occurs from 5:00 a.m. to 2:00 p.m. Assuming that the additional trips would also occur during this 9-hour peak period, this would result in approximately two to three inbound and two to three outbound truck trips per hour. At this level of increase, the impact of these additional trips on the surrounding regional and local transportation system would be less than significant.

CEQA Impact Determination

Construction of plant expansion at the SJCWRP; process optimization at the SJCWRP, POWRP, LCWRP, and LBWRP; and solids processing facilities at the JWPCP for Alternative 1 (Program) would conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts would be significant before mitigation. Operation of Alternative 1 (Program) would result in less than significant impacts.

Mitigation

MM TRT-1. Prepare and implement a construction traffic management plan. The plan will be submitted to the appropriate local agency for review and approval prior to the start of any construction work. This plan will include such elements as the project schedule, the designation of haul routes for construction-related trucks, the location of access to the construction site, designated staging and parking areas for workers and equipment, any driveway turning movement restrictions, any temporary traffic control devices or flagmen, and any travel time restrictions for construction-related traffic to avoid peak travel periods on selected roadways.

Residual Impacts

Residual impacts would be less than significant.

Impact TRT-2. Would Alternative 1 (Program) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?

Conveyance System – Conveyance Improvements

Construction

The CMP impact methodology described in Section 18.4.1 includes a minimum threshold for CMP impact analysis of 150 or more one-way peak hour trips at a mainline freeway monitoring station or 50 or more peak hour trips at a CMP arterial monitoring intersection. It is anticipated that the amount of construction-related one-way peak hour trips would be less than the minimum threshold. In addition, construction-related trips would be, by their nature, of limited duration. Based on these considerations, construction-related traffic impacts would be less than significant.

Operation

No additional trips are anticipated to occur during the operation phase of this program element. Therefore, there would be no impacts.

San Jose Creek Water Reclamation Plant – Plant Expansion

Construction

The CMP impact methodology described in Section 18.4.1 includes a minimum threshold for CMP impact analysis of 150 or more one-way peak hour trips at a mainline freeway monitoring station or 50 or more peak hour trips at a CMP arterial monitoring intersection. It is anticipated that the amount of construction-related one-way peak hour trips would be less than the minimum threshold. In addition, construction-related trips would be, by their nature, of limited duration. Based on these considerations, construction-related traffic impacts would be less than significant.

Operation

No additional trips are anticipated to occur during the operation phase of this program element. Therefore, there would be no impacts.

San Jose Creek Water Reclamation Plant, Pomona Water Reclamation Plant, Los Coyotes Water Reclamation Plant, and Long Beach Water Reclamation Plant – Process Optimization

Construction

The CMP impact methodology described in Section 18.4.1 includes a minimum threshold for CMP impact analysis of 150 or more one-way peak hour trips at a mainline freeway monitoring station or 50 or more peak hour trips at a CMP arterial monitoring intersection. It is anticipated that the amount of construction-related one-way peak hour trips would be less than the minimum threshold. In addition, construction-related trips would be, by their nature, of limited duration. Based on these considerations, construction-related traffic impacts would be less than significant.

Operation

No additional trips are anticipated to occur during the operation phase of this program element. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Solids Processing

Construction

The CMP impact methodology described in Section 18.4.1 includes a minimum threshold for CMP impact analysis of 150 or more one-way peak hour trips at a mainline freeway monitoring station or 50 or more peak hour trips at a CMP arterial monitoring intersection. It is anticipated that the amount of construction-related one-way peak hour trips would be less than the minimum threshold. In addition, construction-related trips would be, by their nature, of limited duration. Based on these considerations, construction-related traffic impacts would be less than significant.

Operation

No additional trips are anticipated to occur during the operation phase of this program element. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Biosolids Management

Operation

The CMP impact methodology described in Section 18.4.1 includes a minimum threshold for CMP impact analysis of 150 or more one-way peak hour trips at a mainline freeway monitoring station or 50 or more peak hour trips at a CMP arterial monitoring intersection. The projected increase in truck trips associated with this program element would be between two to three inbound and two to three outbound trips in the AM peak hour. Therefore, this impact would be less than significant.

CEQA Impact Determination

Construction and operation of Alternative 1 (Program) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact TRT-4. Would Alternative 1 (Program) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Conveyance System – Conveyance Improvements

Construction

During the construction period, conveyance improvements would be constructed employing jacking/tunneling or open-trench methods, or a combination of the two. If the conveyance improvements were constructed using the jacking/tunneling method, temporary localized adverse impacts could occur in the vicinity of jacking/tunnel-access pits. If conveyance improvements were constructed using open-trench methods, the same types of adverse impacts would be expected, but their geographic extent would be larger, i.e., they would extend along the entire area of open-trench construction in streets and public rights-of-way. Effects could involve the temporary closure of travel and/or parking lanes, temporary closure of bicycle lanes and sidewalks, temporary relocation of bus stops, and limitations on local access. Because the precise location of the planned conveyance improvements and the appropriate construction techniques are not known at this time, the specific location of these potential effects cannot be determined. However, with the Sanitation Districts implementing the standard practices and bid requirements used on all conveyance system construction projects, construction-related traffic impacts would be less than significant.

Operation

Because the conveyance system is located underground, there would be no impacts.

San Jose Creek Water Reclamation Plant – Plant Expansion

Construction

Because all construction activities would be located on site at the SJCWRP, no changes to the existing roadway network or any public right-of-way would occur. Therefore, there would be no impacts.

Operation

Because all operation and maintenance activities would be located on site at the SJCWRP, no changes to the existing roadway network or any public right-of-way would occur. Therefore, there would be no impacts.

San Jose Creek Water Reclamation Plant, Pomona Water Reclamation Plant, Los Coyotes Water Reclamation Plant, and Long Beach Water Reclamation Plant – Process Optimization

Construction

Because all activities in the construction phase of this program element would be located on site at each WRP, no changes to the existing roadway network or any public right-of-way would occur. Therefore, there would be no impacts.

Operation

Because all activities in the operation phase of this program element would be located on site at each WRP, no changes to the existing roadway network or any public right-of-way would occur. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Solids Processing

Construction

Because all activities in the construction phase of this program element would be located on site at the JWPCP, no changes to the existing roadway network or any public right-of-way would occur. Therefore, there would be no impacts.

Operation

Because all activities in the operation phase of this program element would be located on site at the JWPCP, no changes to the existing roadway network or any public right-of-way would occur. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Biosolids Management

Operation

No new hazards due to design features would be created by the new biosolids truck trips because trucks would use existing roadways to travel between the JWPCP and the receiving facilities. Therefore, there would be no impacts.

CEQA Impact Determination

Construction and operation of Alternative 1 (Program) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Impacts would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact TRT-5. Would Alternative 1 (Program) result in inadequate emergency access?

Conveyance System – Conveyance Improvements

Construction

During the construction period, conveyance improvements would be constructed employing jacking/tunneling or open-trench methods, or a combination of the two. If the conveyance improvements were constructed using the jacking/tunneling method, temporary localized adverse impacts could occur in the vicinity of jacking/tunnel-access pits. If conveyance improvements were constructed using

open-trench methods, the same types of adverse impacts would be expected, but their geographic extent would be larger, i.e., they would extend along the entire area of open-trench construction in streets and public rights-of-way. Effects could involve the temporary closure of travel and/or parking lanes, temporary closure of bicycle lanes and sidewalks, temporary relocation of bus stops, and limitations on local access. Because the precise location of the planned conveyance improvements and the appropriate construction techniques are not known at this time, the specific location of these potential effects cannot be determined. However, with the Sanitation Districts implementing the standard practices and bid requirements used on all conveyance system construction projects, including giving advance notice to emergency service provides for any lane closures, detours, construction hours, or changes to local access, construction-related traffic impacts would be less than significant.

Operation

Because all activities in the operation phase of this program element would be located underground, emergency access would not be affected. Therefore, there would be no impacts.

San Jose Creek Water Reclamation Plant – Plant Expansion

Construction

Because all activities in the construction phase of this program element would be located on site at the SJCWRP, emergency access would not be affected. Therefore, there would be no impacts.

Operation

Because all activities in the operation phase of this program element would be located on site at the SJCWRP, emergency access would not be affected. Therefore, there would be no impact.

San Jose Creek Water Reclamation Plant, Pomona Water Reclamation Plant, Los Coyotes Water Reclamation Plant, and Long Beach Water Reclamation Plant – Process Optimization

Construction

Because all activities in the construction phase for these program elements would be located on site at each WRP, emergency access would not be affected. Therefore, there would be no impacts.

Operation

Because all activities in the operation phase for these program elements would be located on site at each WRP, emergency access would not be affected. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Solids Processing

Construction

Because all activities in the construction phase of this program element would be located on site at the JWPCP, emergency access would not be affected. Therefore, there would be no impacts.

Operation

Because all activities in the operation phase of this program element would be located on site at the JWPCP, emergency access would not be affected. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Biosolids Management

Operation

Inadequate emergency access would not be created by the new biosolids truck trips because trucks would use existing roadways to travel between the JWPCP and the receiving facilities. Therefore, there would be no impacts.

CEQA Impact Determination

Construction and operation of Alternative 1 (Program) would not result in inadequate emergency access. Impacts would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact TRT-6. Would Alternative 1 (Program) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?

Conveyance System – Conveyance Improvements

Construction

During the construction period, conveyance improvements would be constructed employing jacking/tunneling or open-trench methods, or a combination of the two. If the conveyance improvements were constructed using the jacking/tunneling method, temporary localized adverse impacts could occur in the vicinity of jacking/tunnel-access pits. If conveyance improvements were constructed using open-trench methods, the same types of adverse impacts would be expected, but their geographic extent would be larger, i.e., they would extend along the entire area of open-trench construction in streets and public rights-of-way. Effects could involve the temporary closure of travel and/or parking lanes, temporary closure of bicycle lanes and sidewalks, temporary relocation of bus stops, and limitations on local access. Because the precise location of the planned conveyance improvements and the appropriate construction techniques are not known at this time, the specific location of these potential effects cannot be determined. Where these effects would occur, increased safety risks for vehicles, bicyclists, and pedestrians could result from construction activities within or adjacent to streets. However, with the Sanitation Districts implementing the standard practices and bid requirements used on all conveyance system construction projects, construction-related traffic impacts would be less than significant.

Operation

Because all activities in the operation phase of this program element would be located underground, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

San Jose Creek Water Reclamation Plant – Plant Expansion

Construction

Because all activities in the construction phase of this program element would be located on site at the SJCWRP, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

Operation

Because all activities in the operation phase of this program element would be located on site at the SJCWRP, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

San Jose Creek Water Reclamation Plant, Pomona Water Reclamation Plant, Los Coyotes Water Reclamation Plant, and Long Beach Water Reclamation Plant – Process Optimization

Construction

Because all activities in the construction phase for these program elements would be located on site at each WRP, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

Operation

Because all activities in the operation phase for these elements would be located on site for each WRP, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Solids Processing

Construction

Because all activities in the construction phase of this program element would be located on site at the JWPCP, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

Operation

Because all activities in the operation phase of this program element would be located on site at the JWPCP, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

Joint Water Pollution Control Plant – Biosolids Management

Operation

No new impacts on public transit, bikeways, or pedestrian facilities would be created by the new biosolids trucks using existing roadways to travel between the JWPCP and the receiving facilities. Therefore, there would be no impacts.

CEQA Impact Determination

Construction and operation of Alternative 1 (Program) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decrease the performance of safety of such facilities. Impacts would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

18.4.3.2 Project

Impact TRT-1. Would Alternative 1 (Project) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore)

Construction

CEQA Analysis

All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis

All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Wilmington to San Pedro Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Site – JWPCP East

Construction

CEQA Analysis
Assumptions made to determine future 2017 baseline conditions for this shaft site are summarized in Section 18.4.1. The location of the study intersections for Alternative 1 (Project) are shown on Figure 18-7, and LOS calculations for study intersections surrounding this shaft site are presented in Table 18-10. As indicated in the table, six of the nine study intersections surrounding the JWPCP East shaft site are projected to operate at LOS D or better during the AM and PM peak hours under 2017 baseline conditions. The exceptions are Sepulveda Boulevard/Vermont Avenue (AM and PM peak hours), Lomita Boulevard/Vermont Avenue (AM peak hour), and Pacific Coast Highway/Figueroa Street (AM peak hour), which are shown on Figure 18-7 as intersections 1, 6, and 9.

During the various construction phases, hauling of supplies and disposal of excavated soil by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. The construction-related traffic impact analysis was based on the most intense period (worst-case scenario) of construction between 2014 and 2021. Peak construction activity would occur during the first quarter of 2017. During construction of this shaft site, which would last approximately 10 to 12 months, 20 worker and 260 PCE truck trips (10 inbound worker, 10 outbound

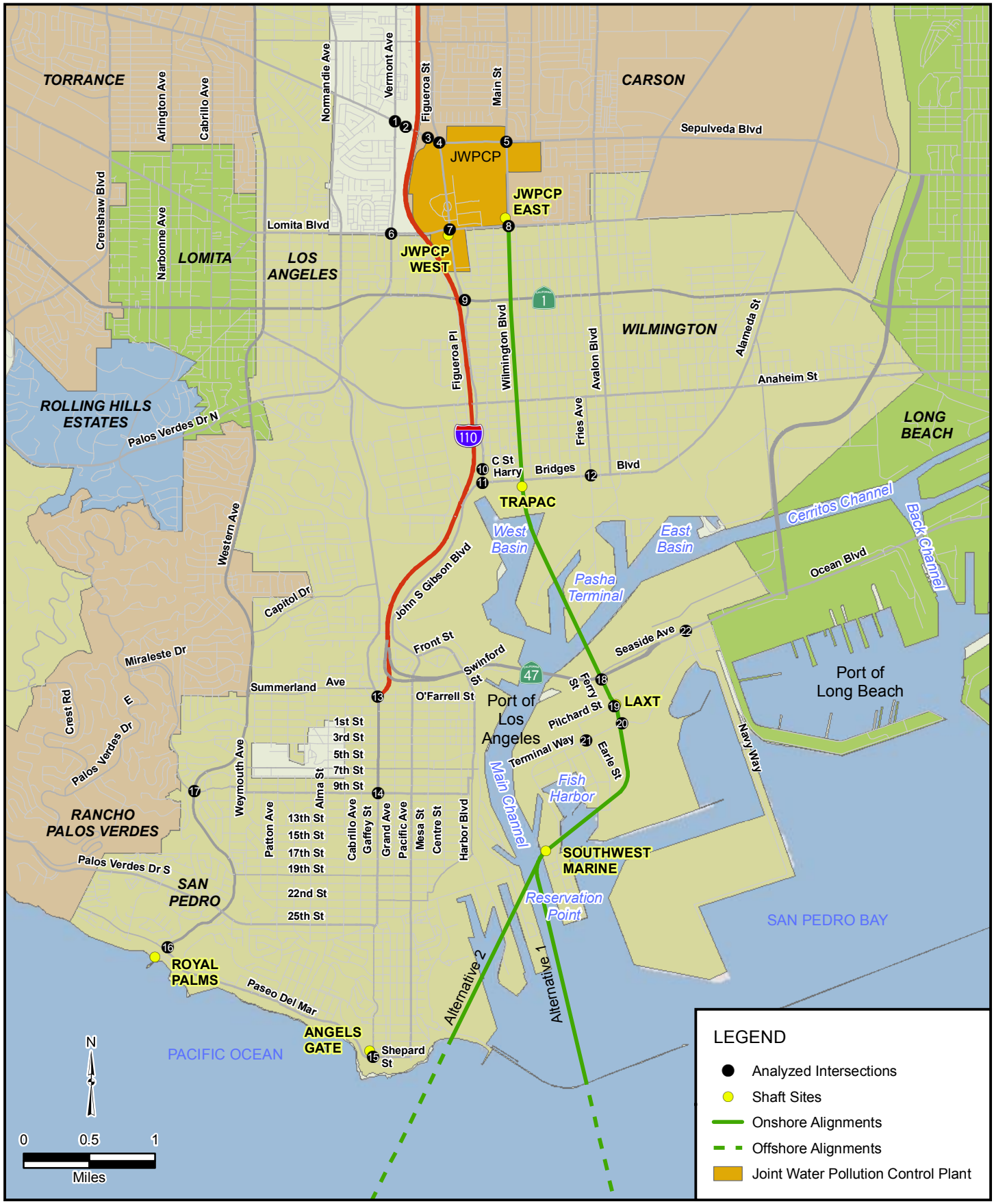


FIGURE 18-7

Analyzed Intersections Alternatives 1 and 2 (Project)

CLEARWATER Program

Source: Sanitation Districts of Los Angeles County 2011, Fehr & Peers 2010, Thomas Bros. 2011, ESRI 2011

worker, 130 inbound PCE truck, 130 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 26 peak hour PCE truck trips (10 inbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the AM peak hour, and 10 PM outbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the PM peak hour). During onshore tunnel construction, which would last approximately 24 months, 240 worker and 444 PCE truck trips (120 inbound worker, 120 outbound worker, 222 inbound PCE truck, 222 outbound PCE truck) are estimated per day, including 80 worker and 44 PCE truck trips (40 inbound worker, 40 outbound worker, 20 inbound PCE truck, 24 outbound PCE truck) during the AM and PM peak hours. During decommissioning of this shaft site, which would last approximately 2 to 5 months, 20 worker and 40 PCE truck trips (10 inbound worker, 10 outbound worker, 20 inbound PCE truck, 20 outbound PCE truck) are estimated per day, including 10 peak hour worker and 4 peak hour PCE truck trips (10 inbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the AM peak hour, and 10 PM outbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the PM peak hour). Trip generation used for this analysis is summarized in Table 18-12 through Table 18-15.

Table 18-12. Alternatives 1 and 2 (Project) Construction Truck PCE Trip Generation Estimates by Location and Phase Assuming Maximum Truck Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
JWPCP East Shaft								
Shaft Construction	10–12	260[a]	12	14	26	12	14	26
Onshore Tunneling	24[b]	444[c]	20	24	44	20	24	44
Shaft Covering and Site Restoration	2–5	40	2	2	4	2	2	4
TraPac Shaft								
Shaft Construction	10–11	260[d]	12	14	26	12	14	26
Shaft Site Use	15	8[e]	2	2	4	2	2	4
Shaft Covering and Site Restoration	3	120[f]	6	6	12	6	6	12
LAXT Shaft								
Shaft Construction	12–15	260[g]	12	14	26	12	14	26
Onshore Tunneling	24[b]	444[c]	20	24	44	20	24	44
Offshore Tunneling	78[h]	564[i]	28	30	58	28	30	58
Shaft Covering and Site Restoration	2–5	40	2	2	4	2	2	4
Southwest Marine Shaft								
Shaft Construction	10–11	260[d]	12	14	26	12	14	26
Shaft Site Use	38–60	8[e]	2	2	4	2	2	4
Shaft Covering and Site Restoration	3	120[f]	6	6	12	6	6	12
Riser and Diffuser Construction[j]	36	32	2	2	4	2	2	4
Existing Ocean Outfalls Rehabilitation	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PCE factor of 2.0 has been applied to these truck trips for traffic impact analysis.

[a] Estimated 65 truck round trips (130 total one-way) per day during shaft construction, which would last for 10 to 12 months.

[b] Assumed onshore tunneling rate of 10,700 feet at 35 feet per day and 30 working days per month.

[c] Number of truck trips for maximum production during onshore tunneling (up to 95 round trips for excavated material disposal and 16 round-trip deliveries; average activity is estimated to be 48 round trips for excavated material disposal and 9 round-trip deliveries).

[d] Estimated 65 truck round trips (130 total one-way) per day during shaft construction, which would last for 10 to 11 months.

[e] Estimated 2 truck round trips (4 total one-way) per day during tunnel construction, which would last for approximately 12 months.

[f] Number of truck trips for most intensive site restoration. Actual range of truck trips varies between 10 and 30 trips.

[g] Estimated 65 truck round trips (130 total one-way) per day during shaft construction, which would last for 12 to 15 months.

Table 18-12 (Continued)

Site and Phase	Duration (Months)	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total

[h] Assumed offshore tunneling rate of up to 65,200 feet at 40 feet per day and 30 working days per month to the SP Shelf. To the PV Shelf, the offshore pipeline length is 38,100 feet.

[i] Number of truck trips for maximum production during offshore tunneling (up to 123 round trips for excavated material disposal and 18 round-trip deliveries; average activity is estimated to be 62 round trips for excavated material disposal and 10 round-trip deliveries).

[j] Estimates for construction phase only. It is assumed that activity during pre-assembly and demobilization phases would be of similar intensity.

Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.

Table 18-13. Alternatives 1 and 2 (Project) Construction Worker Trip Generation Estimates by Location and Phase Assuming Maximum Worker Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
JWPCP East Shaft								
Shaft Construction	10–12	20[a]	10	0	10	0	10	10
Onshore Tunneling	24[b]	240[c]	40	40	80	40	40	80
Shaft Covering and Site Restoration	2–5	20[d]	10	0	10	0	10	10
TraPac Shaft								
Shaft Construction	10–11	20[a]	10	0	10	0	10	10
Shaft Site Use	15	80[e]	40	0	40	0	40	40
Shaft Covering and Site Restoration	3	20[d]	10	0	10	0	10	10
LAXT Shaft								
Shaft Construction	12–15	20[a]	10	0	10	0	10	10
Onshore Tunneling	24[b]	240[c]	40	40	80	40	40	80
Offshore Tunneling	78[f]	240[c]	40	40	80	40	40	80
Shaft Covering and Site Restoration	2–5	20[d]	10	0	10	0	10	10
Southwest Marine Shaft								
Shaft Construction	10–11	20[a]	10	0	10	0	10	10
Shaft Site Use	38–60	80[e]	40	0	40	0	40	40
Shaft Covering and Site Restoration	3	20[d]	10	0	10	0	10	10
Riser and Diffuser Construction[i]	36	30[g]	15	0	15	0	15	15
Existing Ocean Outfalls Rehabilitation	9	20[h]	10	0	10	0	10	10

[a] Assumed a 10-hour work shift, 5 days per week. Approximately 10 workers would be needed to construct each shaft.

[b] Assumed onshore tunneling rate of 10,700 feet at 35 feet per day and 30 working days per month.

[c] 35–40 workers needed during tunnel construction, with shift changes occurring in the peak hour. A maximum assumption of 40 workers was used for 3- to 8-hour shifts.

[d] Assumed a 10-hour work shift, 5 days per week. Approximately 10 workers would be needed to decommission each shaft.

[e] Assumed a 10-hour work shift, 5 days per week. Approximately 35–40 workers would be needed for tunnel construction at access shafts.

[f] Assumed offshore tunneling rate of up to 65,200 feet at 40 feet per day and 30 working days per month to the SP Shelf. To the PV Shelf, the offshore pipeline length is 38,100 feet.

[g] Assumed a 10-hour work shift, 5 days per week. Approximately 15 workers would be needed to construct the riser and diffuser.

[h] Assumed a 10-hour work shift, 5 days per week. Approximately 8–10 workers would be needed for existing ocean outfalls rehabilitation.

[i] Estimates for construction phase only. It is assumed that activity during pre-assembly and demobilization phases would be of similar intensity.

Table 18-13 (Continued)

Site and Phase	Duration (Months)	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.								

Table 18-14. Alternatives 1 and 2 (Project) Total PCE Construction Trip Generation Estimates by Location and Phase Assuming Maximum Truck and Worker Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total
JWPCP East Shaft								
Shaft Construction	10–12	280	22	14	36	12	24	36
Onshore Tunneling	24[a]	684	60	64	124	60	64	124
Shaft Covering and Site Restoration	2–5	60	12	2	14	2	12	14
TraPac Shaft								
Shaft Construction	10–11	280	22	14	36	12	24	36
Shaft Site Use	15	88	42	2	44	2	42	44
Shaft Covering and Site Restoration	3	140	16	6	22	6	16	22
LAXT Shaft								
Shaft Construction	12–15	280	22	14	36	12	24	36
Onshore Tunneling	24[a]	684	60	64	124	60	64	124
Offshore Tunneling	78[b]	804	68	70	138	68	70	138
Shaft Covering and Site Restoration	2–5	60	12	2	14	2	12	14
Southwest Marine Shaft								
Shaft Construction	10–11	280	22	14	36	12	24	36
Shaft Site Use	38–60	88	42	2	44	2	42	44
Shaft Covering and Site Restoration	3	140	16	6	22	6	16	22
Riser and Diffuser Construction[c]	36	62	17	2	19	2	17	19
Existing Ocean Outfalls Rehabilitation	9	20	10	0	10	0	10	10

PCE factor of 2.0 has been applied to these truck trips for traffic impact analysis.

[a] Assumed onshore tunneling rate of 10,700 feet at 35 feet per day and 30 working days per month.

[b] 35–40 workers needed during tunnel construction, with shift changes occurring in the peak hour. A maximum assumption of 40 workers was used for 3- to 8-hour shifts.

[c] Estimates for construction phase only. It is assumed that activity during pre-assembly and demobilization phases would be of similar intensity.

Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.

Table 18-15. Alternatives 1 and 2 (Project) Total PCE Peak Hour Construction Trip Generation per Phase per Quarter Assuming Maximum Truck and Worker Trips

	2015				2016				2017				2018				2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Submittals and TBM Fabrication																																
JWPCP East Shaft Construction	36	36	36	36																												
Site Preparation/Assemble TBM 1																																
Tunneling (TBM 1 Onshore)[a]						124	124	124	124	124	124	124	124	124																		
TraPac Shaft Construction						36	36	36	36																							
TraPac Shaft Use										44	44	44	44	44																		
LAXT Shaft Construction	36	36	36	36	36																											
Site Preparation/Assemble TBM 2																																
Tunneling (TBM 2 Onshore)[a]							124	124	124	124	124	124	124	124																		
Tunneling (TBM 2 Offshore)							138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138	138
Southwest Marine Shaft Construction			36	36	36	36																										
Southwest Marine Shaft Use							44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44	44
SP Shelf Riser Construction																				19	19	19	19	19	19	19	19	19				
SP Shelf Diffuser Construction																													19	19	19	19
Existing Ocean Outfalls Rehabilitation																													10	10	10	
Demobilization																																
Total Trips per Quarter Alternative 1	72	72	108	108	72	72	342	342	342	350	350	350	**350**	**350**	182	182	182	182	182	201	201	201	201	201	201	201	63	73	73	73	63	44
Total Trips per Quarter Alternative 2	72	72	108	108	72	72	342	342	342	350	350	350	**350**	**350**	182	182	182	182	182	201	201	201	201	201	201	201	201	211	211	211	201	182

Offshore tunnel construction for Alternative 1 (Project) would last approximately 18 months longer than offshore tunnel construction for Alternative 2 (Project). This table reflects the longer offshore tunnel construction for Alternative 1 (Project).

[a] The onshore segment of this tunnel alignment would be constructed from either JWPCP East or LAXT, but not both. In order to assess a maximum localized potential impact that could occur under Alternatives 1 and 2 (Project), the intersection LOS analysis assumed the use of three tunnel boring machines (TBMs). The totals shown in this summary table, however, reflect the use of two TBMs.

Construction worker trips for this shaft site were distributed onto the surrounding street network based on the general distribution described in Section 18.4.1. Truck trips were assumed to travel on Figueroa Street and Sepulveda Boulevard to access I-110. The maximum estimated peak hour trips at the study intersections to and from this shaft site during construction is shown on Figure 18-8. The total projected peak hour traffic volumes at the study intersections are shown on Figure 18-9. Future 2017 LOS conditions during the construction period and an assessment of potential temporary adverse impacts are presented in Table 18-16.

Table 18-16. Alternatives 1 and 2 (Project) Future (2017) Intersection Level of Service Analysis and Impact Determination

			Cumulative Baseline 2017		Cumulative Plus Alternatives 1 and 2 (Project) 2017			
Intersection		Peak Hour	V/C or Delay	LOS	V/C or Delay	LOS	Project Increase in V/C	Adverse Project Impact
Study Intersections in the Vicinity of the JWPCP East Shaft Site								
1	Vermont Avenue	AM	0.980	E	0.980	E	0.000	No
	Sepulveda Boulevard	PM	0.969	E	0.969	E	0.000	No
2	SB I-110 Off-Ramp	AM	0.899	D	0.899	D	0.000	No
	Sepulveda Boulevard	PM	0.855	D	0.856	D	0.001	No
3	NB I-110 Off-Ramp	AM	0.739	C	0.749	C	0.010	No
	Sepulveda Boulevard	PM	0.728	C	0.738	C	0.010	No
4	Figueroa Street	AM	0.739	C	0.770	C	0.031	No
	Sepulveda Boulevard	PM	0.759	C	0.761	C	0.002	No
5	Main Street	AM	0.710	C	0.712	C	0.002	No
	Sepulveda Boulevard	PM	0.811	D	0.812	D	0.001	No
6	Vermont Avenue	AM	1.019	F	1.020	F	0.001	No
	Lomita Boulevard	PM	0.847	D	0.848	D	0.001	No
7	Figueroa Street	AM	0.779	C	0.782	C	0.003	No
	Lomita Boulevard	PM	0.716	C	0.721	C	0.005	No
8	Main Street/ Wilmington Boulevard	AM	0.560	A	0.561	A	0.001	No
	Lomita Boulevard	PM	0.553	A	0.554	A	0.001	No
9	Figueroa Street	AM	0.945	E	0.952	E	0.007	No
	Pacific Coast Highway[a]	PM	0.875	D	0.879	D	0.004	No
Study Intersections in the Vicinity of the TraPac Shaft Site								
10	Figueroa Street	AM	0.497	A	0.503	A	0.006	No
	I-110 Ramps/C Street[a b c]	PM	0.415	A	0.419	A	0.004	No
11	Figueroa Street/TraPac Gate	AM	Intersection will not exist in the future.		Intersection will not exist in the future.		N/A	N/A
	Harry Bridges Boulevard[d]	PM					N/A	N/A
12	Fries Avenue	AM	0.471	A	0.471	A	0.000	No
	Harry Bridges Boulevard[a]	PM	0.571	A	0.575	A	0.004	No

Table 18-16 (Continued)

Intersection		Peak Hour	Cumulative Baseline 2017 V/C or Delay	Cumulative Baseline 2017 LOS	Cumulative Plus Alternatives 1 and 2 (Project) 2017 V/C or Delay	Cumulative Plus Alternatives 1 and 2 (Project) 2017 LOS	Project Increase in V/C	Adverse Project Impact
Study Intersections in the Vicinity of the LAXT and Southwest Marine Shaft Sites								
18	Ferry Street	AM	0.324	A	0.362	A	0.038	No
	SR-47 EB On/Off-Ramps[a]	PM	0.451	A	0.502	A	0.051	No
19	Ferry Street	AM	0.299	A	0.307	A	0.008	No
	Pilchard Street[a]	PM	0.347	A	0.364	A	0.017	No
20	Ferry Street	AM	0.571	A	0.599	A	0.028	No
	Terminal Way[a]	PM	0.307	A	0.316	A	0.009	No
21	Earle Street	AM	0.213	A	0.213	A	0.000	No
	Terminal Way[a]	PM	0.365	A	0.379	A	0.014	No
22	Navy Way	AM	0.623	B	0.633	B	0.010	No
	Ocean Boulevard/ Seaside Avenue[a]	PM	0.814	D	0.825	D	0.011	No

[a] Intersection is assumed to be operating under ATSAC and ATCS system in the future. Per LADOT guidelines, a 10 percent capacity credit has been taken at intersections operating with ATSAC/ATCS systems.

[b] Intersection is a four-way stop-controlled intersection. LOS is based on 2000 HCM four-way stop method. Average delay of the intersection is reported.

[c] Intersection would be reconfigured in the future per the conceptual plan for Harry Bridges Boulevard realignment.

[d] Intersection was analyzed under existing conditions only. In the future, intersection would no longer exist per the conceptual plan for Harry Bridges Boulevard realignment.

[e] Intersection is a one-way stop-controlled intersection. LOS is based on 2000 HCM unsignalized method. Worst approach delay of the intersection is reported.

Based on this analysis, the additional construction-related traffic associated with the JWPCP East shaft site would not significantly affect the nine study intersections in its vicinity. Therefore, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

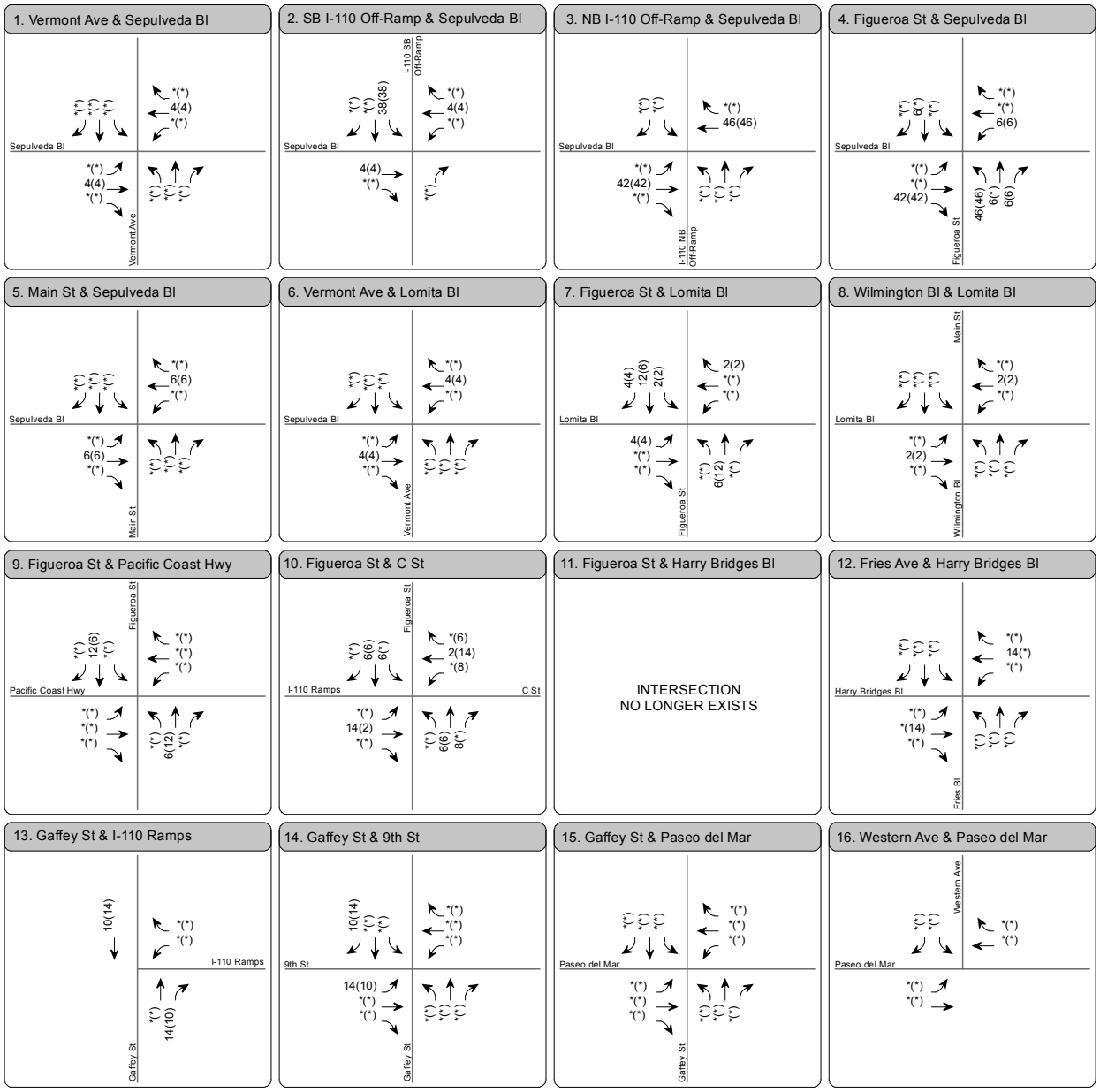
Operation

CEQA Analysis

Once the tunnel construction is complete, the shaft would be capped with a removable cover for future access to support operations and maintenance of the tunnel. In the operational phase of this project element, the JWPCP East shaft site would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. At this level of activity, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.



LEGEND

A M(PM) Peak Hour Traffic Volume

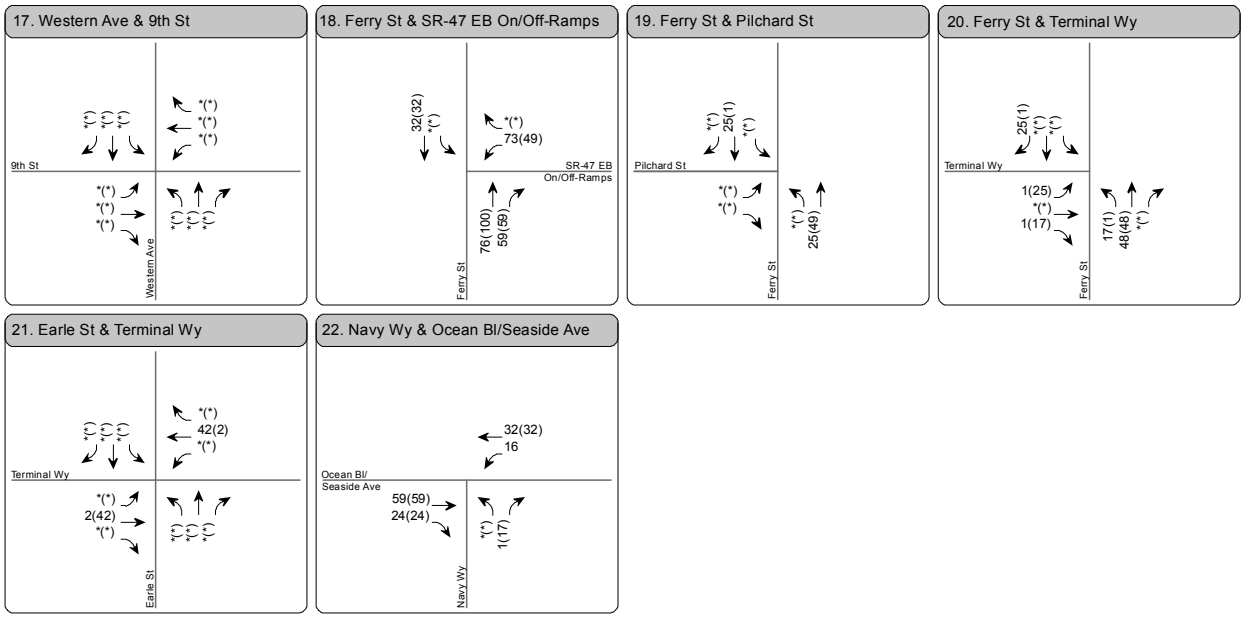
* No Traffic Data

FIGURE 18-8

CLEARWATER Program

Alternatives 1 and 2 (Project) Only (2017) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010



LEGEND

A M(PM) Peak Hour Traffic Volume

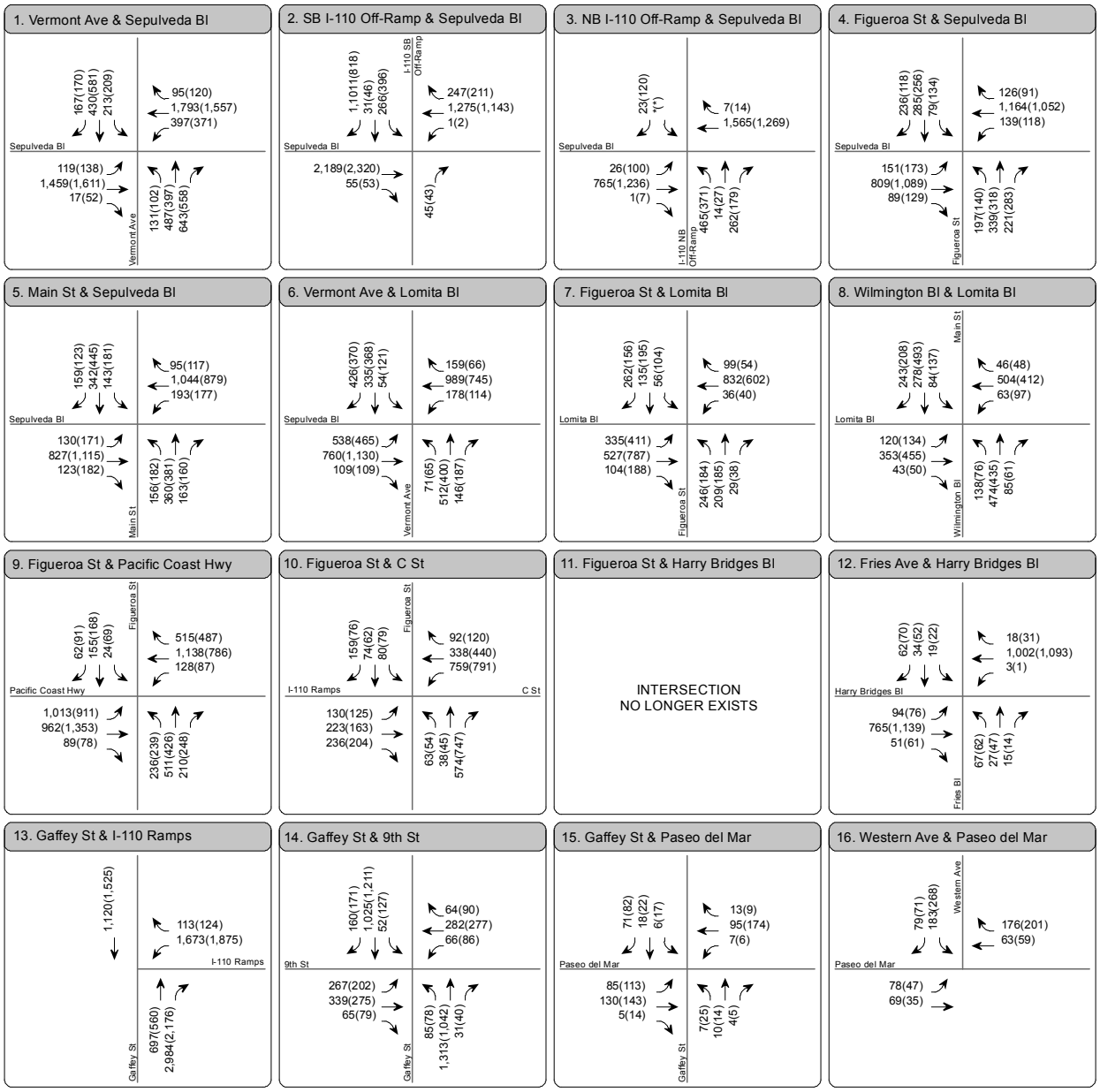
* No Traffic Data

FIGURE 18-8 (continued)

CLEARWATER Program

Alternatives 1 and 2 (Project) Only (2017) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010



LEGEND

A M(PM) Peak Hour Traffic Volume

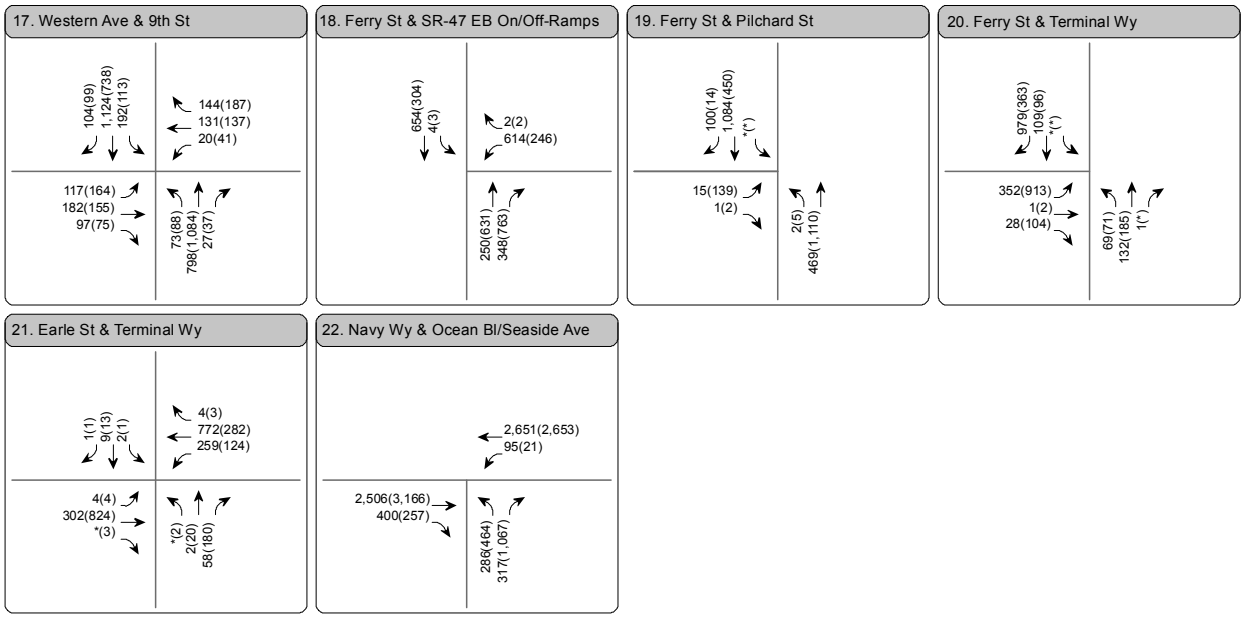
* No Traffic Data

FIGURE 18-9

CLEARWATER Program

Cumulative Base Plus Alternatives 1 and 2 (Project) Only (2017) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010



LEGEND

A M(PM) Peak Hour Traffic Volume

* No Traffic Data

FIGURE 18-9 (continued)

CLEARWATER Program

Cumulative Base Plus Alternatives 1 and 2 (Project) Only (2017) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010

Shaft Site – TraPac

Construction

CEQA Analysis

Assumptions made to determine future 2017 baseline conditions for this shaft site are summarized in Section 18.4.1. The location of the study intersections for Alternative 1 (Project) are shown on Figure 18-7, and LOS calculations for study intersections surrounding this shaft site are presented in Table 18-10. As indicated in the table, the two study intersections in the vicinity of the TraPac shaft site are projected to operate at LOS D or better during the AM and PM peak hours under the 2017 baseline conditions.

During the various construction phases, hauling of supplies and disposal of excavated soil by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. The construction-related traffic impact analysis was based on the most intense period (worst-case scenario) of construction between 2014 and 2021. Peak construction would occur during the first quarter of 2017. During construction of this shaft site, which would last approximately 10 to 11 months, 20 worker and 260 PCE truck trips (10 inbound worker, 10 outbound worker, 130 inbound PCE truck, 130 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 26 peak hour PCE truck trips (10 inbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the AM peak hour, and 10 outbound worker, 12 inbound PCE, and 14 outbound PCE truck in the PM peak hour). During tunnel construction, which would last approximately 15 months, 80 worker and 8 PCE truck trips (40 inbound worker, 40 outbound worker, 4 inbound PCE truck, 4 outbound PCE truck) are estimated per day, including 40 peak hour worker and 4 PCE peak hour truck trips (40 inbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the AM peak hour, and 40 outbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the PM peak hour). During decommissioning of this shaft site, which would last approximately 3 months, 20 worker and 120 PCE truck trips (10 inbound worker, 10 outbound worker, 60 inbound PCE truck, 60 outbound PCE truck) are estimated per day, including 10 worker and 12 PCE truck trips (10 inbound worker, 10 outbound worker, 6 inbound PCE truck, 6 outbound PCE truck) during the peak hours. Trip generation used for this analysis is summarized in Table 18-12 through Table 18-15.

Construction worker trips for this shaft site were distributed onto the surrounding street network based on the general distribution described in Section 18.4.1. Truck trips were assumed to travel on Harry Bridges Boulevard to access I-110. The maximum estimated peak hour trips at the study intersections to and from this shaft site during construction are shown on Figure 18-8. The total projected peak hour traffic volumes at the study intersections are shown on Figure 18-9. Future 2017 LOS conditions during the construction period and an assessment of potential temporary adverse impacts are presented in Table 18-16.

Based on this analysis, the construction-related traffic associated with the TraPac shaft site would not significantly impact the two study intersections in its vicinity. Therefore, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be indirect and temporary for onshore tunneling and direct and temporary for offshore tunneling. Refer to Table 18-12 through Table 18-15 for trips related to onshore and offshore tunneling.

Operation

CEQA Analysis

Once the tunnel construction is complete, the shaft would be capped with a removable cover for future access to support operations and maintenance of the tunnel. In the operational phase of this project element, the TraPac shaft site would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. At this level of activity, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Shaft Site – LAXT

Construction

CEQA Analysis

For the purposes of evaluating the greatest potential traffic impacts in the vicinity of the LAXT shaft site, it was analyzed as a shaft site that would be for tunnel boring work in two directions, one heading north toward the JWPCP East shaft site and the other heading south toward the Pacific Ocean. For a conservative approach, the number of trips analyzed is double that of what would occur if construction occurred at this site in only one direction with a single tunnel boring machine (TBM).

Assumptions made to determine future 2017 baseline conditions for this shaft site are summarized in Section 18.4.1. The location of the study intersections for Alternative 1 (Project) are shown on Figure 18-7, and LOS calculations for study intersections surrounding this shaft site are presented in Table 18-10. As indicated in the table, the five study intersections surrounding the LAXT shaft site are projected to operate at LOS D or better during the AM and PM peak hours under 2017 baseline conditions.

During the various construction phases, hauling of supplies and disposal of excavated soil by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. The construction-related traffic impact analysis was based on the most intense period (worst-case scenario) of construction between 2014 and 2021. Peak construction activity would occur during the first quarter of 2017. During construction of this shaft site, which would last approximately 12 to 15 months, 20 worker trips and 260 PCE truck trips (10 inbound worker, 10 outbound worker, 130 inbound PCE truck, 130 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 26 peak hour PCE truck trips (10 inbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the AM peak hour, and 10 outbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the PM peak hour). During onshore tunnel construction, which would last approximately 24 months, 240 worker and 444 PCE truck trips (120 inbound worker, 120 outbound worker, 222 inbound PCE truck, 222 outbound PCE truck) are estimated per day, including 80 peak hour worker trips and 44 peak hour PCE truck trips (40 inbound worker, 20 inbound PCE truck, and 24 outbound PCE trucks in the AM peak hour, and 40 outbound worker, 20 inbound PCE truck, and 24 outbound PCE truck in the PM peak hour). During offshore tunnel construction, which would last approximately 78 months, 240 worker and 564 PCE truck trips (120 inbound worker, 120 outbound worker, 282 inbound PCE truck, 282 outbound PCE truck) are estimated per day, including 80 peak hour worker trips and 58 peak hour PCE truck trips (40 inbound worker, 28 inbound PCE truck, and

30 outbound PCE truck in the AM peak hour, and 40 outbound worker, 28 inbound PCE truck, and 30 outbound PCE truck in the PM peak hour). During decommissioning of this shaft site, which would last approximately 2 to 5 months, 20 worker trips and 40 PCE truck trips (10 inbound worker, 10 outbound worker, 20 inbound PCE truck, 20 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 4 peak hour PCE truck trips (10 inbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the AM peak hour, and 10 outbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the PM peak hour) during the peak hours. Trip generation used for this analysis is summarized in Table 18-12 through Table 18-15.

Construction worker trips for this shaft site were distributed onto the surrounding street network based on the general distribution described in Section 18.4.1. Truck trips were assumed to travel on SR-47 to access I-110 and I-710. The maximum estimated peak hour trips at the study intersections to and from this shaft site during construction are shown on Figure 18-8. The total projected peak hour traffic volumes at the study intersections are shown on Figure 18-9. Future 2017 LOS conditions during the construction period and an assessment of potential temporary adverse impacts are presented in Table 18-16.

Based on this analysis, the construction-related traffic associated with the LAXT shaft site would not significantly impact the study intersections in its vicinity. Therefore, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be indirect and temporary for onshore tunneling and direct and temporary for offshore tunneling. Refer to Table 18-12 through Table 18-15 for trips related to onshore and offshore tunneling.

Operation

CEQA Analysis

Once the tunnel construction is complete, the shaft would be capped with a removable cover for future access to support operations and maintenance of the tunnel. In the operational phase of this project element, the LAXT shaft site would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. At this level of activity, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Shaft Site – Southwest Marine

Construction

CEQA Analysis

Assumptions made to determine future 2017 baseline conditions for this shaft site are summarized in Section 18.4.1. The location of the study intersections for Alternative 1 (Project) is shown on Figure 18-7, and LOS calculations for study intersections surrounding this shaft site are presented in

Table 18-10. As indicated in the table, the five study intersections surrounding the Southwest Marine shaft site are projected to operate at LOS D or better during the AM and PM peak hours under 2017 baseline conditions.

During the various construction phases, hauling of supplies and disposal of excavated soil by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. During construction of this shaft site, which would last approximately 10 to 11 months, 20 worker trips and 260 PCE truck trips (10 inbound worker, 10 outbound worker, 130 inbound PCE truck, 130 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 26 peak hour PCE truck trips (10 inbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the AM peak hour, and 10 outbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the PM peak hour). During offshore tunnel construction, which would last approximately 78 months, 80 worker trips and 8 PCE truck trips (40 inbound worker, 40 outbound worker, 4 inbound PCE truck, 4 outbound PCE truck) are estimated per day, including 40 worker and 4 PCE truck trips (40 inbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the AM peak hour, and 40 outbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the PM peak hour). During decommissioning of this shaft site, which would last approximately 3 months, 20 worker trips and 120 PCE truck trips (10 inbound worker, 10 outbound worker, 60 inbound PCE truck, 60 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 12 peak hour PCE truck trips (10 inbound worker, 6 inbound PCE truck, and 6 outbound PCE truck in the AM peak hour, and 10 outbound worker, 6 inbound PCE truck, and 6 outbound PCE truck in the PM peak hour). Trip generation used for this analysis is presented in Table 18-12 through Table 18-15. The intersection analysis presented for the LAXT shaft site includes trips associated with the Southwest Marine shaft site.

Based on this analysis, the additional construction-related traffic associated with the Southwest Marine shaft site would not significantly impact the study intersections in its vicinity. Therefore, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be indirect and temporary for onshore tunneling and direct and temporary for offshore tunneling. Refer to Table 18-12 through Table 18-15 for trips related to onshore and offshore tunneling.

Operation

CEQA Analysis

Once the tunnel construction is complete, the shaft would be capped with a removable cover for future access to support operations and maintenance of the tunnel. In the operational phase of this project element, the Southwest Marine shaft site would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. At this level of activity, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Riser/Diffuser Area – San Pedro Shelf

Construction

CEQA Analysis

During the various construction phases, hauling of supplies by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. During riser and diffuser assembly and construction, which would last approximately 36 months, 30 worker and 32 PCE truck trips (15 inbound worker, 15 outbound worker, 16 inbound PCE truck, 16 outbound PCE truck) are estimated per day, including 15 worker trips and 4 PCE truck trips (15 inbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the AM peak hour, and 15 outbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the PM peak hour). Trip generation for this project element is summarized in Table 18-12 through Table 18-15.

Given the temporary nature of the construction-generated traffic within the Port of Los Angeles, as well as the modest number of estimated trips, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis

In the operational phase, all operation and maintenance activities would occur in the Pacific Ocean. This project element would be expected to generate negligible vehicular traffic, limited to a few worker trips per month to and from a location within the Port of Los Angeles for normal inspections and maintenance. At this level of activity, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Existing Ocean Outfalls

Construction

CEQA Analysis

As discussed in Section 2.2.4.3, the existing ocean outfalls extend from the existing manifold structure at Royal Palms. Assumptions made to determine future 2017 baseline conditions for this shaft site are summarized Section 18.4.1. The location of the study intersections for Alternative 1 (Project) is shown on Figure 18-7, and LOS calculations for study intersections surrounding this area are presented in Table 18-10. As indicated in the table, the study intersections in the vicinity of the Port of Los Angeles are projected to operate at LOS D or better during the AM and PM peak hours under 2017 baseline conditions.

During the rehabilitation-related construction work, barges would be deployed from a location in the Port of Los Angeles hauling of supplies by truck and travel by construction workers and employees would

generate traffic over the surrounding regional and local transportation system. The traffic impact analysis was based on the most intense period (worst-case scenario) of rehabilitation between 2014 and 2021, which would occur during the first quarter of 2017. During existing ocean outfalls rehabilitation, which would last approximately 9 months and would occur well after the overall peak of construction activity for Alternative 1, 20 worker trips (10 inbound, 10 outbound) are estimated per day, and these trips are anticipated during the AM and PM peak hours. Truck trips would be nominal. Trip generation used for this analysis is summarized in Table 18-12 through Table 18-15.

Given the modest number of estimated trips, as well as the temporary nature of the construction-generated traffic within the Port of Los Angeles, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis

No additional traffic would be needed to operate and maintain the existing ocean outfalls once they have been rehabilitated. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 1 (Project) would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts under CEQA would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Construction and operation of Alternative 1 (Project) would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact TRT-2. Would Alternative 1 (Project) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Wilmington to San Pedro Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With

respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis

All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine

Construction

CEQA Analysis

There are six CMP arterial monitoring stations in the vicinity of the proposed shaft sites.

- Western Avenue/Pacific Coast Highway
- Figueroa Street/Pacific Coast Highway (study intersection 9)
- Alameda Street/Pacific Coast Highway
- Western Avenue/Toscanini Drive
- Gaffey Street/9th Street (study intersection 14)
- Western Avenue/9th Street (study intersection 17)

As shown on Figure 18-8, Alternative 1 (Project) would not add more than 50 peak hour trips to Figueroa Street/Pacific Coast Highway, Gaffey Street/9th Street, and Western Avenue/9th Street. Alternative 1 (Project) is not expected to add enough new traffic to exceed the arterial analysis criteria of 50 vehicle trips at the three locations that were not fully analyzed under Impact TRT-1. In addition, construction-related trips would be of limited duration. Based on these considerations, construction-related traffic impacts would be less than significant.

A regional analysis was conducted to quantify potential temporary impacts on the regional freeway system in the vicinity of Alternative 1 (Project), including segments of I-110 and the I-710. Three freeway locations were identified for analysis.

- Route 110, at post mile 2.77, at Wilmington (CMP freeway monitoring station)
- Route 110, at post mile 7.016, at Carson Street
- Route 710, at post mile 7.60, at Willow Street (CMP freeway monitoring station)

Existing freeway mainline traffic volumes were obtained from the 2008 Traffic Volumes on California State Highways (California Department of Transportation 2008) for the three selected mainline freeway locations. Peak hour volumes by direction were derived by applying directional and peak hour factors in 2008 Traffic Volumes on California State Highways, and freeway LOS was analyzed using the

demand-to-capacity (D/C) methodology. A growth rate of 0.65 percent per year was applied to these traffic volumes to estimate 2010 existing base conditions for these freeway segments. As discussed in Section 18.4.1, because the current CMP projects a slightly lower growth rate for the study area (0.51 percent per year), the analysis presented here is conservative in the assumption regarding ambient traffic growth. The D/C ratios were calculated for each freeway segment using a capacity value of 2,000 vehicles per hour per freeway mainline lane for freeway mixed-flow lanes. Freeway segment LOS was determined based on V/C ratios and the definitions shown in Table 18-17. The existing D/C ratios during the morning and afternoon peak hours at both the CMP freeway monitoring locations and other selected highway segments are shown in Table 18-18. The analysis indicates that the study segments along I-710 and I-110 at Carson Street currently operate at LOS F during the AM and PM peak hours.

Table 18-17. Freeway Segment Level of Service Definitions

Level of Service	Demand/Capacity Ratio	Flow Conditions
A	0.00–0.35	Highest quality of service. Free traffic flow, low volumes, and low densities. Little or no restriction on maneuverability or speed.
B	0.36–0.54	Stable traffic flow, speed becoming slightly restricted. Low restriction on maneuverability.
C	0.55–0.77	Stable traffic flow, but less freedom to select speed, change lanes, or pass. Density increasing.
D	0.78–0.93	Approaching unstable flow. Speeds tolerable but subject to sudden and considerable variation. Less maneuverability and driver comfort.
E	0.94–1.00	Unstable traffic flow with rapidly fluctuating speeds and flow rates. Short headways, low maneuverability, and low driver comfort.
F(0)	1.01–1.25	Forced traffic flow. Speed and flow may be greatly reduced with high densities.
F(1)	1.26–1.35	Forced traffic flow. Severe congested conditions prevail for more than 1 hour. Speed and flow may drop to zero with high densities.
F(2)	1.36–1.45	Forced traffic flow. Severe congested conditions prevail for more than 1 hour. Speed and flow may drop to zero with high densities.
F(3)	>1.45	Forced traffic flow. Severe congested conditions prevail for more than 1 hour. Speed and flow may drop to zero with high densities.

Source: Adapted from 2004 Congestion Management Program for Los Angeles County (Los Angeles County Metropolitan Transportation Authority 2004)

Table 18-18. Existing and Future Freeway Volumes and Levels of Service for Alternatives 1 and 2 (Project)

				Existing (2010)			Cumulative Base (2017)			Alternatives 1 and 2 Peak Hour Trips	Future (2017) Alternatives 1 and 2 (Project)				
Freeway Segments	**Direction**	**# of Lanes**	**Capacity**	**Peak Hour Volume[a]**	**D/C Ratio**	**LOS**	**Peak Hour Volume**	**D/C Ratio**	**LOS**		**Peak Hour Volume**	**D/C Ratio**	**LOS**	**Project-related D/C Change**	**Significant Impact**
AM Peak Hour															
Harbor Freeway (I-110)															
@ Wilmington, south of C Street – Mile 2.77[b]	NB	4	8,000	7,450	0.931	E	7,789	0.974	E	60	7,849	0.981	E	0.008	No
	SB	4	8,000	5,491	0.686	C	5,741	0.718	C	73	5,814	0.727	C	0.009	No
@ Carson Street – Mile 7.016	NB	4	8,000	9,150	1.144	F(0)	9,566	1.196	F(0)	62	9,628	1.204	F(0)	0.008	No
	SB	4	8,000	7,039	0.880	D	7,359	0.920	D	87	7,446	0.931	E	0.011	No
Long Beach Freeway (I-710)															
North of Junction Route 1 (PCH), Willow Street – Mile 7.60[b]	NB	3	6,000	6,128	1.021	F(0)	6,407	1.068	F(0)	60	6,467	1.078	F(0)	0.010	No
	SB	3	6,000	6,408	1.068	F(0)	6,700	1.117	F(0)	73	6,773	1.129	F(0)	0.012	No
PM Peak Hour															
Harbor Freeway (I-110)															
@ Wilmington, south of C Street – Mile 2.77[b]	NB	4	8,000	5,014	0.627	C	5,242	0.655	C	76	5,318	0.665	C	0.009	No
	SB	4	8,000	7,173	0.897	D	7,499	0.937	E	57	7,556	0.945	E	0.007	No
@ Carson Street – Mile 7.016	NB	4	8,000	6,369	0.796	D	6,659	0.832	D	90	6,749	0.844	D	0.011	No
	SB	4	8,000	8,687	1.086	F(0)	9,082	1.135	F(0)	59	9,141	1.143	F(0)	0.007	No
Long Beach Freeway (I-710)															
North of Junction Route 1 (PCH), Willow Street – Mile 7.60[b]	NB	3	6,000	5,807	0.968	E	6,071	1.012	F(0)	76	6,147	1.025	F(0)	0.013	No
	SB	3	6,000	4,372	0.729	C	4,571	0.762	C	57	4,628	0.771	D	0.009	No

[a] Caltrans Data – factored from 2008 to 2010 conditions

[b] The post miles of the count data are in close proximity to the two identified CMP freeway monitoring stations, including I-110 south of C Street (at post mile 2.77) and I-710 south of Willow Street (at post mile 7.887).

The methodology used to develop forecasts of future year 2017 freeway volumes with and without the addition of trips added by Alternative 1 (Project) is similar to that used for the analyzed intersections. The year 2017 cumulative base freeway traffic volumes were developed by factoring the baseline volumes by 0.65 percent per year to reflect cumulative growth. The year 2017 peak hour traffic volumes and projected D/C ratio for the analyzed freeway segments are presented in Table 18-18. The trip distribution patterns, described in Section 18.4.1, were used for this analysis to identify freeway locations at which the project would temporarily add considerable new trips.

The projected D/C ratios under 2017 cumulative plus Alternative 1 (Project) conditions and the incremental increase are presented in Table 18-18. The significant impact criteria established by the CMP provide that a project would generate significant regional freeway impacts if the projected LOS is LOS F and the increase in D/C ratio caused by the project traffic is equal to or more than 0.02. As shown, Alternative 1 (Project) would not have any significant impacts on the adjacent freeway segments during either the AM or PM peak hours.

The methodology described in CMP was used to estimate the number of additional transit trips that may occur during construction. This methodology states that transit trips may be approximately 3.5 percent of vehicle trips. Applying this estimate to the estimated construction worker trips, it is estimated that up to six new transit person trips (three inbound and three outbound) may occur near each of the construction sites. Each shaft site is served by at least one of the transit lines described in Section 18.4.1. At this level of increase, impacts on the regional transit system would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis

In the operational phase, the JWPCP East, TraPac, LAXT, and Southwest Marine shaft sites would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. Based on the CMP impact criteria summarized in Section 18.4.1, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Riser/Diffuser Area – San Pedro Shelf

Construction

CEQA Analysis

As stated in Section 18.2.3.3, the parts and materials for the riser and diffuser would be brought to the Pasha Terminal within the Port of Los Angeles. Based on the trip generation estimates presented in

Table 18-12 through Table 18-15, fewer than 50 peak hour trips would be generated. Therefore, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis

Because no additional traffic on the surrounding roadway network is anticipated during the operational phase of this project element, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Existing Ocean Outfalls

Construction

CEQA Analysis

As stated in Section 18.2.3.3, rehabilitation of the existing ocean outfalls would occur in the Pacific Ocean, with the boat departing from within the Port of Los Angeles. Based on the trip generation estimates presented in Table 18-12 through Table 18-15, fewer than 50 peak hour trips would be generated. Therefore, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis

No additional traffic would be needed to operate and maintain the existing ocean outfalls once they have been rehabilitated. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 1 (Project) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts under CEQA would be less than significant.

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

NEPA Impact Determination
Construction and operation of Alternative 1 (Project) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact TRT-4. Would Alternative 1 (Project) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Wilmington to San Pedro Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine

Construction

CEQA Analysis
Because all construction activities would be located on site, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would be located on site, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – San Pedro Shelf

Construction

CEQA Analysis

As stated in Section 18.2.3.3, the parts and materials for the riser and diffuser would be pre-assembled at the Pasha Terminal within the Port of Los Angeles. It is assumed that all construction activities would be located on the pre-assembly site and, therefore, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis

Because all operation and maintenance activities would occur in the Pacific Ocean, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Existing Ocean Outfalls

Construction

CEQA Analysis

Because all construction activities would occur in the Pacific Ocean with boats departing from within the Port of Los Angeles, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis

Because all operation and maintenance activities would occur in the Pacific Ocean, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 1 (Project) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). There would be no impacts under CEQA.

Mitigation

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Construction and operation of Alternative 1 (Project) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) before mitigation. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact TRT-5. Would Alternative 1 (Project) result in inadequate emergency access?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore)

Construction

CEQA Analysis

All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis

All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Wilmington to San Pedro Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine

Construction

CEQA Analysis
Because all construction activities would be located on site, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would be located on site, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – San Pedro Shelf

Construction

CEQA Analysis
As stated in Section 18.2.3.3, the parts and materials for the riser and diffuser would be pre-assembled at the Pasha Terminal within the Port of Los Angeles. It is assumed that all construction activities would be located on the pre-assembly site and, therefore, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would occur in the Pacific Ocean, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Existing Ocean Outfalls

Construction

CEQA Analysis
Because all construction activities would occur in the Pacific Ocean, with boats departing from within the Port of Los Angeles, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would occur in the Pacific Ocean, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 1 (Project) would not result in inadequate emergency access. There would be no impacts under CEQA.

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

NEPA Impact Determination

Construction and operation of Alternative 1 (Project) would not result in inadequate emergency access. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

Impact TRT-6. Would Alternative 1 (Project) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Wilmington to San Pedro Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine

Construction

CEQA Analysis
Because all construction activities would be located on site, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would be located on site, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – San Pedro Shelf

Construction

CEQA Analysis

As stated in Section 18.2.3.3, the parts and materials for the riser and diffuser would be pre-assembled at the Pasha Terminal within the Port of Los Angeles. It is assumed that all construction activities would be located on the pre-assembly site and, therefore, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis

Because all operation and maintenance activities would occur in the Pacific Ocean, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Existing Ocean Outfalls

Construction

CEQA Analysis

Because all construction activities would occur in the Pacific Ocean, with boats departing from within the Port of Los Angeles, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis

Because all operation and maintenance activities would occur in the Pacific Ocean, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 1 (Project) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities. There would be no impacts under CEQA.

Mitigation

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Construction and operation of Alternative 1 (Project) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation

No mitigation is required.

Residual Impacts

No impacts would occur.

18.4.3.3 Impact Summary – Alternative 1

Impacts on terrestrial transportation and traffic analyzed in this EIR/EIS for Alternative 1 are summarized in Table 18-19 and Table 18-20. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the tables.

Table 18-19. Impact Summary – Alternative 1 (Program)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Impact TRT-1. Would Alternative 1 (Program) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			
Conveyance System			
Conveyance Improvements	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
SJCWRP			
Plant Expansion	CEQA Significant Impact During Construction	MM TRT-1. Prepare and implement a construction traffic management plan. The plan will be submitted to the appropriate local agency for review and approval prior to the start of any construction work. This plan will include such elements as the project schedule, the designation of haul routes for construction-related trucks, the location of	CEQA Less Than Significant Impact During Construction

Table 18-19 (Continued)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
		access to the construction site, designated staging and parking areas for workers and equipment, any driveway turning movement restrictions, any temporary traffic control devices or flagmen, and any travel time restrictions for construction-related traffic to avoid peak travel periods on selected roadways.	
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Process Optimization	CEQA Significant Impact During Construction	MM TRT-1	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
POWRP			
Process Optimization	CEQA Significant Impact During Construction	MM TRT-1	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LCWRP			
Process Optimization	CEQA Significant Impact During Construction	MM TRT-1	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LBWRP			
Process Optimization	CEQA Significant Impact During Construction	MM TRT-1	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
JWPCP			
Solids Processing	CEQA Significant Impact During Construction	MM TRT-1	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Biosolids Management	CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
Impact TRT-2. Would Alternative 1 (Program) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?			
Conveyance System			
Conveyance Improvements	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation

Table 18-19 (Continued)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
SJCWRP			
Plant Expansion	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Process Optimization	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
POWRP			
Process Optimization	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LCWRP			
Process Optimization	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LBWRP			
Process Optimization	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
JWPCP			
Solids Processing	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Biosolids Management	CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
Impact TRT-4. Would Alternative 1 (Program) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			
Conveyance System			
Conveyance Improvements	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
SJCWRP			
Plant Expansion	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation

Table 18-19 (Continued)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
POWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LCWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LBWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
JWPCP			
Solids Processing	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Biosolids Management	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Impact TRT-5. Would Alternative 1 (Program) result in inadequate emergency access?			
Conveyance System			
Conveyance Improvements	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
SJCWRP			
Plant Expansion	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation

Table 18-19 (Continued)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
POWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LCWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LBWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
JWPCP			
Solids Processing	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Biosolids Management	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Impact TRT-6. Would Alternative 1 (Program) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?			
Conveyance System			
Conveyance Improvements	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
SJCWRP			
Plant Expansion	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
POWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation

Table 18-19 (Continued)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
LCWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
LBWRP			
Process Optimization	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
JWPCP			
Solids Processing	CEQA No Impact During Construction	No mitigation is required.	CEQA No Impact During Construction
	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation
Biosolids Management	CEQA No Impact During Operation	No mitigation is required.	CEQA No Impact During Operation

Table 18-20. Impact Summary – Alternative 1 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact TRT-1. Would Alternative 1 (Project) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				
Tunnel Alignment				
Wilmington to SP Shelf (Onshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to SP Shelf (Offshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
TraPac	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
LAXT	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Southwest Marine	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Riser/Diffuser Area				
SP Shelf	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-2. Would Alternative 1 (Project) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?				
Tunnel Alignment				
Wilmington to SP Shelf (Onshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to SP Shelf (Offshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
TraPac	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
LAXT	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Southwest Marine	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Riser/Diffuser Area				
SP Shelf	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact TRT-4. Would Alternative 1 (Project) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				
Tunnel Alignment				
Wilmington to SP Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to SP Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
TraPac	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
LAXT	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Southwest Marine	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Rise/Diffuser Area				
SP Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-5. Would Alternative 1 (Project) result in inadequate emergency access?				
Tunnel Alignment				
Wilmington to SP Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to SP Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
TraPac	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
LAXT	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Southwest Marine	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
SP Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-6. Would Alternative 1 (Project) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?				
Tunnel Alignment				
Wilmington to SP Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to SP Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
TraPac	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
LAXT	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation

Table 18-20 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Southwest Marine	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
SP Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

18.4.4 Alternative 2

18.4.4.1 Program

Alternative 2 (Program) is the same as Alternative 1 (Program).

18.4.4.2 Project

The impacts for the onshore tunnel; the JWPCP East, TraPac, LAXT, and Southwest Marine shaft sites; and the existing ocean outfalls for Alternative 2 (Project) would be the same as for Alternative 1 (Project).

Impact TRT-1. Would Alternative 2 (Project) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis

All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites for Alternative 1 (Project). Construction for the offshore tunnel of Alternative 2 (Project) would last approximately 60 months, which is 18 months less than would be required to construct the offshore tunnel of Alternative 1 (Project).

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis

All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis

During the various construction phases, hauling of supplies and disposal of excavated soil by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. During riser and diffuser assembly and construction, which would last approximately 36 months, 30 worker and 32 PCE truck trips (15 inbound worker, 15 outbound worker, 16 inbound PCE truck, 16 outbound PCE truck) are estimated per day, including 15 peak hour worker trips and 4 peak hour PCE truck trips (15 inbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the AM peak hour, and 15 outbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the PM peak hour). Trip generation for this element is summarized in Table 18-12 through Table 18-15.

Given the temporary nature of the construction-generated traffic within the Port of Los Angeles, as well as the modest number of estimated trips, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operations

CEQA Analysis

Because all operation and maintenance activities would occur in the Pacific Ocean, no additional traffic on the surrounding roadway network is anticipated. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 2 (Project) would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts under CEQA would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Construction and operation of Alternative 2 (Project) would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact TRT-2. Would Alternative 2 (Project) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). Therefore, construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis
As stated in Section 18.2.3.3, the parts and materials for the riser and diffuser would be pre-fabricated on land and would be brought to the Pasha Terminal within the Port of Los Angeles. Based on the trip generation estimates presented in Table 18-12 through Table 18-15, fewer than 50 peak hour trips would be generated. Therefore, impacts would be less than significant.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis
Because no additional traffic on the surrounding roadway network is anticipated during the operational phase of this element, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination
Construction and operation of Alternative 2 (Project) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts under CEQA would be less than significant.

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

NEPA Impact Determination
Construction and operation of Alternative 2 (Project) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact TRT-4. Would Alternative 2 (Project) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). Therefore, construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis
As stated in Section 18.2.3.3, the parts and materials for the riser and diffuser would be pre-assembled at the Pasha Terminal within the Port of Los Angeles. It is assumed that all construction activities would be located on the pre-assembly site and, therefore, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would occur in the Pacific Ocean, no changes to the existing roadway network or any public rights-of-way are anticipated. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination
Construction and operation of Alternative 2 (Project) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). There would be no impacts under CEQA.

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

NEPA Impact Determination

Construction and operation of Alternative 2 (Project) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

Impact TRT-5. Would Alternative 2 (Project) result in inadequate emergency access?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). Therefore, construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). Because all operation and maintenance activities would occur underground, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis
As stated in Section 18.2.3.3, the parts and materials for the riser and diffuser would be pre-assembled at the Pasha Terminal within the Port of Los Angeles. It is assumed that all construction activities would be

located on the pre-assembly site and, therefore, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would occur in the Pacific Ocean, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination
Construction and operation of Alternative 2 (Project) would not result in inadequate emergency access. There would be no impacts under CEQA.

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

NEPA Impact Determination
Construction and operation of Alternative 2 (Project) would not result in inadequate emergency access. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

Impact TRT-6. Would Alternative 2 (Project) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). Therefore, construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations under Alternative 1 (Project). Because all operation and maintenance activities would occur underground, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis
As stated in Section 18.2.3.3, the parts and materials for the riser and diffuser would be pre-assembled at the Pasha Terminal within the Port of Los Angeles. It is assumed that all construction activities would be located on the pre-assembly site and, therefore, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would occur in the Pacific Ocean, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination
Construction and operation of Alternative 2 (Project) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities. There would be no impacts under CEQA.

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

NEPA Impact Determination
Construction and operation of Alternative 2 (Project) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

18.4.4.3 Impact Summary – Alternative 2

Impacts on terrestrial transportation and traffic for Alternative 2 (Program), which are the same as Alternative 1 (Program), are summarized in Table 18-19. Impacts analyzed in this EIR/EIS for Alternative 2 (Project) are summarized in Table 18-21. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 18-21. Impact Summary – Alternative 2 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact TRT-1. Would Alternative 2 (Project) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				
Tunnel Alignment				
Wilmington to PV Shelf (Onshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to PV Shelf (Offshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
TraPac	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
LAXT	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Southwest Marine	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Riser/Diffuser Area				
PV Shelf	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-2. Would Alternative 2 (Project) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?				
Tunnel Alignment				
Wilmington to PV Shelf (Onshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to PV Shelf (Offshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
TraPac	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
LAXT	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Southwest Marine	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Riser/Diffuser Area				
PV Shelf	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact TRT-4. Would Alternative 2 (Project) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				
Tunnel Alignment				
Wilmington to PV Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to PV Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
TraPac	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
LAXT	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Southwest Marine	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
PV Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-5. Would Alternative 2 (Project) result in inadequate emergency access?				
Tunnel Alignment				
Wilmington to PV Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to PV Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
TraPac	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
LAXT	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Southwest Marine	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
PV Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-6. Would Alternative 2 (Project) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?				
Tunnel Alignment				
Wilmington to PV Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Wilmington to PV Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP East	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
TraPac	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
LAXT	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation

Table 18-21 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Southwest Marine	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
PV Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

18.4.5 Alternative 3

18.4.5.1 Program

Alternative 3 (Program) is the same as Alternative 1 (Program).

18.4.5.2 Project

The impacts for the riser and diffuser area on the PV Shelf for Alternative 3 (Project) would be the same as those described for Alternative 2 (Project). The impacts for the existing ocean outfalls for Alternative 3 (Project) would be the same as those described for Alternative 1 (Project).

Impact TRT-1. Would Alternative 3 (Project) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as those described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered direct impacts.

Operation

CEQA Analysis

All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Site – JWPCP West

Construction

CEQA Analysis

Assumptions made to determine future 2019 baseline conditions for this shaft site are summarized in Section 18.4.1. The location of the study intersections for Alternative 3 (Project) are shown on Figure 18-10, and LOS calculations for study intersections surrounding this shaft site are presented in Table 18-10. As indicated in the table, five of the nine study intersections surrounding the JWPCP West shaft site are projected to operate at LOS D or better during the AM and PM peak hours under 2019 baseline conditions. The exceptions are Sepulveda Boulevard/Vermont Avenue (AM and PM peak hours), Southbound I-110 Off-Ramp/Sepulveda Boulevard (AM peak hour), Lomita Boulevard/Vermont Avenue (AM peak hour), and Pacific Coast Highway/Figueroa Street (AM peak hour).

During the various construction phases, hauling of supplies and disposal of excavated soil by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. The construction-related traffic impact analysis was based on the most intense period of construction activity (worst-case scenario) of the construction between 2014 and 2021. Peak construction would occur in 2019. During construction of this shaft site, which would last approximately 10 to 12 months, 20 worker and 260 PCE truck trips (10 inbound worker, 10 outbound worker, 130 inbound PCE truck, 130 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 26 peak hour PCE truck trips (10 inbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the AM peak hour, and 10 outbound worker, 12 inbound PCE truck, and 14 outbound PCE truck in the PM peak hour). During onshore tunnel construction, which would last approximately 45 months, 240 worker and 444 PCE truck trips (120 inbound worker, 120 outbound worker, 222 inbound PCE truck, 222 outbound PCE truck) are estimated per day, including 80 peak hour worker and 44 peak hour PCE truck trips (40 inbound worker, 20 inbound PCE truck, and 24 outbound PCE truck in the AM peak hour, and 40 outbound worker, 20 inbound PCE truck, and 24 outbound PCE truck in the PM peak hour). During offshore tunnel construction, which would last approximately 15 months, 240 worker and 564 PCE truck trips (120 inbound worker, 120 outbound worker, 282 inbound PCE truck, 282 outbound PCE truck) are estimated per day, including 80 peak hour worker trips and 58 peak hour PCE truck trips (40 inbound worker, 28 inbound PCE truck, and 30 outbound PCE truck in the AM peak hour, and 40 outbound worker, 28 inbound PCE truck, and 30 outbound PCE truck in the PM peak hour). During decommissioning of this shaft site, which would last approximately 2 to 5 months, 20 worker and 40 PCE truck trips (10 inbound worker, 10 outbound worker, 20 inbound PCE truck, 20 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 4 peak hour PCE truck trips (10 inbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the AM peak hour, and 10 outbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the PM peak hour). Trip generation used for this analysis is summarized in Table 18-22 through Table 18-25.

FIGURE 18-10

Analyzed Intersections Alternatives 3 and 4 (Project)

CLEARWATER Program

Source: Sanitation Districts of Los Angeles County 2011, Fehr & Peers 2010, Thomas Bros. 2011, ESRI 2011

Table 18-22. Alternative 3 (Project) Construction Truck PCE Trip Generation Estimates by Location and by Phase Assuming Maximum Truck Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
JWPCP West Shaft								
Shaft Construction	10–12	260[a]	12	14	26	12	14	26
Onshore Tunneling	45[b]	444[c]	20	24	44	20	24	44
Offshore Tunneling	15[d]	564[e]	28	30	58	28	30	58
Shaft Covering and Site Restoration	2–5	40	2	2	4	2	2	4
Angels Gate Shaft								
Shaft Construction	8–9	160[f]	8	8	16	8	8	16
Shaft Site Use	18	8[g]	2	2	4	2	2	4
Shaft Covering and Site Restoration	3	120[h]	6	6	12	6	6	12
Riser and Diffuser Construction[i]	36	32	2	2	4	2	2	4
Existing Ocean Outfalls Rehabilitation	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PCE factor of 2.0 has been applied to these truck trips for traffic impact analysis.

[a] Estimated 65 truck round trips (130 total one-way) per day during shaft construction, which would last for 10 to 12 months.

[b] Assumed onshore tunneling rate of 34,000 feet at 35 feet per day and 30 working days per month.

[c] Number of truck trips for maximum production during onshore tunneling (up to 95 round trips for excavated material disposal and 16 round-trip deliveries; average activity is estimated to be 48 round trips for excavated material disposal and 9 round-trip deliveries).

[d] Assumed offshore tunneling rate of 11,400 feet at 40 feet per day and 30 working days per month.

[e] Number of truck trips for maximum production during offshore tunneling (up to 123 round trips for excavated material disposal and 18 round-trip deliveries; average activity is estimated to be 62 round trips for excavated material disposal and 10 round-trip deliveries).

[f] Estimated 40 truck round trips (80 total one-way) per day during shaft construction, which would last for 8 to 9 months.

[g] Estimated 2 truck round trips (4 total one-way) per day during tunnel construction, which would last for approximately 12 months.

[h] Number of truck trips for most intensive site restoration. Actual range of truck trips varies between 10 and 30 trips.

[i] Estimates for construction phase only. It is assumed that activity during pre-assembly and demobilization phases would be of similar intensity.

Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.

Table 18-23. Alternative 3 (Project) Construction Worker Trip Generation Estimates by Location and Phase Assuming Maximum Worker Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
JWPCP West Shaft								
Shaft Construction	10–12	20[a]	10	0	10	0	10	10
Onshore Tunneling	45[b]	240[c]	40	40	80	40	40	80
Offshore Tunneling	15[d]	240[c]	40	40	80	40	40	80
Shaft Covering and Site Restoration	2–5	20[e]	10	0	10	0	10	10
Angels Gate Shaft								
Shaft Construction	8–9	20[a]	10	0	10	0	10	10
Shaft Site Use	18	80[f]	40	0	40	0	40	40
Shaft Covering and Site Restoration	3	20[e]	10	0	10	0	10	10
Riser and Diffuser Construction[g]	36	30[h]	15	0	15	0	15	15
Existing Ocean Outfalls Rehabilitation	9	20[i]	10	0	10	0	10	10

Table 18-23 (Continued)

Site and Phase	Duration (Months)	Daily	AM Peak Hour	PM Peak Hour

[a] Assumed a 10-hour work shift, 5 days per week. Approximately 10 workers would be needed to construct each shaft.

[b] Assumed onshore tunneling rate of 34,000 feet at 35 feet per day and 30 working days per month.

[c] 35–40 workers needed during tunnel construction, with shift changes occurring in the peak hour. A maximum assumption of 40 workers was used for 3- to 8-hour shifts.

[d] Assumed offshore tunneling rate of 11,400 feet at 40 feet per day and 30 working days per month.

[e] Assumed a 10-hour work shift, 5 days per week. Approximately 10 workers would be needed to decommission each shaft.

[f] Assumed a 10-hour work shift, 5 days per week. Approximately 35–40 workers would be needed for tunnel construction at access shafts.

[g] Estimates for construction phase only. It is assumed that activity during pre-assembly and demobilization phases would be of similar intensity.

[h] Assumed a 10-hour work shift, 5 days per week. Approximately 15 workers would be needed to construct the riser and diffuser.

[i] Assumed a 10-hour work shift, 5 days per week. Approximately 8–10 workers would be needed for existing ocean outfalls rehabilitation.

Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.

Table 18-24. Alternative 3 (Project) Total PCE Construction Trip Generation Estimates by Location and Phase Assuming Maximum Truck and Worker Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
JWPCP West Shaft								
Shaft Construction	10–12	280	22	14	36	12	24	36
Onshore Tunneling	45[a]	684	60	64	124	60	64	124
Offshore Tunneling	15[b]	804	68	70	138	68	70	138
Shaft Covering and Site Restoration	2–5	60	12	2	14	2	12	14
Angels Gate Shaft								
Shaft Construction	8–9	180	18	8	26	8	18	26
Shaft Site Use	18	88	42	2	44	2	42	44
Shaft Covering and Site Restoration	3	140	16	6	22	6	16	22
Riser and Diffuser Construction[c]	36	62	17	2	19	2	17	19
Existing Ocean Outfalls Rehabilitation	9	20	10	0	10	0	10	10

PCE factor of 2.0 has been applied to these truck trips for traffic impact analysis.

[a] Assumed onshore tunneling rate of 34,000 feet at 35 feet per day and 30 working days per month.

[b] Assumed offshore tunneling rate of 11,400 feet at 40 feet per day and 30 working days per month.

[c] Estimates for construction phase only. It is assumed that activity during pre-assembly and demobilization phases would be of similar intensity.

Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.

Table 18-25. Alternative 3 (Project) Total PCE Peak Hour Construction Trip Generation per Phase per Quarter Assuming Maximum Truck and Worker Trips

	2015				2016				2017				2018				2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Submittals and TBM Fabrication																																
JWPCP West Shaft Construction	36	36	36	36																												
Site Preparation/Assemble TBM																																
Tunneling (Onshore)							124	124	124	124	124	124	124	124	124	124	124	124	124	124												
Tunneling (Offshore)																					138	138	138	138	138							
Angels Gate Shaft Construction																	26	26	26													
Angels Gate Shaft Use																				44	44	44	44	44	44							
PV Shelf Riser Construction													19	19	19	19	19	19	19	19												
PV Shelf Diffuser Construction																					19	19	19	19								
Existing Ocean Outfalls Rehabilitation																					10	10	10									
Demobilization																																
Total Trips per Quarter	36	36	36	36	0	0	124	124	124	124	124	124	124	143	143	143	143	169	169	169	187	**211**	**211**	**211**	201	182	0	0	0	0	0	0

Construction worker trips for this shaft site were distributed onto the surrounding street network based on the general distribution described in Section 18.4.1. Truck trips were assumed to travel on Figueroa Street and Sepulveda Boulevard to access I-110. The maximum estimated peak hour trips at the study intersections to and from this shaft site during construction is shown on Figure 18-11. The total projected peak hour traffic volumes at the study intersections are shown Figure 18-12. Future 2019 LOS conditions during the construction period and an assessment of potential temporary adverse impacts are presented in Table 18-26. Based on this analysis, the additional construction-related traffic associated with the JWPCP West shaft site would not significantly impact the nine study intersections in its vicinity. Therefore, impacts would be less than significant.

Table 18-26. Alternative 3 (Project) Future (2019) Intersection Level of Service Analysis and Impact Determination

	Intersection	Peak Hour	Cumulative Baseline 2019		Cumulative Plus Alternative 3 (Project) 2019		Project Increase in V/C	Adverse Project Impact
			V/C or Delay	LOS	V/C or Delay	LOS		
Study Intersections in the Vicinity of the JWPCP West Shaft Site								
1	Vermont Avenue	AM	0.992	E	0.993	E	0.001	No
	Sepulveda Boulevard	PM	0.981	E	0.982	E	0.001	No
2	SB I-110 Off-Ramp	AM	0.910	E	0.911	E	0.001	No
	Sepulveda Boulevard	PM	0.865	D	0.866	D	0.001	No
3	NB I-110 Off-Ramp	AM	0.746	C	0.757	C	0.011	No
	Sepulveda Boulevard	PM	0.736	C	0.747	C	0.011	No
4	Figueroa Street	AM	0.746	C	0.779	C	0.033	No
	Sepulveda Boulevard	PM	0.766	C	0.768	C	0.002	No
5	Main Street	AM	0.717	C	0.719	C	0.002	No
	Sepulveda Boulevard	PM	0.819	D	0.821	D	0.002	No
6	Vermont Avenue	AM	1.031	F	1.032	F	0.001	No
	Lomita Boulevard	PM	0.858	D	0.859	D	0.001	No
7	Figueroa Street	AM	0.787	C	0.788	C	0.001	No
	Lomita Boulevard	PM	0.724	C	0.744	C	0.020	No
8	Main Street/Wilmington Boulevard	AM	0.564	A	0.565	A	0.001	No
	Lomita Boulevard	PM	0.557	A	0.557	A	0.000	No
9	Figueroa Street	AM	0.958	E	0.962	E	0.004	No
	Pacific Coast Highway[a]	PM	0.887	D	0.892	D	0.005	No
Study Intersections in the Vicinity of the Angels Gate Shaft Site								
13	Gaffey Street	AM	0.551	A	0.563	A	0.012	No
	I-110 Ramps[a]	PM	0.689	B	0.689	B	0.000	No
14	Gaffey Street	AM	0.793	C	0.794	C	0.001	No
	9th Street[a]	PM	0.791	C	0.807	D	0.016	No
15	Gaffey Street	AM	8.500	A	8.700	A	--	No
	Paseo Del Mar[b]	PM	9.400	A	9.700	A	--	No
16	Western Avenue	AM	11.500	A	11.700	B	--	No
	Paseo Del Mar[c]	PM	12.200	A	12.400	B	--	No

Table 18-26 (Continued)

Intersection		Peak Hour	Cumulative Baseline 2019 V/C or Delay	Cumulative Baseline 2019 LOS	Cumulative Plus Alternative 3 (Project) 2019 V/C or Delay	Cumulative Plus Alternative 3 (Project) 2019 LOS	Project Increase in V/C	Adverse Project Impact
17	Western Avenue	AM	0.564	A	0.565	A	0.001	No
	9th Street[a]	PM	0.593	A	0.600	A	0.007	No

[a] Intersection is assumed to be operating under ATSAC and ATCS system in the future. Per LADOT guidelines, a 10 percent capacity credit has been taken at intersections operating with ATSAC/ATCS systems.

[b] Intersection is a four-way stop-controlled intersection. LOS is based on 2000 HCM four-way stop method. Average delay of the intersection is reported.

[c] Intersection is a one-way stop-controlled intersection. LOS is based on 2000 HCM unsignalized method. Worst approach delay of the intersection is reported.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis

Once the tunnel construction is complete, the shaft would be capped with a removable cover for future access to support operations and maintenance of the tunnel. In the operational phase of this project element, the JWPCP West shaft site would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. At this level of activity, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Shaft Site – Angels Gate

Construction

CEQA Analysis

Assumptions made to determine future 2019 baseline conditions for this shaft site are summarized in Section 18.4.1. The location of the study intersections for Alternative 3 (Project) are shown on Figure 18-10, and LOS calculations for study intersections surrounding this shaft site are presented in Table 18-10. As indicated in the table, the five study intersections surrounding the Angels Gate shaft site are projected to operate at LOS D or better during the morning and afternoon peak hours.

During the various construction phases, hauling of supplies and disposal of excavated soil by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. The construction-related traffic impact analysis was based on the most intense period (worst-case scenario) of construction between 2014 and 2021. Peak construction would occur in 2019. During construction of this shaft site, which would last approximately 8 to 9 months,

20 worker and 160 PCE truck trips (10 inbound worker, 10 outbound worker, 80 inbound PCE truck, 80 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 16 peak hour PCE truck trips (10 inbound worker, 8 inbound PCE truck, and 8 outbound PCE truck in the AM peak hour, and 10 outbound worker, 8 inbound PCE truck, and 8 outbound PCE truck in the PM peak hour). During tunnel construction, which would last approximately 18 months, 80 worker and 8 PCE truck trips (40 inbound worker, 40 outbound worker, 4 inbound PCE truck, 4 outbound PCE truck) are estimated per day, including 40 peak hour worker trips and 4 peak hour PCE truck trips (40 inbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the AM peak hour, and 40 outbound worker, 2 inbound PCE truck, and 2 outbound PCE truck in the PM peak hour). During decommissioning of this shaft site, which would last approximately 3 months, 20 worker and 120 PCE truck trips (10 inbound worker, 10 outbound worker, 60 inbound PCE truck, 60 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 12 peak hour PCE truck trips (10 inbound worker, 6 inbound PCE truck, and 6 outbound PCE truck in the AM peak hour, and 10 outbound worker, 6 inbound PCE truck, and 6 outbound PCE truck in the PM peak hour). Trip generation used for this analysis is summarized in Table 18-22 through Table 18-25.

Construction worker trips for this shaft site were distributed onto the surrounding street network based on the general distribution described in Section 18.4.1. Truck trips were assumed to travel on Gaffey Street to access I-110. The maximum estimated peak hour trips at the study intersections to and from this shaft site during construction are shown on Figure 18-11. The total projected peak hour traffic volumes at the study intersections are shown on Figure 18-12. Future 2019 LOS conditions during the construction period and an assessment of potential temporary adverse impact determination are presented in Table 18-26.

Based on this analysis, the additional construction-related traffic associated with the Angels Gate shaft site would not significantly impact the five study intersections in its vicinity. Therefore, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be indirect and temporary for onshore tunneling and direct and temporary for offshore tunneling. Refer to Table 18-22 through Table 18-25 for trips related to onshore and offshore tunneling.

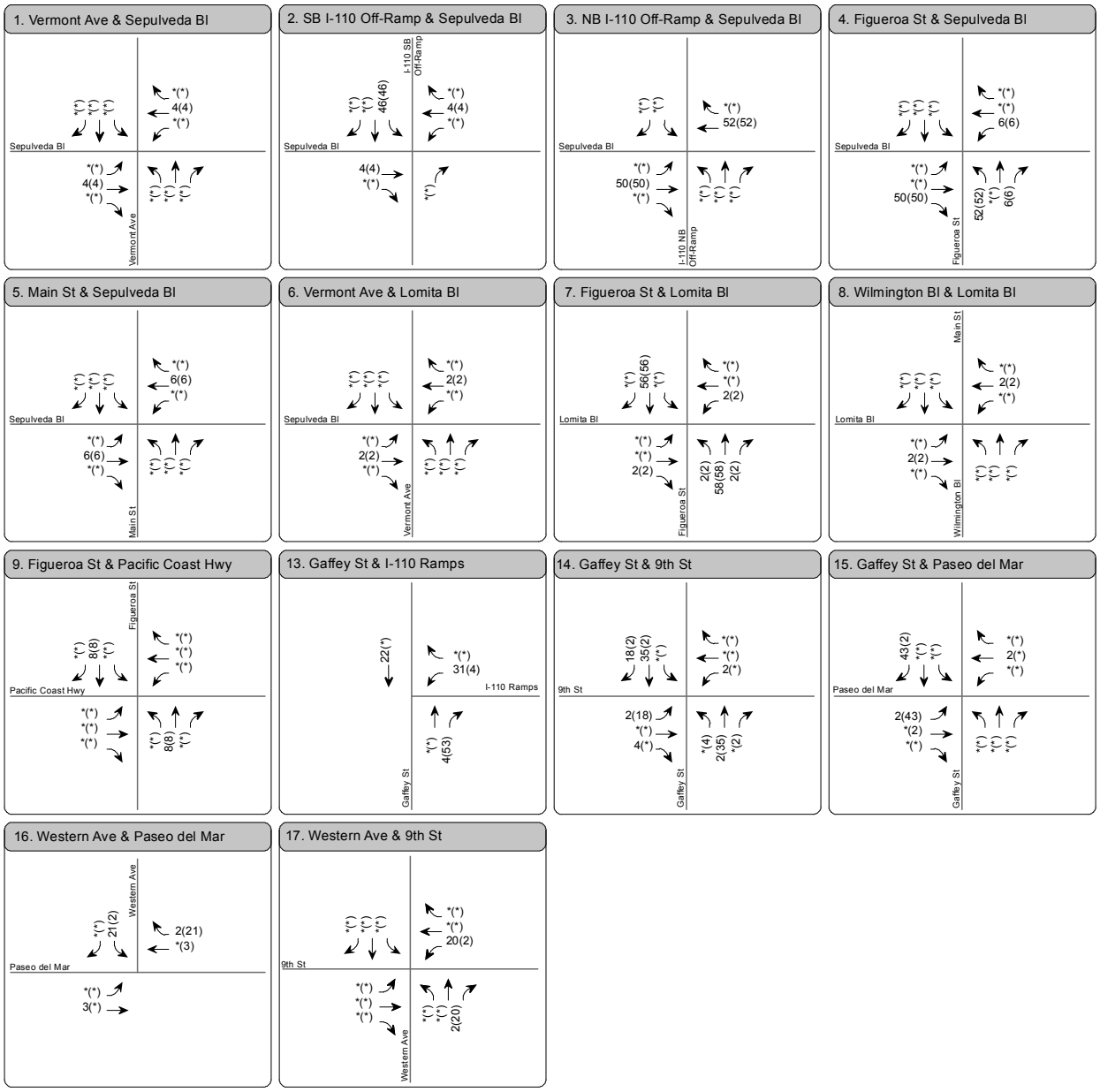
Operation

CEQA Analysis

Once the tunnel construction is complete, the shaft would be capped with a removable cover for future access to support operations and maintenance of the tunnel. In the operational phase of this project element, the Angels Gate shaft site would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. At this level of activity, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.



LEGEND

A M(PM) Peak Hour Traffic Volume

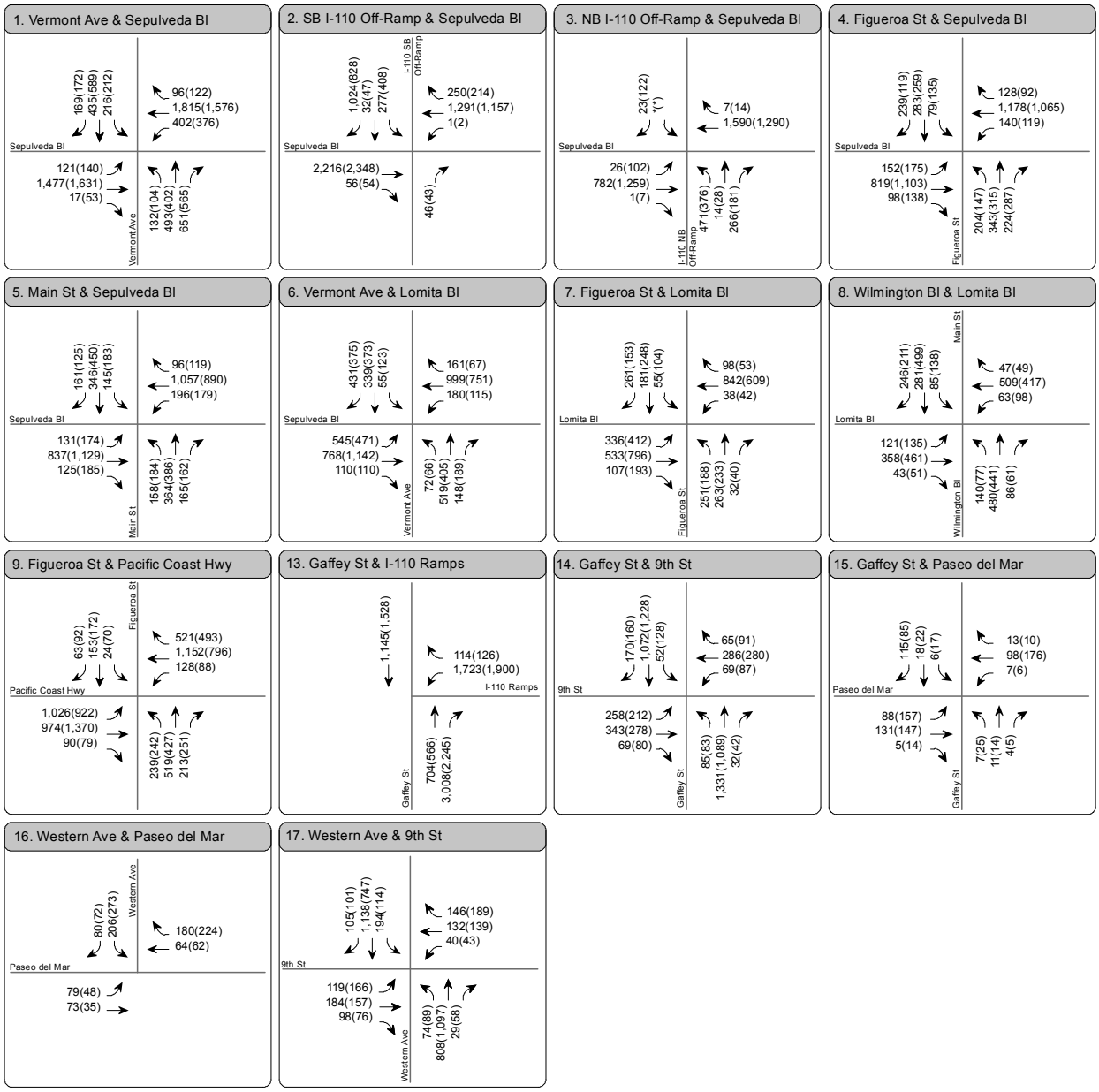
* No Traffic Data

FIGURE 18-11

CLEARWATER Program

Alternative 3 (Project) Only (2019) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010



LEGEND

AM(PM) Peak Hour Traffic Volume

* No Traffic Data

FIGURE 18-12

CLEARWATER Program

Cumulative Base Plus Alternative 3 (Project) Only (2019) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010

CEQA Impact Determination

Construction and operation of Alternative 3 (Project) would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts under CEQA would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

NEPA Impact Determination

Construction and operation of Alternative 3 (Project) would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact TRT-2. Would Alternative 3 (Project) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore)

Construction

CEQA Analysis

All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP West and Angels Gate

Construction

CEQA Analysis
There are six CMP arterial monitoring stations in the vicinity of the JWPCP West and Angels Gate shaft sites.

- Western Avenue/Pacific Coast Highway
- Figueroa Street/Pacific Coast Highway (study intersection 9)
- Alameda Street/Pacific Coast Highway
- Western Avenue/Toscanini Drive

- Gaffey Street/9th Street (study intersection 14)
- Western Avenue/9th Street (study intersection 17)

As shown on Figure 18-11, Alternative 3 (Project) would add approximately 63 trips to the Gaffey Street/9th Street intersection in the AM and PM peak hours. These added trips would result in an incremental change in V/C of less than 0.020, as shown in Table 18-26. Therefore, there would be no impact at this location. This element would add fewer than 50 peak hour trips to Figueroa Street/Pacific Coast Highway and Western Avenue/9th Street and is not expected to add enough new traffic to exceed the arterial analysis criteria of 50 vehicle trips at the three locations that were not fully analyzed under Impact TRT-1. In addition, construction-related trips would be of limited duration. Based on these considerations, construction-related traffic would be less than significant.

A regional analysis was conducted to quantify potential temporary impacts on the regional freeway system in the vicinity of Alternative 3 (Project), including segments of I-110 and I-710. Three freeway locations were identified for analysis.

- Route 110, at post mile 2.77, at Wilmington (CMP freeway monitoring station)
- Route 110, at post mile 7.016, at Carson Street
- Route 710, at post mile 7.60, at Willow Street (CMP freeway monitoring station)

Existing freeway mainline traffic volumes were obtained from 2008 Traffic Volumes on California State Highways (California Department of Transportation 2008) for the three selected mainline freeway locations. Peak hour volumes by direction were derived by applying directional and peak hour factors in 2008 Traffic Volumes on California State Highways, and freeway LOS was analyzed using the D/C methodology. A growth rate of 0.65 percent per year was applied to these traffic volumes to estimate 2010 existing base conditions for these freeway segments. As discussed in Section 18.4.1, because the current CMP projects a slightly lower growth rate for the study area (0.51 percent per year), the analysis presented here is conservative in the assumption regarding ambient traffic growth. The D/C ratios were calculated for each freeway segment using a capacity value of 2,000 vehicles per hour per freeway mainline lane for freeway mixed-flow lanes according to the Highway Capacity Manual. Freeway segment LOS was determined based on V/C ratios and the definitions shown in Table 18-17. The existing D/C ratios during the morning and afternoon peak hours at both the CMP freeway monitoring locations and other selected highway segments are shown in Table 18-27. The analysis indicates that the study segments along I-710 and I-110 at Carson Street currently operate at LOS F during the AM and PM peak hours.

Table 18-27. Existing and Future Freeway Volumes and Levels of Service Alternative 3 (Project)

				Existing (2010)			Cumulative Base (2019)				Future (2019) Alternative 3 (Project)				
Freeway Segments	**Direction**	**# of Lanes**	**Capacity**	**Peak Hour Volume[a]**	**D/C Ratio**	**LOS**	**Peak Hour Volume**	**D/C Ratio**	**LOS**	**Alternative 3 Peak Hour Trips**	**Peak Hour Volume**	**D/C Ratio**	**LOS**	**Project-related D/C Change**	**Significant Impact**
AM Peak Hour															
Harbor Freeway (I-110)															
@ Wilmington, south of C Street – Mile 2.77[b]	NB	4	8,000	7,450	0.931	E	7,886	0.986	E	4	7,890	0.986	E	0.000	No
	SB	4	8,000	5,491	0.686	C	5,812	0.727	C	31	5,843	0.730	C	0.004	No
@ Carson Street – Mile 7.016	NB	4	8,000	9,150	1.144	F(0)	9,685	1.211	F(0)	52	9,737	1.217	F(0)	0.006	No
	SB	4	8,000	7,039	0.880	D	7,451	0.931	E	77	7,528	0.941	E	0.010	No
Long Beach Freeway (I-710)															
North of Junction Route 1 (PCH), Willow Street – Mile 7.60[b]	NB	3	6,000	6,128	1.021	F(0)	6,486	1.081	F(0)	0	6,486	1.081	F(0)	0.000	No
	SB	3	6,000	6,408	1.068	F(0)	6,783	1.131	F(0)	22	6,805	1.134	F(0)	0.004	No
PM Peak Hour															
Harbor Freeway (I-110)															
@ Wilmington, south of C Street – Mile 2.77[b]	NB	4	8,000	5,014	0.627	C	5,307	0.663	C	31	5,338	0.667	C	0.004	No
	SB	4	8,000	8,104	1.013	F(0)	8,578	1.072	F(0)	4	8,582	1.073	F(0)	0.001	No
@ Carson Street – Mile 7.016	NB	4	8,000	6,369	0.796	D	6,742	0.843	D	79	6,821	0.853	D	0.010	No
	SB	4	8,000	8,104	1.013	F(0)	8,578	1.072	F(0)	50	8,628	1.079	F(0)	0.006	No
Long Beach Freeway (I-710)															
North of Junction Route 1 (PCH), Willow Street – Mile 7.60[b]	NB	3	6,000	5,807	0.968	E	6,147	1.025	F(0)	22	6,169	1.028	F(0)	0.004	No
	SB	3	6,000	6,078	1.013	F(0)	6,434	1.072	F(0)	0	6,434	1.072	F(0)	0.000	No

[a] Caltrans Data – factored from 2008 to 2010 conditions

[b] The post miles of the count data are in close proximity to the two identified CMP freeway monitoring stations, including I-110 south of C Street (at post mile 2.77) and I-710 south of Willow Street (at post mile 7.887).

The methodology used to develop forecasts of future year 2019 freeway volumes with and without the addition of trips added by Alternative 3 (Project) is similar to that used for the analyzed intersections. The year 2019 cumulative base freeway traffic volumes were developed by factoring the baseline volumes by 0.65 percent per year to reflect cumulative growth. The year 2019 peak hour traffic volumes and projected D/C ratio for the analyzed freeway segments are presented in Table 18-27. The trip distribution patterns described in Section 18.4.1 were used for this analysis to identify freeway locations at which the project would temporarily add considerable new trips.

The projected D/C ratios under 2019 cumulative plus Alternative 3 (Project) conditions and the incremental increase are presented in Table 18-27. The significant impact criteria established by the CMP provide that a project would generate significant regional freeway impacts if the projected LOS is LOS F and the increase in D/C ratio caused by the project traffic is equal to or more than 0.02. As shown, Alternative 3 (Project) would not have any significant impacts on the adjacent freeway segments during either the AM or PM peak hours.

The methodology described in the CMP was used to estimate the number of additional transit trips that may occur during construction. This methodology states that transit trips may be approximately 3.5 percent of vehicle trips. Applying this estimate to the estimated construction worker trips, it is estimated that up to six new transit person trips (three inbound and three outbound) may occur near each of the construction sites. Each shaft site is served by at least one of the transit lines described in Section 18.4.1. At this level of increase, impacts on the regional transit system would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis

In the operational phase, the JWPCP West and Angels Gate shaft sites would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. Based on the CMP impact criteria summarized in Section 18.4.1, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

CEQA Impact Determination

Construction and operation of Alternative 3 (Project) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts under CEQA would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts
Impacts would be less than significant.

NEPA Impact Determination
Construction and operation of Alternative 3 (Project) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact TRT-4. Would Alternative 3 (Project) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP West and Angels Gate

Construction

CEQA Analysis
Because all construction activities would be located on site, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would be located on site, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination
Construction and operation of Alternative 3 (Project) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). There would be no impacts under CEQA.

Mitigation
No mitigation is required.

Residual Impacts
There would be no impacts.

NEPA Impact Determination
Construction and operation of Alternative 3 (Project) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
There would be no impacts.

Impact TRT-5. Would Alternative 3 (Project) result in inadequate emergency access?

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP West and Angels Gate

Construction

CEQA Analysis
Because all construction activities would be located on site, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all construction activities would be located on site, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 3 (Project) would not result in inadequate emergency access. There would be no impacts under CEQA.

Mitigation
No mitigation is required.

Residual Impacts
There would be no impacts.

NEPA Impact Determination
Construction and operation of Alternative 3 (Project) would not result in inadequate emergency access. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
There would be no impacts.

Impact TRT-6. Would Alternative 3 (Project) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP West and Angels Gate

Construction

CEQA Analysis
Because all construction activities would be located on site, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would be located on site, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 3 (Project) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities. There would be no impacts under CEQA.

Mitigation

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Construction and operation of Alternative 3 (Project) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation

No mitigation is required.

Residual Impacts

No impacts would occur.

18.4.5.3 Impact Summary – Alternative 3

Impacts on terrestrial transportation and traffic for Alternative 3 (Program), which are the same as Alternative 1 (Program), are summarized in Table 18-19. Impacts analyzed in this EIR/EIS for Alternative 3 (Project) are summarized in Table 18-28. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 18-28. Impact Summary – Alternative 3 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact TRT-1. Would Alternative 3 (Project) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				
Tunnel Alignment				
Figueroa/ Gaffey to PV Shelf (Onshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-28 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Figueroa/ Gaffey to PV Shelf (Offshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Angels Gate	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Riser/Diffuser Area				
PV Shelf	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation

Table 18-28 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-2. Would Alternative 3 (Project) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?				
Tunnel Alignment				
Figueroa/ Gaffey to PV Shelf (Onshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Figueroa/ Gaffey to PV Shelf (Offshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction

Table 18-28 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Angels Gate	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Riser/Diffuser Area				
PV Shelf	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-28 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact TRT-4. Would Alternative 3 (Project) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				
Tunnel Alignment				
Figueroa/ Gaffey to PV Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Figueroa/ Gaffey to PV Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Angels Gate	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-28 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Rise/Diffuser Area				
PV Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-5. Would Alternative 3 (Project) result in inadequate emergency access?				
Tunnel Alignment				
Figueroa/ Gaffey to PV Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Figueroa/ Gaffey to PV Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-28 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Shaft Site				
JWPCP West	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Angels Gate	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
PV Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-28 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact TRT-6. Would Alternative 3 (Project) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?				
Tunnel Alignment				
Figueroa/ Gaffey to PV Shelf (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Figueroa/ Gaffey to PV Shelf (Offshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Angels Gate	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

Table 18-28 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Riser/Diffuser Area				
PV Shelf	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

18.4.6 Alternative 4 (Recommended Alternative)

18.4.6.1 Program

Alternative 4 (Program) is the same as Alternative 1 (Program).

18.4.6.2 Project

The impacts for the shaft site at JWPCP West for Alternative 4 (Project) would be the same as for Alternative 3 (Project), except tunnel construction would occur over a period of 4 years instead of 5 years. The construction impacts for the rehabilitation of the existing ocean outfalls would be the same as for Alternative 1 (Project). Operational impacts would be the same as baseline conditions; therefore, there would be no operational impacts for the existing ocean outfalls under Alternative 4 (Project).

Impact TRT-1. Would Alternative 4 (Project) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Tunnel Alignment – Figueroa/Western to Royal Palms (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Site – Royal Palms

Construction

CEQA Analysis
Assumptions made to determine future 2019 baseline conditions for this shaft site are summarized in Section 18.4.1. The location of the study intersections for Alternative 4 (Project) are shown on Figure 18-10, and LOS calculations for study intersections surrounding this shaft site are presented in Table 18-10. As indicated in the table, the five study intersections surrounding the Royal Palms shaft site are projected to operate at LOS D or better during the AM and PM peak hours under 2019 baseline conditions.

During the various construction phases, hauling of supplies and disposal of excavated soil by truck and travel by construction workers and employees would generate traffic over the surrounding regional and local transportation system. The construction-related traffic impact analysis was based on the most intense period (worst-case scenario) of construction between 2014 and 2021. Peak construction activity

would occur during 2019. During construction of this shaft site, which would last approximately 6 to 9 months, 20 worker and 160 PCE truck trips (10 inbound worker, 10 outbound worker, 80 inbound PCE truck, 80 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 16 peak hour PCE truck trips (10 inbound worker, 8 inbound PCE truck, and 8 outbound PCE truck in the AM peak hour, and 10 outbound worker, 8 inbound PCE truck, and 8 outbound PCE truck in the PM peak hour). During manifold construction, which would last approximately 18 months, 20 worker and 160 PCE truck trips (10 inbound worker, 10 outbound worker, 80 inbound PCE truck, 80 outbound PCE truck) are estimated per day, including 10 peak hour worker trips and 16 peak hour PCE truck trips (10 inbound worker, 8 inbound PCE truck, and 8 outbound PCE truck in the AM peak hour, and 10 outbound worker trips, 8 inbound PCE truck, and 8 outbound PCE truck in the PM peak hour). Trip generation used for this analysis is summarized in Table 18-29 through Table 18-32.

Table 18-29. Alternative 4 (Project) Construction Truck PCE Trip Generation Estimates by Location and by Phase Assuming Maximum Truck Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
JWPCP West Shaft								
Shaft Construction	10–12	260[a]	12	14	26	12	14	26
Onshore Tunneling	48[b]	444[c]	20	24	44	20	24	44
Shaft Covering and Site Restoration	2–5	40	2	2	4	2	2	4
Royal Palms Shaft								
Shaft Construction	6–9	160[d]	8	8	16	8	8	16
Manifold Construction	18	160[e]	8	8	16	8	8	16
Existing Ocean Outfalls Rehabilitation	9	N/A	N/A	N/A	N/A	N/A	N/A	N/A

PCE factor of 2.0 has been applied to these truck trips for traffic impact analysis.

[a] Estimated 65 truck round trips (130 total one-way) per day during shaft construction, which would last for 10 to 12 months.

[b] Assumed onshore tunneling rate of 36,000 feet at 35 feet per day and 30 working days per month.

[c] Number of truck trips for maximum production during onshore tunneling (up to 95 round trips for excavated material disposal and 16 round-trip deliveries; average activity is estimated to be 48 round trips for excavated material disposal and 9 round-trip deliveries).

[d] Estimated 40 truck round trips (80 total one-way) per day during shaft construction, which would last for 6 to 9 months.

[e] Estimated 40 truck round trips (80 total one-way) per day during manifold construction, which would last for 18 months.

Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.

Table 18-30. Alternative 4 (Project) Construction Worker Trip Generation Estimates by Location and Phase Assuming Maximum Worker Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
JWPCP West Shaft								
Shaft Construction	10–12	20[a]	10	0	10	0	10	10
Onshore Tunneling	48[b]	240[c]	40	40	80	40	40	80
Shaft Covering and Site Restoration	2–5	20[d]	10	0	10	0	10	10
Royal Palms Shaft								
Shaft Construction	6–9	20[a]	10	0	10	0	10	10
Manifold Construction	18	20[e]	10	0	10	0	10	10
Existing Ocean Outfalls Rehabilitation	9	20[f]	10	0	10	0	10	10

Table 18-30 (Continued)

Site and Phase	Duration (Months)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total

[a] Assumed a 10-hour work shift, 5 days per week. Approximately 10 workers would be needed to construct each shaft.

[b] Assumed onshore tunneling rate of 36,000 feet at 35 feet per day and 30 working days per month.

[c] 35–40 workers needed during tunnel construction, with shift changes occurring in the peak hour. A maximum assumption of 40 workers was used for 3- to 8-hour shifts.

[d] Assumed a 10-hour work shift, 5 days per week. Approximately 10 workers would be needed to decommission each shaft.

[e] Estimated 5–10 workers per day for one 10-hour shift, 5 days per week, for approximately 18 months. It is assumed that activity during demobilization phases would be of similar or lower intensity.

[f] Assumed a 10-hour work shift, 5 days per week. Approximately 8–10 workers would be needed for existing ocean outfalls rehabilitation.

Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.

Table 18-31. Alternative 4 (Project) Total PCE Construction Trip Generation Estimates by Location and Phase Assuming Maximum Truck and Worker Trips

Site and Phase	Duration (Months)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
JWPCP West Shaft								
Shaft Construction	10–12	280	22	14	36	12	24	36
Onshore Tunneling	48[a]	684	60	64	124	60	64	124
Shaft Restoration	2–5	60	12	2	14	2	12	14
Royal Palms Shaft								
Shaft Construction	6–9	180	18	8	26	8	18	26
Manifold Construction	18	180	18	8	26	8	18	26
Existing Ocean Outfalls Rehabilitation	9	20	10	0	10	0	10	10

[a] Assumed onshore tunneling rate of 36,000 feet at 35 feet per day and 30 working days per month.

Source: Truck and worker trip estimates are based on information in the JWPCP tunnel and ocean outfall feasibility report (Parsons 2011) and additional information.

Table 18-32. Alternative 4 (Project) Total PCE Peak Hour Construction Trip Generation per Phase per Quarter Assuming Maximum Truck and Worker Trips

	2015				2016				2017				2018				2019				2020				2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Submittals and TBM Fabrication																																
JWPCP West Shaft Construction	36	36	36	36																												
Site Preparation/Assemble TBM																																
Tunneling							124	124	124	124	124	124	124	124	124	124	124	124	124	124	124	124										
Royal Palms Shaft Construction																			26	26												
Royal Palms Shaft Use																					26	26	26	26	26	26						
Existing Ocean Outfalls Rehabilitation																						10	10	10								
Demobilization																																
Total Trips per Quarter	36	36	36	36	0	0	124	124	124	124	124	124	124	124	124	124	124	124	150	150	**150**	**160**	36	36	26	26	0	0	0	0	0	0

Construction worker trips for this shaft site were distributed onto the surrounding street network based on the general distribution described in Section 18.4.1. Truck trips were assumed to travel on Gaffey Street and Western Avenue to access I-110, along the most direct route to the regional freeway system. The maximum estimated peak hour trips at the study intersections to and from this shaft site during construction are shown on Figure 18-13. The total projected peak hour traffic volumes at the study intersections are shown on Figure 18-14. Future 2019 LOS conditions during the construction period and an assessment of potential temporary adverse impacts are presented in Table 18-33.

Table 18-33. Alternative 4 (Project) Future (2019) Intersection Level of Service Analysis and Impact Determination

	Intersection	Peak Hour	Cumulative Baseline 2019 V/C or Delay	Cumulative Baseline 2019 LOS	Cumulative Plus Alternative 4 (Project) 2019 V/C or Delay	Cumulative Plus Alternative 4 (Project) 2019 LOS	Project Increase in V/C	Adverse Project Impact
Study Intersections in the Vicinity of the JWPCP West Shaft Site								
1	Vermont Avenue	AM	0.992	E	0.993	E	0.001	No
	Sepulveda Boulevard	PM	0.981	E	0.982	E	0.001	No
2	SB I-110 Off-Ramp	AM	0.910	E	0.911	E	0.001	No
	Sepulveda Boulevard	PM	0.865	D	0.866	D	0.001	No
3	NB I-110 Off-Ramp	AM	0.746	C	0.755	C	0.009	No
	Sepulveda Boulevard	PM	0.736	C	0.746	C	0.010	No
4	Figueroa Street	AM	0.746	C	0.775	C	0.029	No
	Sepulveda Boulevard	PM	0.766	C	0.768	C	0.002	No
5	Main Street	AM	0.717	C	0.719	C	0.002	No
	Sepulveda Boulevard	PM	0.819	D	0.821	D	0.002	No
6	Vermont Avenue	AM	1.031	F	1.032	F	0.001	No
	Lomita Boulevard	PM	0.858	D	0.859	D	0.001	No
7	Figueroa Street	AM	0.787	C	0.788	C	0.001	No
	Lomita Boulevard	PM	0.724	C	0.741	C	0.017	No
8	Main Street/Wilmington Boulevard	AM	0.564	A	0.565	A	0.001	No
	Lomita Boulevard	PM	0.557	A	0.557	A	0.000	No
9	Figueroa Street	AM	0.958	E	0.962	E	0.004	No
	Pacific Coast Highway[a]	PM	0.887	D	0.892	D	0.005	No
Study Intersections in the Vicinity of the Royal Palms Shaft Site								
13	Gaffey Street	AM	0.551	A	0.555	A	0.004	No
	I-110 Ramps[a]	PM	0.689	B	0.691	B	0.002	No
14	Gaffey Street	AM	0.793	C	0.797	C	0.004	No
	9th Street[a]	PM	0.791	C	0.803	D	0.012	No
15	Gaffey Street	AM	8.500	A	8.500	A	--	No
	Paseo Del Mar[b]	PM	9.400	A	9.400	A	--	No
16	Western Avenue	AM	11.500	A	11.700	B	--	No
	Paseo Del Mar[c]	PM	12.200	A	12.400	B	--	No
17	Western Avenue	AM	0.564	A	0.565	A	0.001	No
	9th Street[a]	PM	0.593	A	0.598	A	0.005	No

Table 18-33 (Continued)

Intersection	Peak Hour	Cumulative Baseline 2019		Cumulative Plus Alternative 4 (Project) 2019		Project Increase in V/C	Adverse Project Impact
		V/C or Delay	LOS	V/C or Delay	LOS		

[a] Intersection is assumed to be operating under ATSAC and ATCS system in the future. Per LADOT guidelines, a 10 percent capacity credit has been taken at intersections operating with ATSAC/ATCS systems.

[b] Intersection is a four-way stop-controlled intersection. LOS is based on 2000 HCM four-way stop method. Average delay of the intersection is reported.

[c] Intersection is a one-way stop-controlled intersection. LOS is based on 2000 HCM unsignalized method. Worst approach delay of the intersection is reported.

Based on this analysis, the additional construction-related traffic associated with the Royal Palms shaft site would not significantly impact the five study intersections in its vicinity. Therefore, impacts would be less than significant.[2]

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis

Once the tunnel construction is complete, the shaft would be capped with a removable cover for future access to support operations and maintenance of the tunnel. In the operational phase of this project element, the Royal Palms shaft site would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. At this level of activity, impacts would be less than significant.

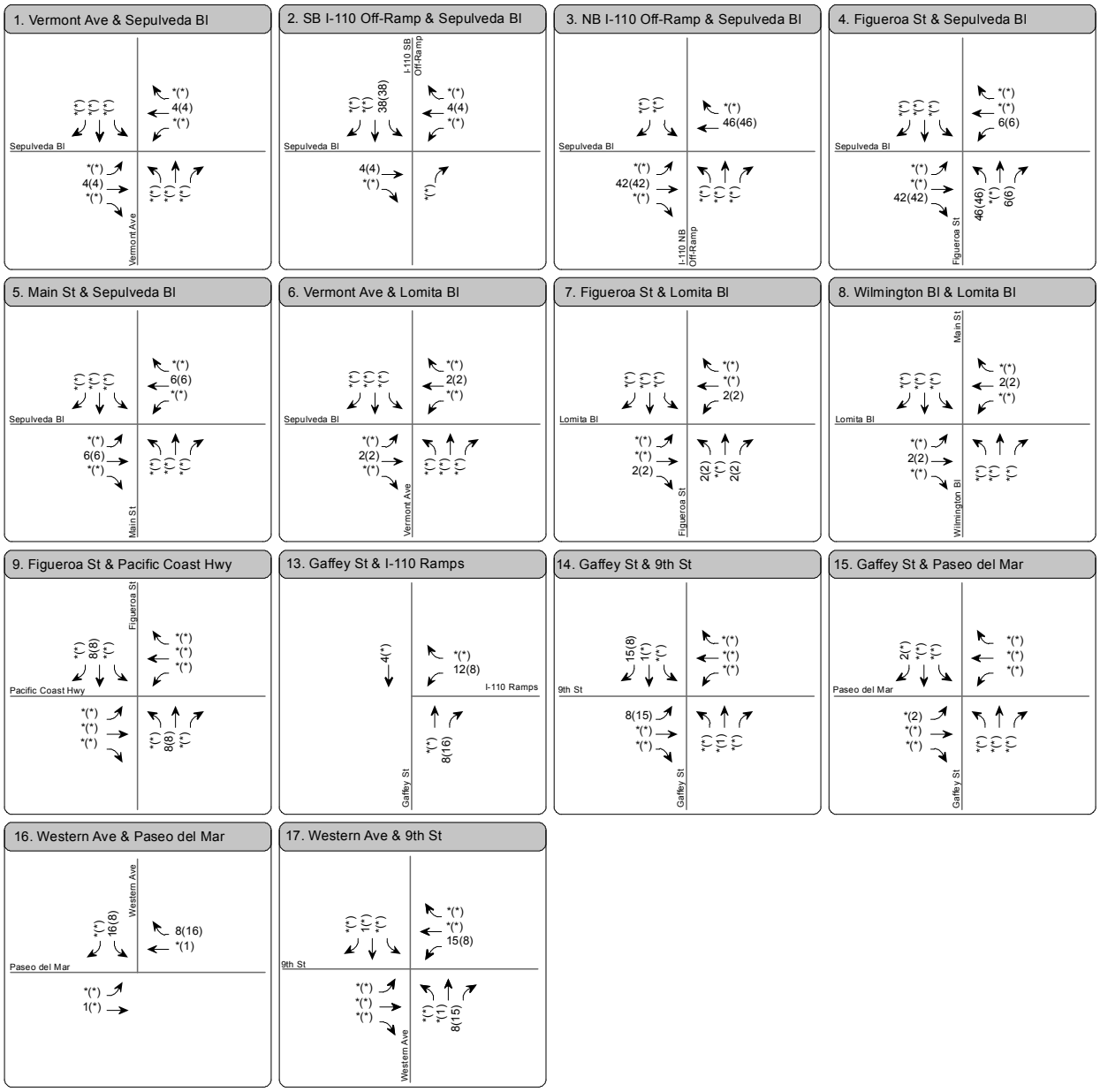
NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

CEQA Impact Determination

Construction and operation of Alternative 4 (Project) would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system,

[2] Since the time of the project-level traffic analysis of Alternative 4, there was a landslide east of the Royal Palms shaft site that led the city of Los Angeles to close a portion of Paseo Del Mar to through traffic for an indeterminate period. The closure to motorized traffic of the roadway link between Western Avenue and Weymouth Avenue has resulted in localized traffic patterns that differ from those that prevailed when the baseline traffic counts used in the original analysis were collected. Because it is unknown whether this roadway segment would be reopened by the time of construction at the Royal Palms shaft site, an additional traffic analysis was performed to determine whether construction at the shaft site would result in different traffic impacts if Paseo Del Mar remained closed. This additional traffic analysis is included as Appendix 18-D. The analysis concluded that the construction traffic impacts with Paseo Del Mar closed would be consistent with the impacts in the original traffic analysis, and that the impacts at the analyzed intersections would be less than significant. The increase in traffic from the project with Paseo Del Mar closed would not exceed the city of Los Angeles' established thresholds of significance.



LEGEND

A M(PM) Peak Hour Traffic Volume

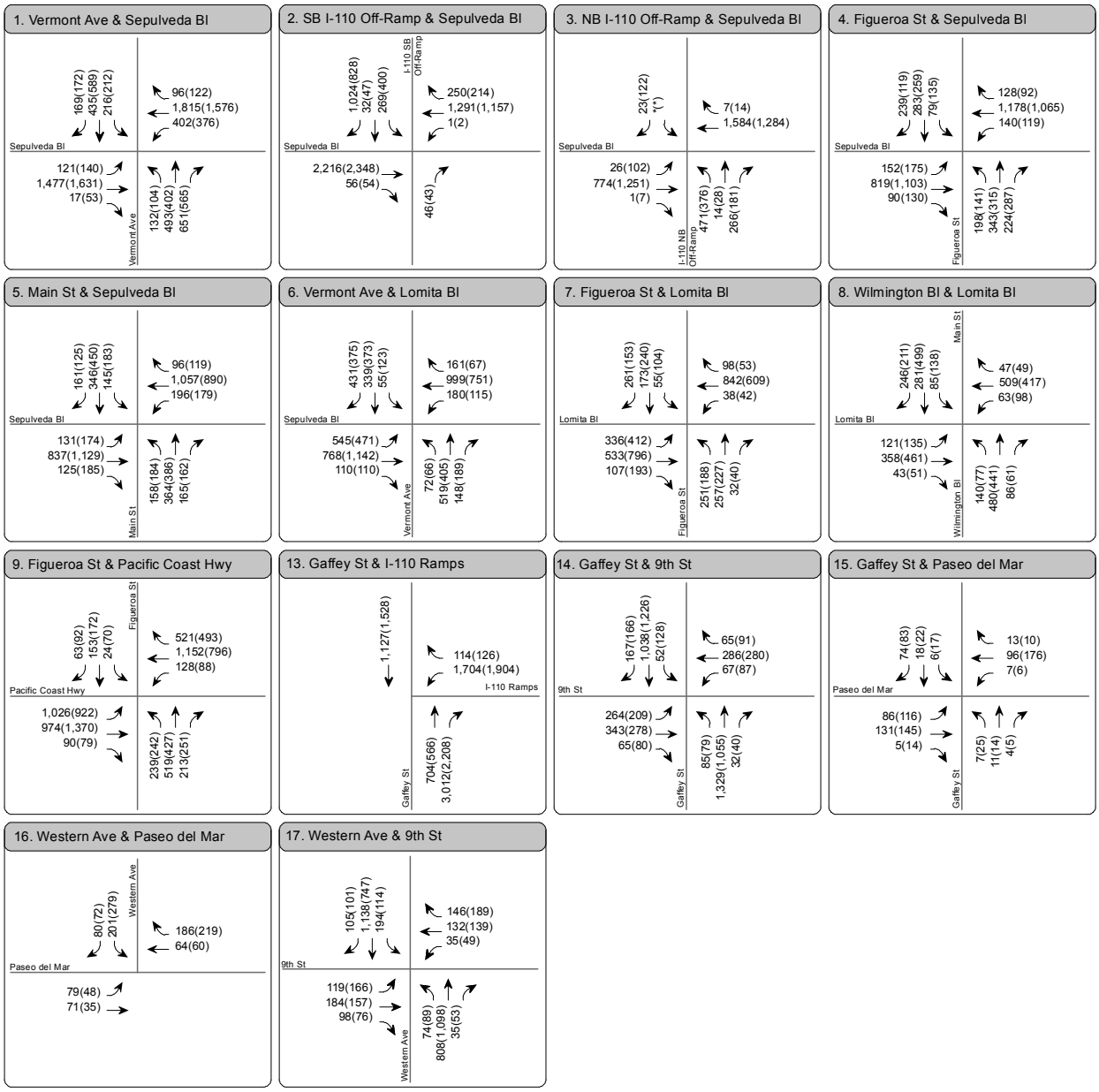
* No Traffic Data

FIGURE 18-13

CLEARWATER Program

Alternative 4 (Project) Only (2019) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010



LEGEND

A M(PM) Peak Hour Traffic Volume

* No Traffic Data

FIGURE 18-14

CLEARWATER Program

Cumulative Base Plus Alternative 4 (Project) Only (2019) Peak Hour Traffic Volumes

Source: Fehr & Peers 2010

taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts under CEQA would be less than significant.

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

NEPA Impact Determination
Construction and operation of Alternative 4 (Project) would not conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact TRT-2. Would Alternative 4 (Project) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?

Tunnel Alignment – Figueroa/Western to Royal Palms (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in less than significant impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis

All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Sites – JWPCP West and Royal Palms

Construction

CEQA Analysis

There are six CMP arterial monitoring stations in the vicinity of the JWPCP West and Royal Palms shaft sites.

- Western Avenue/Pacific Coast Highway
- Figueroa Street/Pacific Coast Highway (study intersection 9)
- Alameda Street/Pacific Coast Highway
- Western Avenue/Toscanini Drive
- Gaffey Street/9th Street (study intersection 14)
- Western Avenue/9th Street (study intersection 17)

As shown on Figure 18-14, Alternative 4 (Project) would add approximately 41 trips to the Gaffey Street/9th Street intersection in the AM and PM peak hours. These added trips would result in an incremental change in V/C of 0.022 at LOS D in the PM peak hour, as shown in Table 18-33. This element would add fewer than 50 peak hour trips to Figueroa Street/Pacific Coast Highway and Western Avenue/9th Street and is not expected to add enough new traffic to exceed the arterial analysis criteria of 50 vehicle trips at the three locations that were not fully analyzed under Impact TRT-1. In addition, construction-related trips would be of limited duration. Based on these considerations, construction-related traffic impacts on the CMP system would be less than significant.

A regional analysis was conducted to quantify potential temporary impacts on the regional freeway system in the vicinity of Alternative 4 (Project), including segments of I-110 and I-710. Three freeway locations were identified for analysis.

- Route 110, at post mile 2.77, at Wilmington (CMP freeway monitoring station)
- Route 110, at post mile 7.016, at Carson Street
- Route 710, at post mile 7.60, at Willow Street (CMP freeway monitoring station)

Existing freeway mainline traffic volumes were obtained from 2008 Traffic Volumes on California State Highways (California Department of Transportation 2008) for the three selected mainline freeway locations. Peak hour volumes by direction were derived by applying directional and peak hour factors in 2008 Traffic Volumes on California State Highways, and freeway LOS was analyzed using the

D/C methodology. A growth rate of 0.65 percent per year was applied to these traffic volumes to estimate 2010 existing base conditions for these freeway segments. As discussed in Section 18.4.1, because the current CMP projects a slightly lower growth rate for the study area (0.51 percent per year), the analysis presented here is conservative in the assumption of regarding ambient traffic growth. The D/C ratios were calculated for each freeway segment using a capacity value of 2,000 vehicles per hour per freeway mainline lane for freeway mixed-flow lanes according to the Highway Capacity Manual. Freeway segment LOS was determined based on V/C ratios and the definitions shown in Table 18-17. The existing D/C ratios during the morning and afternoon peak hours at both the CMP freeway monitoring locations and other selected highway segments are shown in Table 18-34. The analysis indicates that the study segments along I-710 and I-110 at Carson Street currently operate at LOS F during the AM and PM peak hours.

Table 18-34. Existing and Future Freeway Volumes and Levels of Service Alternative 4 (Project)

				Existing (2010)			Cumulative Base (2019)				Future (2019) Alternative 4 (Project)				
Freeway Segments	Direction	# of Lanes	Capacity	Peak Hour Volume[a]	D/C Ratio	LOS	Peak Hour Volume	D/C Ratio	LOS	Alternative 4 (Project) Peak Hour Trips	Peak Hour Volume	D/C Ratio	LOS	Project-Related D/C Change	Significant Impact
AM Peak Hour															
Harbor Freeway (I-110)															
@ Wilmington, south of C Street – Mile 2.77[b]	NB	4	8,000	7,450	0.931	E	7,886	0.986	E	8	7,894	0.987	E	0.001	No
	SB	4	8,000	5,491	0.686	C	5,812	0.727	C	12	5,824	0.728	C	0.001	No
@ Carson Street – Mile 7.016	NB	4	8,000	9,150	1.144	F(0)	9,685	1.211	F(0)	50	9,735	1.217	F(0)	0.006	No
	SB	4	8,000	7,039	0.880	D	7,451	0.931	E	50	7,501	0.938	E	0.006	No
Long Beach Freeway (I-710)															
North of Junction Route 1 (PCH), Willow Street – Mile 7.60[b]	NB	3	6,000	6,128	1.021	F(0)	6,486	1.081	F(0)	0	6,486	1.081	F(0)	0.000	No
	SB	3	6,000	6,408	1.068	F(0)	6,783	1.131	F(0)	4	6,787	1.131	F(0)	0.001	No
PM Peak Hour															
Harbor Freeway (I-110)															
@ Wilmington, south of C Street – Mile 2.77[b]	NB	4	8,000	5,014	0.627	C	5,307	0.663	C	12	5,319	0.665	C	0.001	No
	SB	4	8,000	8,104	1.013	F(0)	8,578	1.072	F(0)	8	8,586	1.073	F(0)	0.001	No
@ Carson Street – Mile 7.016	NB	4	8,000	6,369	0.796	D	6,742	0.843	D	54	6,796	0.850	D	0.007	No
	SB	4	8,000	8,104	1.013	F(0)	8,578	1.072	F(0)	46	8,624	1.078	F(0)	0.006	No
Long Beach Freeway (I-710)															
North of Junction Route 1 (PCH), Willow Street – Mile 7.60[b]	NB	3	6,000	5,807	0.968	E	6,147	1.025	F(0)	4	6,151	1.025	F(0)	0.001	No
	SB	3	6,000	6,078	1.013	F(0)	6,434	1.072	F(0)	0	6,434	1.072	F(0)	0.000	No

[a] Caltrans Data - factored from 2008 to 2010 conditions.

[b] The post miles of the count data are in close proximity to the two identified CMP freeway monitoring stations, including I-110 south of C Street at post mile 2.77) and I-710 south of Willow Street (at post mile 7.887).

The methodology used to develop forecasts of future year 2019 freeway volumes with and without the addition of trips added by Alternative 4 (Project) is similar to that used for the analyzed intersections. The year 2019 cumulative base freeway traffic volumes were developed by factoring the baseline volumes by 0.65 percent per year to reflect cumulative growth. The year 2019 peak hour traffic volumes and projected D/C ratio for the analyzed freeway segments are presented in Table 18-34. The trip distribution patterns described in Section 18.4.1 were used for this analysis to identify freeway locations at which the project would temporarily add considerable new trips.

The projected D/C ratios under 2019 cumulative plus Alternative 4 (Project) conditions and the incremental increase are presented in Table 18-34. The significant impact criteria established by the CMP provide that a project would generate significant regional freeway impacts if the projected LOS is LOS F and the increase in D/C ratio caused by the project traffic is equal to or more than 0.02. As shown, Alternative 4 (Project) would not have any significant impacts on the adjacent freeway segments during either the AM or PM peak hours.

The methodology described in the CMP was used to estimate the number of additional transit trips that may occur during construction. This methodology states that transit trips may be approximately 3.5 percent of vehicle trips. Applying this estimate to the estimated construction worker trips, it is estimated that up to six new transit person trips (three inbound and three outbound) may occur near each of the construction sites. Each shaft site is served by at least one of the transit lines described in Section 18.4.1. At this level of increase, impacts on the regional transit system would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

Operation

CEQA Analysis

In the operational phase, the JWPCP West and Royal Palms shaft sites would be expected to generate negligible traffic, limited to a few trips per month for normal inspections and maintenance. Based on the CMP impact criteria summarized in Section 18.4.1, impacts would be less than significant.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure. With respect to the Corps' NEPA scope of analysis described in Section 3.5, the environmental impacts would be considered indirect impacts.

CEQA Impact Determination

Construction and operation of Alternative 4 (Project) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts under CEQA would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts
Impacts would be less than significant.

NEPA Impact Determination
Construction and operation of Alternative 4 (Project) would not conflict with an applicable congestion management program, including but not limited to LOS standards established by the county congestion management agency for designated roads or highways. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact TRT-4. Would Alternative 4 (Project) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Tunnel Alignment – Figueroa/Western to Royal Palms (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. No additional trips to the surrounding roadway network as a result of the tunnel alignment are anticipated during operation. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Site – Royal Palms

Construction

CEQA Analysis
Because all construction activities would be located on the Royal Palms shaft site, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would be located on the Royal Palms shaft site, no changes to the existing roadway network or any public rights-of-way would occur. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination
Construction and operation of Alternative 4 (Project) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). There would be no impacts under CEQA.

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

NEPA Impact Determination
Construction and operation of Alternative 4 (Project) would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

Impact TRT-5. Would Alternative 4 (Project) result in inadequate emergency access?

Tunnel Alignment – Figueroa/Western to Royal Palms (Onshore)

Construction

CEQA Analysis
All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Site – Royal Palms

Construction

CEQA Analysis
Because all construction activities would be located on the Royal Palms shaft site, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would be located on the Royal Palms shaft site, emergency access would not be obstructed. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 4 (Project) would not result in inadequate emergency access. There would be no impacts under CEQA.

Mitigation

No mitigation is required.

Residual Impacts

No impacts would occur.

NEPA Impact Determination

Construction and operation of Alternative 4 (Project) would not result in inadequate emergency access. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation

No mitigation is required.

Residual Impacts

No impacts would occur.

Impact TRT-6. Would Alternative 4 (Project) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?

Tunnel Alignment – Figueroa/Western to Royal Palms (Onshore)

Construction

CEQA Analysis

All traffic associated with the removal of excavated material would occur at the shaft sites and will be discussed under the affected locations. Construction of the tunnel alignment would result in no impacts as discussed under the analysis for the shaft sites.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis

All impacts associated with operation of the tunnel would occur at the shaft sites and will be discussed under the affected locations. Because all operation and maintenance activities would occur underground, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Shaft Site – Royal Palms

Construction

CEQA Analysis
Because all construction activities would be located on the Royal Palms shaft site, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Pedestrian and bicycle access to the adjacent Royal Palms State Beach would be maintained. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

Operation

CEQA Analysis
Because all operation and maintenance activities would be located on the Royal Palms shaft site, no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Therefore, there would be no impacts.

NEPA Analysis
Environmental impacts would be the same as described for the CEQA analysis. There would be no impacts under NEPA.

CEQA Impact Determination
Construction and operation of Alternative 4 (Project) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities. There would be no impacts under CEQA.

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

NEPA Impact Determination
Construction and operation of Alternative 4 (Project) would not conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities. There would be no impacts under NEPA with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation
No mitigation is required.

Residual Impacts
No impacts would occur.

18.4.6.3 Impact Summary – Alternative 4

Impacts on terrestrial transportation and traffic, which are the same as Alternative 1 (Program), are summarized in Table 18-19. Impacts analyzed in this EIR/EIS for Alternative 4 (Project) are summarized in Table 18-35. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 18-35. Impact Summary – Alternative 4 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact TRT-1. Would Alternative 4 (Project) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?				
Tunnel Alignment				
Figueroa/ Western to Royal Palms (Onshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Royal Palms	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation

Table 18-35 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-2. Would Alternative 4 (Project) conflict with an applicable congestion management program, including but not limited to level of service standards established by the county congestion management agency for designated roads or highways?				
Tunnel Alignment				
Figueroa/ Western to Royal Palms (Onshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation

Table 18-35 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Royal Palms	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Operation
	NEPA Less Than Significant Impact During Operation	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Operation
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-4. Would Alternative 4 (Project) substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				
Tunnel Alignment				
Figueroa/ Western to Royal Palms (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation

Table 18-35 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Royal Palms	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-5. Would Alternative 4 (Project) result in inadequate emergency access?				
Tunnel Alignment				
Figueroa/ Western to Royal Palms (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation

Table 18-35 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Royal Palms	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Impact TRT-6. Would Alternative 4 (Project) conflict with adopted policies, plans, or programs regarding public transit, bikeways, or pedestrian facilities, or otherwise substantially decreases the performance of safety of such facilities?				
Tunnel Alignment				
Figueroa/ Western to Royal Palms (Onshore)	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Shaft Site				
JWPCP West	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation

Table 18-35 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Royal Palms	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA No Impact During Construction	N/A	No mitigation is required.	CEQA No Impact During Construction
	NEPA No Impact During Construction	N/A	No mitigation is required.	NEPA No Impact During Construction
	CEQA No Impact During Operation	N/A	No mitigation is required.	CEQA No Impact During Operation
	NEPA No Impact During Operation	N/A	No mitigation is required.	NEPA No Impact During Operation

18.4.7 Alternative 5 (No-Project Alternative)

Pursuant to CEQA, an EIR must evaluate a no-project alternative. A no-project alternative describes the no-build scenario and what reasonably would be expected to occur in the foreseeable future if the project were not approved. Under the No-Project Alternative for the Clearwater Program, the Sanitation Districts would continue to expand, upgrade, and operate the Joint Outfall System (JOS) in accordance with the JOS 2010 Master Facilities Plan (2010 Plan) (Sanitation Districts 1994), which includes all program elements proposed under the Clearwater Program, excluding process optimization at the WRPs, as described in Section 3.4.1.5. A new or modified ocean discharge system would not be constructed. As a result, there would be a greater potential for an emergency discharge into various water courses, as described in Section 3.4.1.5.

Because there would be no construction of a new or modified JWPCP ocean discharge system, the Corps would not make any significance determinations under NEPA and would not issue any permits or discretionary approvals for dredge or fill actions or for transport or ocean disposal of dredged material.

18.4.7.1 Program

Alternative 5 (Program) would consist of the implementation of the 2010 Plan. The impacts for conveyance improvements, plant expansion at the SJCWRP, WRP effluent management, JWPCP solids processing, and JWPCP biosolids management for Alternative 5 (Program) would be the same as for

Alternative 1 (Program) and would be subject to mitigation in accordance with the EIR prepared for the 2010 Plan (Jones & Stokes 1994).

18.4.7.2 Project

Alternative 5 does not include a project; therefore, a new or modified ocean discharge system would not be constructed. As a consequence of taking no action, there would be a greater potential for emergency discharges into various water courses, as described in Section 3.4.1.5. The emergency discharges would not result in any significant project-level impacts on terrestrial transportation and traffic. Additionally, because no construction would occur under this alternative, there would be no construction impacts as a result of Alternative 5 (Project). Operation would remain as it is under existing conditions and, therefore, would result in no additional trips to the surrounding transportation system, nor would any changes to the existing roadway network or any public rights-of-way occur. Alternative 5 (Project) would not result in any changes to emergency access, and no bicycle or pedestrian facilities accessible to the public and no public transit stops would be affected. Alternative 5 (Project) would result in no impacts under Impacts TRT-1 through TRT-6.

18.4.7.3 Impact Summary – Alternative 5

Impacts on terrestrial transportation and traffic for Alternative 5 (Program) would be the same as those summarized for Alternative 1 (Program) in Table 18-19, excluding process optimization. Note that the mitigation measures for Alternatives 1 through 4 (Program) are not applicable to Alternative 5 (Program). There would be no impacts for Alternative 5 (Project).

18.4.8 Alternative 6 (No-Federal-Action Alternative)

Pursuant to NEPA, an environmental impact statement (EIS) must evaluate a no-federal-action alternative. The No-Federal-Action Alternative for the Clearwater Program consists of the activities that the Sanitation Districts would perform without the issuance of the Corps' permits. The Corps' permits would be required for the construction of the offshore tunnel, construction of the riser and diffuser, the rehabilitation of the existing ocean outfalls, and the ocean disposal of dredged material. Without a Corps permit to work on the aforementioned facilities, the Sanitation Districts would not construct the onshore tunnel and shaft sites. Therefore, none of the project elements would be constructed under the No-Federal-Action Alternative. The Sanitation Districts would continue to use the existing ocean discharge system, which could result in emergency discharges into various water courses, as described in Sections 3.4.1.6 and 18.4.7.2. The program elements for the recommended alternative would be implemented in accordance with CEQA requirements. However, based on the NEPA scope of analysis established in Sections 1.4.2 and 3.5, these elements would not be subject to NEPA because the Corps would not make any significance determinations and would not issue any permits or discretionary approvals.

18.4.8.1 Program

The program elements are beyond the NEPA scope of analysis.

18.4.8.2 Project

The impact analysis for Alternative 6 (Project) is the same as described for Alternative 5 (Project).

18.4.8.3 Impact Summary – Alternative 6

The program is not analyzed under Alternative 6. Impacts for Alternative 6 would be the same as discussed under Alternative 5 (Project); therefore, there would be no impacts on terrestrial transportation and traffic for Alternative 6.

18.4.9 Comparison of Significant Impacts and Mitigation for All Alternatives

A summary of significant impacts on terrestrial transportation and traffic resulting from the construction and/or operation of program and/or project elements is provided in Table 18-36. Impacts are compared by alternative. Proposed mitigation, where feasible, and the significance of the impact following mitigation under CEQA and NEPA are also listed in the table.

Table 18-36. Comparison of Significant Impacts and Mitigation for Terrestrial Transportation and Traffic for All Alternatives

Element	Impact Before Mitigation	Mitigation Measure	Residual Impact After Mitigation
Alternatives 1, 2, 3, 4, and 5[a] (Program)			
Impact TRT-1. Would Alternative 1 (Program) conflict with an applicable plan, ordinance, or policy establishing a measure of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant elements of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			
SJCWRP – Plant Expansion and Process Optimization; POWRP, LCWRP, LBWRP – Process Optimization; JWPCP – Solids Processing	CEQA Significant Impact During Construction	MM TRT-1. Prepare and implement a construction traffic management plan. The plan will be submitted to the appropriate local agency for review and approval prior to the start of any construction work. This plan will include such elements as the project schedule, the designation of haul routes for construction-related trucks, the location of access to the construction site, designated staging and parking areas for workers and equipment, any driveway turning movement restrictions, any temporary traffic control devices or flagmen, and any travel time restrictions for construction-related traffic to avoid peak travel periods on selected roadways.	CEQA Less Than Significant Impact During Construction

[a] Process optimization would not apply to Alternative 5 (Program). Additionally, all mitigation measures and residual impacts would not apply to Alternative 5 (Program).