Chapter 5
AIR QUALITY

5.1 Introduction

This chapter describes the existing setting for ambient air quality, discusses the applicable air quality regulations, analyzes the potential air quality impacts that would result from the construction and operation of the program and project elements, and determines the significance of those impacts. Where feasible, mitigation measures are proposed to reduce these impacts.

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 impact analysis for each program element is summarized by alternative in Table 5-1.

Table 5-1. 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	-
SJCWRP								
Plant Expansion	X	X	X	X	X	N/A	-	C,O
Process Optimization	X	X	X	X	N/A	N/A	-	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
WRP Effluent Management	X	X	X	X	X	N/A	O	-
LCWRP								
Process Optimization	X	X	X	X	N/A	N/A	-	C,O
WRP Effluent Management	X	X	X	X	X	N/A	O	-
LBWRP								
Process Optimization	X	X	X	X	N/A	N/A	-	C,O
WRP Effluent Management	X	X	X	X	X	N/A	O	-

Table 5-1 (Continued)

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

WRP effluent management and biosolids management do not include construction.
[a] See Section 5.4.7 for a discussion of the No-Project Alternative.
[b] See Section 5.4.8 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 carried forward as a project. The location of the air quality impact analysis for each project element is summarized by alternative in Table 5-2.

Table 5-2. Impact Analysis Location of Project Elements by Alternative

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

Table 5-2 (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
PV Shelf		X	X		N/A	N/A	-	C,O
Existing Ocean Outfalls	X	X	X	X	N/A	N/A	-	C,O

[a] See Section 5.4.7 for a discussion of the No-Project Alternative.
[b] See Section 5.4.8 for a discussion of the No-Federal-Action Alternative.
PSA = Preliminary Screening Analysis
C = construction
O = operation

5.2 Environmental Setting

5.2.1 Regional Setting

With the exception of biosolids management, all program elements would occur within the Joint Outfall System (JOS) service area. The JOS service area is located in the South Coast Air Basin (SCAB), and it includes the JWPCP and six inland water reclamation plants (WRPs). The SCAB consists of the nondesert portions of Los Angeles, Riverside, and San Bernardino Counties and all of Orange County. The air basin covers an area of approximately 6,745 square miles and is bound on the west by the Pacific Ocean; on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains; and on the south by the San Diego County line.

Project elements would be constructed and operated within the SCAB. Depending on the tunnel alignment, onshore project elements would be located between the city of Carson and the Port of Los Angeles, San Pedro, or the Palos Verdes peninsula. As described in Chapter 3, onshore project elements include a tunnel and shaft sites (working, access, and/or exit). Offshore project elements include a tunnel, the existing ocean outfalls, and a riser and diffuser.

Biosolids from the JWPCP would be trucked to other air basins for beneficial reuse applications, such as the San Diego Air Basin (SDAB), the Salton Sea Air Basin (SSAB), and the San Joaquin Valley Air Basin (SJVAB).

5.2.2 Climate and Meteorological Conditions

The SCAB lies within the semipermanent high-pressure zone of the eastern Pacific Ocean. The climate of the region is classified as Mediterranean; the climate is generally characterized by warm, dry summers and mild winters with moderate rainfall. Prevailing daily winds in the region are westerly, with a nighttime return flow. This pattern is typically broken five to ten days a year when strong northeasterly winds, commonly known as "Santa Ana Winds," sweep down from the desert.

The SCAB's climate and topography are conducive to the formation of ozone (O_3). The heaviest concentrations of O_3 occur during the summer months when there are warm temperatures, stagnant wind conditions, high solar radiation, and an inversion layer at lower elevations. An inversion layer forms when cooler, denser air is trapped by warmer, lighter air. Sea breezes transport air pollutants to adjacent air basins, such as the Mojave Desert Air Basin and the SSAB. Carbon monoxide (CO) concentrations are highest during the winter, when relatively stagnant air conditions result in an accumulation of this

pollutant. Highest CO concentrations are found near heavily traveled and congested roadways. However, in the case of particulate matter, maximum concentrations may occur during high wind events or near man-made ground-disturbing activities, such as vehicular activities on roads and earth moving during construction activities.

5.2.3 Regional and Localized Air Quality

5.2.3.1 Criteria Pollutants

Air quality is a function of the level of pollution that exists at a given location. Depending on the concentration of these pollutants, public health and welfare can be adversely affected. The United States (U.S.) Environmental Protection Agency (EPA) has set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. These criteria pollutants are O_3, CO, nitrogen dioxide (NO_2), particulate matter less than 10 microns (μm) in diameter (PM_{10}), particulate matter less than 2.5 μm in diameter ($PM_{2.5}$), lead, and sulfur dioxide (SO_2). The NAAQS are expressed in terms of parts per million (ppm) by volume or in micrograms per cubic meter ($\mu g/m^3$) of air. California also established ambient air quality standards for criteria pollutants, which are, for the most part, more stringent than the federal standards.

The state and federal ambient air quality standards and the known adverse health effects associated with these criteria pollutants are shown in Table 5-3.

Table 5-3. Ambient Air Quality Standards and Adverse Effects Associated With the Criteria Pollutants

Pollutant	State Standard[a] (Concentration/ Averaging Time)	Federal Primary Standard[b] (Concentration/ Averaging Time)	Adverse Effects
O_3	0.09 ppm (1-hour average) 0.070 ppm (8-hour average)	0.075 ppm (8-hour average)	(a) Pulmonary function decrements and localized lung edema in humans and animals; (b) risk to public health implied by alterations in pulmonary morphology and host defense in animals; (c) increased mortality risk; (d) risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (e) vegetation damage; and (f) property damage.[c]
CO	9.0 ppm (8-hour average) 20 ppm (1-hour average)	9 ppm (8-hour average) 35 ppm (1-hour average)	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) impairment of central nervous system functions; and (d) possible increased risk to fetuses.[c]
NO_2	0.18 ppm (1-hour average) 0.030 ppm (annual average)	0.100 ppm (1-hour average) 0.053 ppm (annual average)	(a) Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; and (c) contribution to atmospheric discoloration.[c]
SO_2	0.04 ppm (24-hour average) 0.25 ppm (1-hour average)	0.03 ppm (annual arithmetic mean) 0.05 ppm (3-hour average) 0.14 ppm (24-hour) 0.075 ppm (1-hour average)	(a) Broncho-constriction accompanied by symptoms that may include wheezing, shortness of breath, and chest tightness during exercise or physical activity in persons with asthma.[c]

Table 5-3 (Continued)

Pollutant	State Standard[a] (Concentration/ Averaging Time)	Federal Primary Standard[b] (Concentration/ Averaging Time)	Adverse Effects
PM_{10}	20 µg/m^3 (annual arithmetic mean) 50 µg/m^3 (24-hour average)	150 µg/m^3 (24-hour average)	(a) Excess deaths from short-term and long-term exposures; (b) excess seasonal declines in pulmonary function, especially in children; (c) asthma exacerbation and possibly induction; (d) adverse birth outcomes including low birth weight; (e) increased infant mortality; (f) increased respiratory symptoms in children such as cough and bronchitis; and (g) increased hospitalization for both cardiovascular and respiratory disease (including asthma).[c]
$PM_{2.5}$	12 µg/m^3 (annual arithmetic mean)	15 µg/m^3 (annual arithmetic mean) 35 µg/m^3 (24-hour average)	
Lead	1.5 µg/m^3 (30-day average)	1.5 µg/m^3 (quarterly average) 0.15 µg/m^3 (rolling 3-month average)	(a) Learning disabilities; (b) impairment of blood formation and nerve conduction.[c]
Sulfates	25 µg/m^3 (24-hour average)	N/A	(a) Decrease in ventilatory function; (b) aggravation of asthmatic symptoms; (c) aggravation of cardiopulmonary disease; (d) vegetation damage; (e) degradation of visibility; and (f) property damage.[c]
Hydrogen Sulfide	0.03 ppm (1-hr average)	N/A	Odor annoyance above 10 ppm; irritant and toxic inhalant above 50 ppm; immediately dangerous to life and health above 300 ppm.[d]

Lead emissions were not evaluated in this assessment. Lead is not a chemical of concern for activities associated with the program and project.

CAAQSs have also been established for vinyl chloride and visibility reducing particles. They are not shown in this table because they are not pollutants of concern for the program or project.

A CAAQS of 0.03 ppm has been established for hydrogen sulfide. Hydrogen sulfide is associated with temporary nuisance odors from municipal wastewater systems. The Sanitation Districts maintain comprehensive odor control systems at all facilities and use chemical treatment programs to minimize odors from wastewater conveyance systems (see Sections 5.4.1.2 and 5.4.1.3). Additionally, the Sanitation Districts have a community relations program in place to help determine the source of any offsite odors. This includes a 24-hour odor complaint hotline where complaints are immediately responded to by staff.

California standards for O_3, CO, SO_2, NO_2, and suspended particulate matter (PM_{10} and $PM_{2.5}$) are values that are not to be exceeded. All others are not to be equaled or exceeded.

National standards (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The O_3 standard is attained when the fourth highest 8-hour concentration in 1 year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[a] Source: CARB 2010a

[b] Source: EPA 2010a

[c] Source: SCAQMD 2007a:Table 2-1

[d] Source: OSHA 2011

N/A = not applicable

Of the criteria pollutants of concern, O_3 is unique because it is not directly emitted from project-related sources. Rather, O_3 is a secondary pollutant, formed from the precursor pollutants volatile organic compounds (VOC) and nitrogen oxides (NO_X). VOC and NO_X react to form O_3 in the presence of sunlight through a complex series of photochemical reactions. As a result, unlike inert pollutants, O_3 levels usually peak several hours after the precursors are emitted and many miles downwind of the source. Because of the complexity and uncertainty in predicting photochemical pollutant concentrations, O_3 impacts are assessed indirectly by comparing VOC and NO_X emissions to the daily emission thresholds set by the South Coast Air Quality Management District (SCAQMD). These emission thresholds are discussed in Section 5.4.2.

5.2.3.2 Toxic Air Contaminants

Toxic air contaminants (TACs) are non-criteria pollutants that can result in adverse human health effects, including carcinogenic effects, after short-term (acute) or long-term (chronic) exposure. The California Office of Environmental Health Hazard Assessment provides toxicity information on TACs, which, in turn, is used by air districts in estimating the carcinogenic and other risks posed by stationary sources.

According to SCAQMD's Multiple Air Toxics Exposure Study (MATES) III study (SCAQMD 2008a) on TACs, diesel particulate matter (DPM) accounts for approximately 84 percent of the total carcinogenic risk in the SCAB. The MATES III study (SCAQMD 2008a) also found that the carcinogenic risk posed by TACs is very high for areas surrounding the Port of Los Angeles (SCAQMD 2008a). In recognition of the carcinogenic risk identified in the MATES III study, the Sanitation Districts of Los Angeles County (Sanitation Districts) will go beyond the existing requirements and use, where feasible, the cleanest EPA Tier diesel engine commercially available in the SCAB at the start of construction for work in the Port of Los Angeles.

5.2.3.3 Secondary $PM_{2.5}$ Formation

Within the SCAB, $PM_{2.5}$ particles are directly emitted into the atmosphere (i.e., primary particles) and are formed through atmospheric chemical reactions from precursor gases (i.e., secondary particles). Primary $PM_{2.5}$ includes diesel soot, combustion products, road dust, and other fine particles. Secondary $PM_{2.5}$ is formed from reactions with directly emitted NO_X, sulfur oxides (SO_X), VOCs, and ammonia some distance downwind of the emission sources. However, the air quality analysis in this EIR/EIS focuses on the effects of direct $PM_{2.5}$ emissions and their ambient impacts. This approach is consistent with the recommendations of the SCAQMD (SCAQMD 2006).

5.2.3.4 Ambient Air Monitoring Stations

All program and project elements would be located within the SCAB. The SCAQMD maintains a network of pollutant monitoring stations throughout the SCAB and the Los Angeles Harbor Department (LAHD) maintains similar stations within and in the vicinity of the Port of Los Angeles as shown in Figure 5-1. These monitoring stations collect real-time measurements of ambient-level pollutants. The data generated are used to define the nature and severity of pollution, determine which areas of Southern California are in attainment or nonattainment, identify pollution trends in the region, and develop air models and emission inventories.

Certain project elements could be located within the Port of Los Angeles, depending on the alternative selected and built. The LAHD has conducted an air quality monitoring program since February 2005. The main objective of the program is to estimate ambient levels of DPM near the Port of Los Angeles. The secondary objective of the program is to estimate ambient particulate matter (PM) levels within adjacent communities due to port emissions. To achieve these objectives, the program measures ambient concentrations of PM_{10}, $PM_{2.5}$, and elemental carbon $PM_{2.5}$ (which indicates fossil fuel combustion sources) at four locations in the port vicinity. SCAQMD air quality monitoring station locations in the Sanitation Districts' service area and near the project vicinity and pollutant concentrations over a 3-year period are shown in Table 5-4. Peak concentrations for 2008 at the LAHD air quality monitoring stations (see Figure 5-1) are shown in Table 5-5.

It is important to note that there are no thresholds, standards, limitations, or requirements triggered by the ambient air monitoring in the Port of Los Angeles. The SCAQMD has regulatory jurisdiction over the Port of Los Angeles.

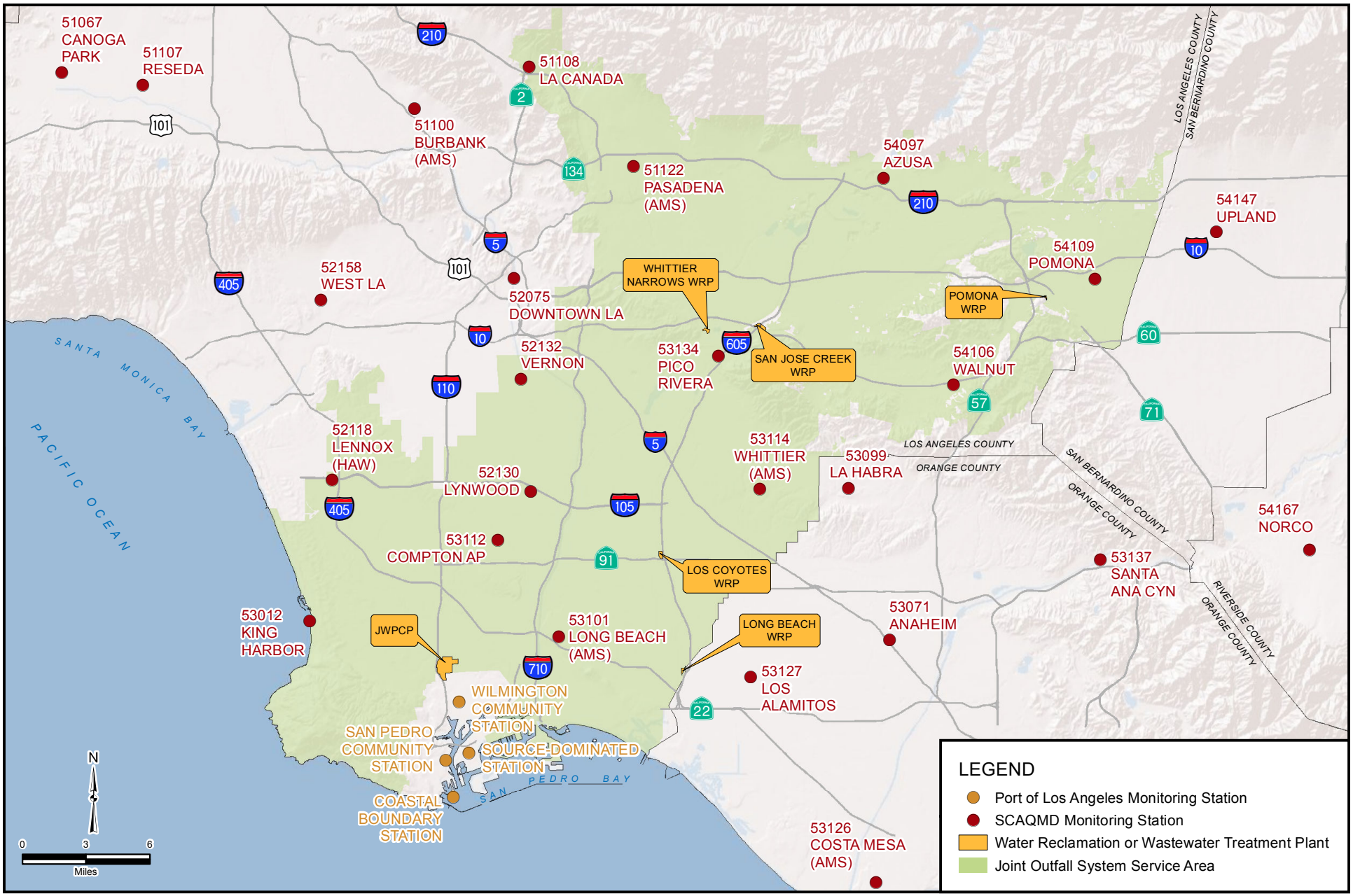

FIGURE 5-1

CLEARWATER Program

Air Quality Monitoring Stations in Southern California

Source: Sanitation Districts of Los Angeles County 2011, ESRI 2011, Port of Los Angeles 2011, SCAQMD 2011, Thomas Bros 2011

Table 5-4. Peak 3-Year Pollutant Concentrations at Air Quality Monitoring Stations in the Program and Project Vicinity

Pollutant	Averaging Period	National Standard	State Standard	Stations Near Program Elements			Stations Near Project Elements
				Pico Rivera[a]	Azusa[b]	Pomona[c]	North Long Beach[d]
2007							
O_3 (ppm)	1 hour	N/A	0.09[g]	0.135	0.158	0.153	0.099
	8 hours	0.084	0.070	**0.100**	**0.112**	**0.108**	**0.073**
CO (ppm)	1 hour	35	20	5	3	3	3
	8 hours	9	9.0	2.9	1.8	2.0	2.6
NO_2 (ppm)	1 hour	0.100[e,g]	0.25	0.11	0.12	0.10	0.11
	annual	0.053	N/A	0.025	0.025	0.032	0.021
SO_2 (ppm)	1 hour	0.075[f,g]	0.25	N/A	N/A	N/A	0.11
	24 hours	0.14	0.04	N/A	N/A	N/A	0.011
	annual	0.03	N/A	N/A	N/A	N/A	0.0027
PM_{10} ($\mu g/m^3$)	24 hours	150[g]	50[g]	N/A	83	N/A	75
	annual	N/A	20	N/A	**35.6**	N/A	**30.2**
$PM_{2.5}$ ($\mu g/m^3$)	24 hours	35[g]	N/A	63.6	63.8	N/A	82.9
	annual	15	12	**16.7**	**15.9**	N/A	**14.6**
2008							
O_3 (ppm)	1 hour	N/A	0.09[g]	0.107	0.135	0.141	0.093
	8 hours	0.075	0.070	**0.093**	**0.111**	**0.111**	**0.074**
CO (ppm)	1 hour	35	20	3	2	3	3
	8 hours	9	9.0	2.1	1.6	2.0	2.6
NO_2 (ppm)	1 hour	0.100[e,g]	0.18	0.10	0.10	0.11	0.13
	annual	0.053	0.030	0.026	0.023	0.030	0.021
SO_2 (ppm)	1 hour	0.075[f]	0.25	N/A	N/A	N/A	0.09
	24 hours	0.14	0.04	N/A	N/A	N/A	0.012
	annual	0.03	N/A	N/A	N/A	N/A	0.0022
PM_{10} ($\mu g/m^3$)	24 hours	150[g]	50[g]	N/A	98	N/A	62
	annual	N/A	20	N/A	**35.3**	N/A	**29.1**
$PM_{2.5}$ ($\mu g/m^3$)	24 hours	35[g]	N/A	47.3	53.1	N/A	57.2
	annual	15	12	15.0	14.1	N/A	14.2
2009							
O_3 (ppm)	1 hour	N/A	0.09[g]	0.131	0.150	0.138	0.089
	8 hours	0.075	0.070	**0.101**	**0.107**	**0.099**	0.068
CO (ppm)	1 hour	35	20	3	3	3	3
	8 hours	9	9.0	2.1	1.7	1.8	2.2
NO_2 (ppm)	1 hour	0.100[e,g]	0.18	0.10	0.10	0.1	0.11
	annual	0.053	0.030	0.026	0.019	0.027	0.021

Table 5-4 (Continued)

Pollutant	Averaging Period	National Standard	State Standard	Stations Near Program Elements: Pico Rivera[a]	Stations Near Program Elements: Azusa[b]	Stations Near Program Elements: Pomona[c]	Stations Near Project Elements: North Long Beach[d]
SO_2 (ppm)	1 hour	0.075[f]	0.25	N/A	N/A	N/A	0.02
	24 hours	0.14	0.04	N/A	N/A	N/A	0.05
PM_{10} ($\mu g/m^3$)	24 hours	150[g]	50[g]	N/A	74	N/A	62
	annual	N/A	20	N/A	**32**	N/A	**30.5**
$PM_{2.5}$ ($\mu g/m^3$)	24 hours	35[g]	N/A	71.1	72.1	N/A	63.4
	annual	15	12	**14.8**	**12.8**	N/A	**13.0**

The years 2007–2009 represent the latest available monitoring data for SCAQMD monitoring stations.

Exceedances of the standards are highlighted in **bold**.

[a] Pico Rivera (ARB Station No.70185) is representative of the ambient air quality at the LCWRP. The station is located 9 miles from the LCWRP.

[b] Azusa (ARB Station No.70060) is representative of the ambient air quality at the SJCWRP. The station is located 9 miles from the SJCWRP.

[c] Pomona (ARB Station No.70075) is representative of the ambient air quality at the POWRP. The station is located 2.5 miles from the POWRP.

[d] North Long Beach (ARB Station No.70072) is also representative of the ambient air quality at the JWPCP and LBWRP; station is located near the Ports of Long Beach and Los Angeles. The station is located 5 miles from the JWPCP and 6 miles from the LBWRP.

[e] EPA has established a new NO_2 1-hour standard of 100 ppb (0.100 ppm), effective April 7, 2010.

[f] EPA has revised the federal standard by establishing a new SO_2 1-hour standard of 0.075 ppm and revoking the existing annual (0.03 ppm) and 24-hour (0.14 ppm) SO_2 standards, effective August 2, 2010.

[g] Current standard as of 2010; standard information in 2007–2009 was not available. Exceedances are not compared to this 2010 standard.

N/A = not applicable; pollutants not monitored at these stations

Source: SCAQMD 2011a

Table 5-5. Peak Pollutant Concentrations for 2008 at Port of Los Angeles Air Quality Monitoring Stations

Pollutant	Averaging Period	Port of Los Angeles Monitoring Stations: Wilmington Community Station	Coastal Boundary Station	San Pedro Station	Source-Dominated Station
PM_{10} ($\mu g/m^3$)	24 hours	30.6	24.0	N/A	N/A
	12-month average	25.8	N/A	N/A	N/A
$PM_{2.5}$ ($\mu g/m^3$)	24 hours	12.0	11.4	14.9	14.2
	12-month average	9.1	9.1	11.3	11.2
Elemental carbon $PM_{2.5}$ ($\mu g/m^3$)	24 hours	1.7	1.7	2.0	3.0
	12-month average	0.9	0.8	1.2	1.9

N/A = not applicable; PM_{10} is not measured at the San Pedro or Source-Dominated Stations. PM_{10} was not measured at the Coastal Boundary Station in 2008.

Source: LAHD 2010

5.2.3.5 Prevailing Winds

Winds can affect the dispersion of odors and emissions. Data from nearby meteorological stations were used to identify the prevailing wind direction at each of the WRPs and the JWPCP. The data is presented in the form of a wind rose, which shows speed and direction on the same graph. Meteorological stations were chosen based on their proximity to the project sites. It is important to note that meteorological stations are different than monitoring stations discussed in Section 5.2.3.4. Whereas monitoring stations gather ambient pollutant information, meteorological stations gather information such as wind direction, wind speed, etc. Monitoring and meteorological stations are often, but not always, located in the same geographical vicinity. The wind rose from the Pomona meteorological station, shown in Figure 5-2, was used to represent wind patterns at the Pomona Water Reclamation Plant (POWRP) and the San Jose Creek Water Reclamation Plant (SJCWRP) because of the proximity of these facilities to one another. The wind rose from the Lynwood meteorological station, shown in Figure 5-3, was used to represent wind patterns at the Los Coyotes Water Reclamation Plant (LCWRP). Based on the proximity of both the JWPCP and the Long Beach Water Reclamation Plant (LBWRP) to each other, the wind rose from the Long Beach meteorological station (Figure 5-4) was used to represent wind patterns at both the JWPCP and the LBWRP.

The predominant wind direction and speed at the three stations is as follows: at the Pomona station, from the northwest-west at 3.87 feet per second (ft/s) (1.18 meters per second [m/s]); at the Lynwood station, from the west-southwest at 3.80 ft/s (1.16 m/s); and at the Long Beach station, from the west at 6.03 ft/s (1.84 m/s).

5.2.3.6 Sensitive Receptors

The impact of air emissions on sensitive members of the population is a special concern. Sensitive members of the population include those that may be more negatively affected by poor air quality than other members of the population, such as children, the elderly, or the infirm. Schools, hospitals, and convalescent homes are considered sensitive land uses because children, the elderly, and the infirm are more susceptible to respiratory distress and other air-quality-related health problems than the general public.

5.2.4 Program Setting

The program elements described in Chapter 3, as they pertain to air quality considerations, are summarized in Table 5-6. The potential emissions sources that could result from the program elements, and the methodology in which they are analyzed, are further discussed in Section 5.4.1.

Table 5-6. Summary of Program Elements

Program Element	Existing Condition	Proposed Changes
Water Reclamation Plants		
SJCWRP – Plant Expansion	Treatment of wastewater and nutrient removal with a NDN process	25 MGD expansion of treatment capacity
Process Optimization		Process optimization by installing a 15–35 MG flow equalization tank
POWRP – Process Optimization	Treatment of wastewater and nutrient removal with a NDN process	Process optimization by installing a 2–3 MG flow equalization tank
LCWRP – Process Optimization	Treatment of wastewater and nutrient removal with a NDN process	Process optimization by installing a 4–8 MG flow equalization tank

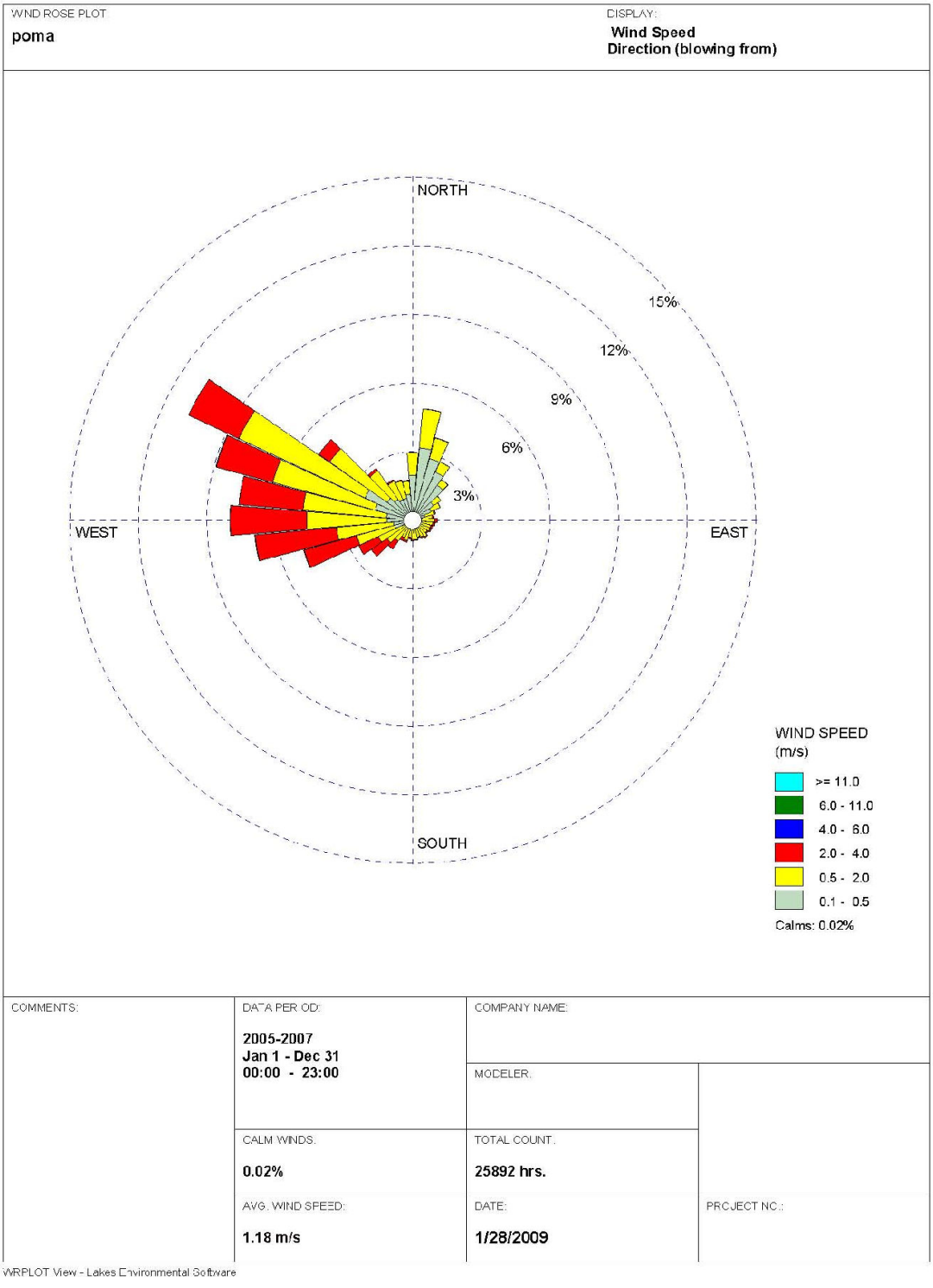

FIGURE 5-2

CLEARWATER Program

Prevailing Wind Direction at the Pomona Meteorological Station

Source: SCAQMD 2009d

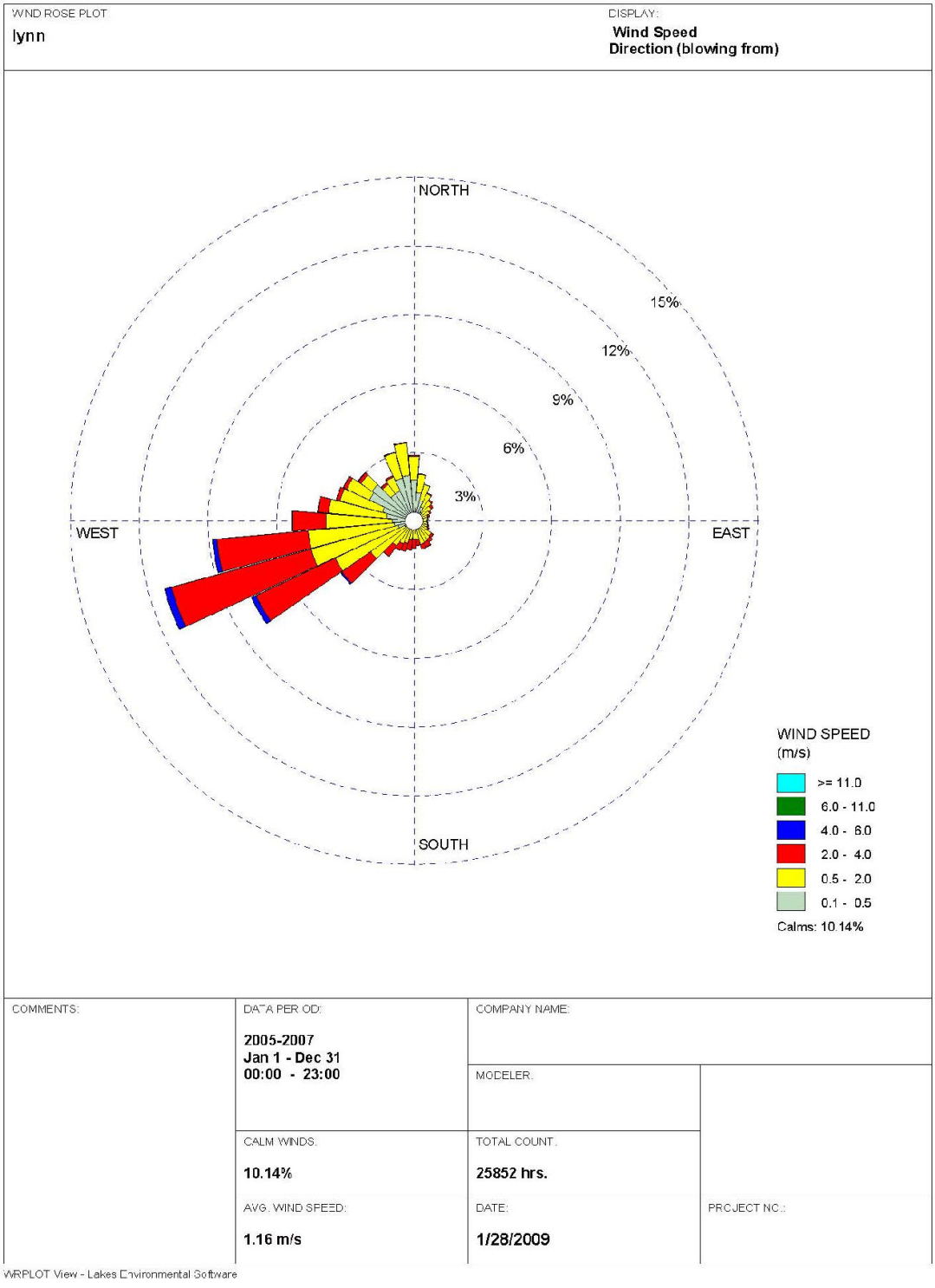

FIGURE 5-3

CLEARWATER Program

Prevailing Wind Direction at the Lynwood Meteorological Station

Source: SCAQMD 2009d

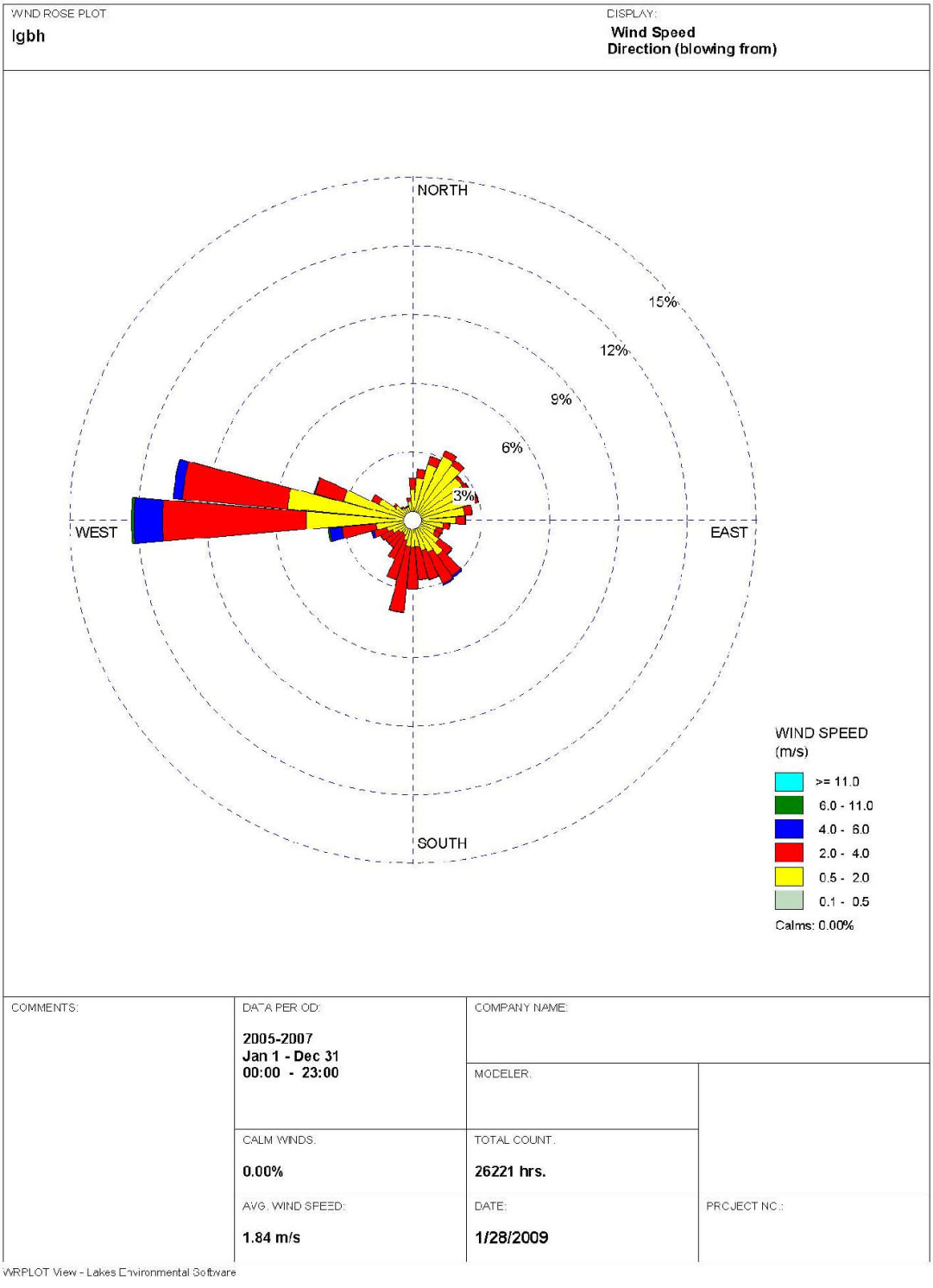

FIGURE 5-4

CLEARWATER Program

Prevailing Wind Direction at the Long Beach Meteorological Station

Source: SCAQMD 2009d

Table 5-6 (Continued)

Program Element	Existing Condition	Proposed Changes
Water Reclamation Plants		
LBWRP – Process Optimization	Treatment of wastewater and nutrient removal with a NDN process	Process optimization by installing a 3–5 MG flow equalization tank
Joint Water Pollution Control Plant		
Solids Processing	Consists of dissolved air flotation thickeners, anaerobic digesters, and centrifuges	6 new digesters
Biosolids Management	Hauling of treated and dewatered biosolids to remote locations for beneficial reuse applications	Additional 20 truck trips per day

NDN = nitrification/denitrification
MGD = million gallons per day
MG = million gallons

5.2.5 Project Setting

The proposed project elements are summarized in Table 5-7. The proposed project consists of the construction and operation of a new or modified ocean discharge system for secondary effluent from the JWPCP. Alternatives 1, 2, and 3 would include a tunnel, working and access shafts, and a riser and diffuser. Alternative 4 would include a tunnel, working and exit shafts, and use of the existing ocean outfalls. All the alternatives would include the rehabilitation of the existing ocean outfalls. The potential emissions sources that could result from the project elements, and the methodology in which they are analyzed, are further discussed in Section 5.4.1.

Table 5-7. Summary of Project Elements

Functional Category	Project Element	Construction Emission Sources
Alternative 1		
Tunnel Alignment	Wilmington to SP Shelf (Onshore and Offshore)	TBM is electric. No direct emissions Off-road construction equipment On-road heavy-duty vehicles Worker commute Fugitive dust Locomotive (small mining-type) to convey excavated material and personnel in rail cars
Shaft Site	JWPCP East TraPac LAXT Southwest Marine	Off-road construction equipment On-road heavy-duty vehicles Worker commute Fugitive dust Locomotive emissions during tunneling
Riser/Diffuser Area	SP Shelf	Tugboats, crewboats, and barges Off-road diesel equipment Worker commute
	Existing Ocean Outfalls	Tugboat and crewboats Worker commute

Table 5-7 (Continued)

Functional Category	Project Element	Construction Emission Sources
Alternative 2		
Tunnel Alignment	Wilmington to PV Shelf (Onshore and Offshore)	TBM is electric. No direct emissions Off-road construction equipment. On-road heavy-duty vehicles Worker commute Fugitive dust Locomotive (small mining-type) to convey excavated material in rail cars and personnel
Shaft Site	JWPCP East TraPac LAXT Southwest Marine	Off-road construction equipment On-road heavy-duty vehicles Worker commute Fugitive dust Locomotive emissions during tunnel
Riser/Diffuser Area	PV Shelf	Tugboats and crewboats Worker commute
	Existing Ocean Outfalls	Tugboat and crewboats Worker commute
Alternative 3		
Tunnel Alignment	Figueroa/Gaffey to PV Shelf (Onshore and Offshore)	TBM is electric. No direct emissions Off-road construction equipment On-road heavy-duty vehicles Worker commute Fugitive dust Locomotive (small mining-type) to convey excavated material in rail cars and personnel
Shaft Site	JWPCP West Angels Gate	Off-road construction equipment On-road heavy-duty vehicles Worker commute Fugitive dust Locomotive emissions during tunnel
Riser/Diffuser Area	PV Shelf	Tugboats, crewboats, and barges Off-road diesel equipment Worker commute
	Existing Ocean Outfalls	Tugboats and crewboats Worker commute
Alternative 4		
Tunnel Alignment	Figueroa/Western to Royal Palms (Onshore)	TBM is electric. No direct emissions Off-road construction equipment On-road heavy-duty vehicles Worker commute Fugitive dust Locomotive (small mining-type) to convey excavated material in rail cars and personnel
Shaft Site	JWPCP West Royal Palms	Off-road construction equipment On-road heavy-duty vehicles Worker commute Fugitive dust Locomotive emissions during tunnel
Riser/Diffuser Area	Existing Ocean Outfalls	Tugboats and crewboats Worker commute

TBM = tunnel boring machine

5.3 Regulatory Setting

The federal Clean Air Act (CAA) and its subsequent amendments established air quality regulations and the NAAQS, and delegated enforcement of these standards to the states. In California, the California Air Resources Board (CARB) is responsible for enforcing air pollution regulations. CARB has, in turn, delegated the responsibility of regulating stationary emission sources to the local air agencies. In the SCAB, the local regulatory air agency is the SCAQMD.

The following is a summary of the key federal, state, regional, and local air quality rules, policies, and agreements that apply to the program and project.

5.3.1 Federal

5.3.1.1 State Implementation Plan

The CAA requires that states prepare a state implementation plan that details how the federally designated nonattainment areas will achieve the NAAQS. In California, each air district prepares an air quality management plan (AQMP) to incorporate into the State Implementation Plan. SCAQMD developed the 2007 AQMP for inclusion into the State Implementation Plan.

The 2007 AQMP addresses several federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, updated ambient measurements, new meteorological episodes, and new air quality modeling tools. The 2007 AQMP builds upon the approaches taken in the 2003 AQMP for the SCAB for the attainment of federal air quality standards. The AQMP highlights the necessary reductions and the need to identify additional strategies, especially in the area of mobile sources, to meet federal criteria pollutant standards within the timeframes allowed under the federal CAA (SCAQMD 2007a).

The SCAQMD developed the 2007 AQMP in cooperation with the Southern California Association of Governments (SCAG), CARB, and EPA, particularly in demonstrating compliance with the new NAAQS for $PM_{2.5}$ and 8-hour O_3 and other planning requirements, including compliance with the NAAQS for PM_{10} (SCAQMD 2007a). The SCAG separately prepared a Regional Comprehensive Plan for the Southern California area. It includes chapters on Growth Management and Regional Mobility, which were the basis for air quality forecasts in the AQMP related to land use and transportation, and SCAQMD's consistency analysis.

5.3.1.2 Environmental Protection Agency Off-Road Diesel Engine Rule

To reduce emissions from off-road diesel equipment, the EPA established a series of increasingly strict emission standards for new engines. Locomotives and marine vessels are exempt from this rule. Manufacturers of off-road diesel engines would be required to produce engines with certain emission standards under the following compliance schedule:

- Tier 1 standards were phased in from 1996 to 2000 (year of manufacture), depending on the engine horsepower category.
- Tier 2 standards were phased in from 2001 to 2006.
- Tier 3 standards were phased in from 2006 to 2008.
- Tier 4 standards, which likely will require add-on emissions control equipment to attain them, will be phased in from 2008 to 2015.

The various EPA emission standards for new off-road engines are summarized in Table 5-8 (SCAQMD 2010a).

Table 5-8. EPA Emission Standards for Off-Road Engines

Tier	Emissions Standard 75–99 hp Engines (g/bhp-hr)	Emissions Standard 100–174 hp Engines (g/bhp-hr)	Emissions Standard 175–299 hp Engines (g/bhp-hr)	Emissions Standard 300–600 hp Engines (g/bhp-hr)
1				
NO_X	6.9	6.9	6.9	6.9
ROG	1.19	0.82	1	1
PM	0.552	0.304	0.4	0.4
2				
NO_X	5.32	4.655	4.655	4.56
ROG	0.28	0.245	0.245	0.24
PM	0.3	0.22	0.15	0.15
3				
NO_X	3.325	2.85	2.85	2.85
ROG	0.175	0.15	0.15	0.15
PM	0.3	0.22	0.15	0.15
4				
NO_X	0.3 (Final effective 1/1/15)[a]	0.3 (Final effective 1/1/15)[a]	0.3 (Final effective 1/1/15)[b]	0.3 (Final effective 1/1/15)[b]
ROG	0.14	0.14	0.14	0.14
PM	0.015	0.015	0.015	0.015

[a] Tier 4 interim NO_X standard of 2.5g/bhp-hr ends 12/31/14.
[b] Tier 4 interim NO_X standard of 1.5g/bhp-hr ends 12/31/14.
hp = horsepower
g/bhp-hr = grams per brake horsepower-hour
NO_X = nitrogen oxides
ROG = reactive organic gases
PM = particulate matter
Source: SCAQMD 2010a

5.3.1.3 Environmental Protection Agency On-Road Diesel Engine Rule

In 2007, the EPA promulgated the Heavy-Duty Highway Rule, which reduces emissions from on-road, heavy-duty diesel trucks by establishing a series of increasingly strict emission standards for new engines. Manufacturers are required to produce new diesel vehicles that meet PM and NO_X emission standards beginning with model year 2007.

5.3.1.4 Environmental Protection Agency Marine Diesel Engine Rule

For the purpose of emission regulations, marine engines are divided into three categories based on displacement per cylinder, as shown in Table 5-9. Each of the categories represents a different engine technology. Categories 1 and 2 are further divided into subcategories, depending on displacement and net power output.

Table 5-9. Marine Engine Categories

Category	Displacement per Cylinder (D)	Basic Engine Technology	Type of Vessels	Range in Engine Size
1	Subcategory 1–2: $D < 5\ dm^3$ and power > 37 kW Subcategory 3–4: $D < 7\ dm^3$	Land-based non-road diesel	Tugboats, pushboats, fishing vessels, commercial vessels in and around ports, and supply vessels	500 to 8,000 kW (700 to 11,000 hp)
2	Subcategory 1–2: $5\ dm^3 < D < 30\ dm^3$ Subcategory 3–4: $7\ dm^3 < D < 30\ dm^3$	Locomotive diesel	Same as above	500 to 8,000 kW (700 to 11,000 hp)
3	$D > 30\ dm^3$	Unique marine engine design	Container ships, oil tankers, bulk carriers, and cruise ships	2,500 to 70,000 kW (3,000 to 100,000 hp)

dm^3 = cubic decimeters
kW = kilowatts
Source: DieselNet 2011

Program elements would not use marine diesel engines. Project elements would utilize Category 1 or 2 marine diesel engines for in-water work. Category 3 vessels would not be used for the project elements.

On March 14, 2008, the EPA signed a regulation to introduce Tier 3 and Tier 4 emission standards to new or rebuilt Category 1 and Category 2 marine diesel engines. Tier 3 standards apply to new engines used in commercial, recreation, and auxiliary power applications beginning in 2009 for Category 1 engines and in 2013 for Category 2 engines. Tier 4 standards apply to new Category 1 and 2 engines above 600 kW on commercial vessels beginning in 2014. For remanufactured engines, standards apply only to commercial marine diesel engines above 600kW when the engines are remanufactured and as soon as certified systems are available.

5.3.1.5 Environmental Protection Agency Diesel Fuel Rule

This EPA rule limited the sulfur content in on-road diesel fuel to 15 ppm starting June 1, 2006 (EPA 2006a).

5.3.1.6 Conformity Rule

Section 176(c) of the CAA states that a federal agency cannot issue a permit for or support an activity unless the agency determines it would conform to the most recent EPA-approved State Implementation Plan. This means that projects using federal funds or requiring federal approval must not (1) cause or contribute to any new violation of a NAAQS, (2) increase the frequency or severity of any existing violation, or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone (EPA 2010b).

Based on the present NAAQS attainment status of the SCAB, a federal action would conform to the State Implementation Plan if its annual emissions remain below 100 tons of CO and $PM_{2.5}$, 70 tons of PM_{10}, and 10 tons of NO_X or VOCs (EPA 2010c). These de minimis thresholds apply to the proposed construction and operation activities pertaining to the federal action. If the proposed action exceeds one or more of the de minimis thresholds, a more rigorous conformity determination is the next step in the

conformity evaluation process. SCAQMD Rule 1901 adopts the guidelines of the General Conformity Rule. A comparison of the federal action to the de minimis thresholds is presented in Appendix 5-A.

5.3.2 State

5.3.2.1 California Clean Air Act

The California Clean Air Act of 1988, as amended in 1992, outlines a program to attain the CAAQS by the earliest practical date. Because the CAAQS are more stringent than the NAAQS, attainment of the CAAQS will require more emissions reductions than what would be required to show attainment of the NAAQS. Consequently, the main focus of attainment planning in California has shifted from the federal to state requirements. Similar to the federal system, the state requirements and compliance dates are based on the severity of the ambient air quality standard violation within a region.

5.3.2.2 Heavy-Duty Diesel Truck Idling Regulation

This CARB rule affected heavy-duty diesel trucks in California beginning in 2008. The rule requires that heavy-duty trucks be equipped with a non-programmable engine system that shuts down the engine after 5 minutes to prevent long idling times or, as an alternative, meet a stringent NO_X idling emission standard.

5.3.2.3 California Diesel Fuel Regulations

With this rule, CARB set sulfur limits of 15 ppm for diesel fuel sold in California for use in on-road and off-road motor vehicles. Harbor craft were originally excluded from the rule but were later included by a 2004 rule amendment.

5.3.2.4 Statewide Portable Equipment Registration Program

The Statewide Portable Equipment Registration Program (PERP) establishes a uniform program to regulate portable engines and portable engine-driven equipment units (CARB 2010b). Once registered in this program, engines and equipment units may operate throughout California without the need to obtain individual permits from local air districts. The portable equipment, however, cannot reside at the same location for more than 12 months. Some construction-related equipment may be registered under PERP. Equipment would not reside at the same location for more than 12 months.

5.3.2.5 On-Road Heavy-Duty Diesel Vehicles (In Use) Regulation

On December 12, 2008, CARB approved the on-road heavy-duty diesel vehicle (in use) regulation to significantly reduce PM and NO_X emissions from existing diesel vehicles operating in California. The regulation applies to nearly all diesel-fueled trucks and buses with a gross vehicle weight rating (GVWR) greater than 14,000 pounds that are privately or federally owned and for privately and publicly owned school buses.

Starting January 1, 2012, the regulation would phase-in requirements for heavier trucks to reduce PM emissions with exhaust retrofit filters that capture pollutants before they are emitted to the air or by replacing vehicles with newer vehicles that are originally equipped with PM filters. Starting on January 1, 2015, lighter trucks with a GVWR of 14,001 to 26,000 pounds with engines that are 20 years or older would need to be replaced with newer trucks. Starting January 1, 2020, all remaining trucks and buses would need to be replaced so that they would all have 2010 model year engines or equivalent

emissions by 2023. The CARB compliance timeline for vehicles with a GVWR of 14,001 to 26,000 pounds is shown in Table 5-10.

Table 5-10. CARB Compliance Schedule for Light-Duty Diesel Trucks and Buses with a GVWR of 14,001 to 26,000 Pounds

Engine Year Requiring Replacement	Compliance Date As of January 1	Replacement Engine Year
1995 and older	2015	2010 or newer
1996	2016	2010 or newer
1997	2017	2010 or newer
1998	2018	2010 or newer
1999	2019	2010 or newer
2000–2003	2020	2010 or newer
2004–2006	2021	2010 or newer
2007–2009	2023	2010 or newer

Source: CARB 2011a

Heavier trucks and buses with a GVWR greater than 26,000 pounds would have two ways to comply. Fleets could comply with a compliance schedule by engine model year or use a phase-in option where engine replacement could be delayed by installing a PM filter on the existing engine. The CARB compliance schedule for heavier trucks with a GVWR greater than 26,000 pounds is shown in Table 5-11. The compliance schedule overlaps with the construction timeline for program and project elements.

Table 5-11. CARB Compliance Schedule for Heavy-Duty Diesel Trucks and Buses with a GVWR greater than 26,000 Pounds

Engine Year Requiring Replacement	Compliance Date As of January 1	Replacement Engine Year
Pre-1994	2015	2010 or newer
1994–1995	2016	2010 or newer
1996–1999	2012 (2020)[a]	2010 or newer
2000–2004	2013 (2021)[a]	2010 or newer
2005–2006	2014 (2022)[a]	2010 or newer
2007–2009	2023	2010 or newer

[a] Installing a PM filter on 1996 model year and newer engines delays replacement by 8 years.
Source: CARB 2011a

5.3.2.6 Off-Road Diesel Fleet Regulation

On July 26, 2007, CARB adopted a regulation to reduce diesel PM and NO_X emissions from existing off-road heavy-duty vehicles in California. This regulation applies to off-road vehicles with a 25 horsepower engine or greater, such as loaders, crawler tractors, skid steers, backhoes, forklifts, and two-engine cranes. The regulation does not apply to stationary equipment or portable equipment, such as generators. The off-road performance requirements are applied to a fleet as a whole and not to individual vehicles, and are based on a fleet's average NO_X emissions. The goal of the regulation is to encourage fleet owners to replace a certain percentage of their diesel fleet over time with cleaner emitting vehicles in order to meet the lower annual NO_X limits. This CARB rule is applicable to the off-road diesel vehicles that would be used during the construction of the program and project elements.

The regulation was amended in December 2010 to provide a 4-year delay from the original compliance timeline for all fleets. By January of each year, starting in 2014, each fleet must meet the fleet average NO_X requirements or, as an alternative, a specified percentage of the fleet must be replaced with newer

engines. The percent turnover is referred to by CARB as best available control technology (BACT). The CARB compliance schedule for off-road diesel fleets is shown in Table 5-12.

Table 5-12. CARB Compliance Schedule for Off-Road Diesel Fleets

	Compliance Target for Each Fleet Size					
	Large Fleet (over 5,000 hp)		Medium Fleet (2,501–5,000 hp)		Small Fleet (2,500 hp or less)	
Compliance Date (January 1 of Year)[a]	NO_X Target (g/bhp-hr)	Alternative Compliance Through Fleet Turnover (% turnover required)[b]	NO_X Target (g/bhp-hr)	Alternative Compliance Through Fleet Turnover (% turnover required)[b]	NO_X Target (g/bhp-hr)	Alternative Compliance Through Fleet Turnover (% turnover required)[b]
2014	7.2	4.8	No target	No target	No target	No target
2015	6.8	8	No target	No target	No target	No target
2016	6.5	8	No target	No target	No target	No target
2017	6.0	8[c]	6.0	8	No target	No target
2018	5.5	10	5.5	10	No target	No target
2019	5.0	10	5.0	10	7.2	10
2020	4.5	10	4.5	10	6.8	10
2021	4.0	10	4.0	10	6.5	10
2022	3.5	10	3.5	10	6.0	10
2023	3.4	10	3.4	10	5.5	10

[a] Based on December 2010 amendments.
[b] Referred to by CARB as BACT.
[c] Must meet certain requirements for 8 percent turnover; otherwise, turnover percentage can be higher.
Source: CARB 2010c

5.3.2.7 Airborne Toxic Control Measure for Commercial Harbor Craft

In 2007, the CARB approved a regulation to reduce emissions from diesel engines on commercial harbor craft vessels. The regulation was intended to reduce DPM and NO_X emissions from harbor craft engines. The rule became effective in 2009 and was amended in 2010. The rule includes new engine and in-use engine requirements for many diesel engines on commercial harbor craft. The compliance schedule is phased in such that it brings the oldest and highest use engines into compliance first. This CARB rule is applicable to marine engines on tugboats that would be used during the construction of the project elements.

The rule requires that tugboats comply with in-use engine requirements per the compliance schedule as presented in Table 8 of the regulation, which is provided as Table 5-13.

Table 5-13. Compliance Dates for Engines on Ferries, Excursion Vessels, Tugboats, Towboats, and Push Boats Vessels With Homeports in SCAQMD

Engine Model Year	Total Annual Hours of Operation	Compliance Date
1979 and earlier	≥300	12/31/2009
1980–1985	≥300	12/31/2010
1986–1990	≥300	12/31/2011
1991–1995	≥300	12/31/2012
1996–2000	≥300	12/31/2013
2001	≥300	12/31/2014
2002	≥300	12/31/2015
2003	≥300	12/31/2016
2004	≥300	12/31/2017
2005	≥300	12/31/2018
2006	≥300	12/31/2019
2007	≥300	12/31/2020

For example, if a 1982-model year diesel engine on a tugboat operating in regulated California waters is used for 300 or more hours in 2009, the owner or operator must bring the engine into compliance with the requirements of subsection (e)(6)(C) by December 31, 2010.

Source: CARB 2011c

5.3.2.8 Airborne Toxic Control Measure for Diesel Particulate Matter from Portable Engines

Effective February 19, 2011, diesel-fueled portable engines with a rated brake horsepower of 50 or greater are subject to the CARB's Airborne Toxic Control Measure (ATCM). The ATCM imposes fuel and DPM emission requirements for in-use and new portable diesel engines. Diesel fleets are required to meet certain DPM standards by set compliance dates. By January 1, 2020, new emergency standby diesel engines will need to be certified to Tier 4 emission standards.

5.3.3 Regional

5.3.3.1 South Coast Air Quality Management District Rule and Regulations

Through the attainment planning process, SCAQMD has developed and adopted rules and regulations to address stationary sources of air pollution in the SCAB. The SCAQMD rules that are most pertinent to the program and project elements are shown in Table 5-14.

Table 5-14. SCAQMD Rules Applicable to Stationary Source Program and Project Elements

SCAQMD Rule	Purpose of Rule	Emission Sources
Program Elements		
402	Nuisance rule that prohibits the discharge of air contaminants that causes injury and annoyance, endangers public health and safety, or damages property	Potential odors during construction of 33 miles of sewers within the JOS
403	Fugitive dust rule that prohibits dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the emission source property line. Requires best available control measures to be applied to earth moving and grading activities	Construction of 33 miles of sewers within the JOS Construction associated with 25 MGD expansion of the SJCWRP Construction of flow equalization tanks for process optimization at various water reclamation plants: SJCWRP, POWRP, LCWRP, and LBWRP Construction of 6 new digesters at the JWPCP
1113	Sets a limit on the VOC content in architectural paint	Painting of flow equalization tanks for process optimization at various water reclamation plants: SJCWRP, POWRP, LCWRP, and LBWRP Painting of 6 new digesters at the JWPCP
1146	Sets NO_X limits for exhaust from large external combustion equipment, such as commercial boilers, steam generators, and process heaters	A new combustion device (e.g., boiler for producing steam) at the JWPCP should the existing flares not be used to manage the additional digester gas
1166	Requires a mitigation plan for soil contaminated with VOCs	Any contaminated soil encountered during construction
1402	Sets action triggers based on facility-wide risks for public notification and mandatory risk reduction	Total of all sources within each facility
1470	Sets fuel requirements and limits operating hours on diesel engines	Emergency stand-by diesel generator at the SJCWRP, which would be the fourth generator at the facility
1472	Reduces diesel particulate emissions from facilities with three or more stationary emergency stand-by diesel engines/generator	Emergency stand-by diesel generator at the SJCWRP, which would be the fourth generator at the facility
Project Elements		
403	Fugitive dust rule that prohibits dust from any active operation, open storage pile, or disturbed surface area that remains visible beyond the emission source property line. Requires best available control measures to be applied to earth moving and grading activities	Construction at shaft sites
1166	Requires a mitigation plan for soil contaminated with VOCs	Any contaminated soil encountered during construction

MGD = million gallons per day
Source: SCAQMD 2011b

The proposed emergency standby diesel engine for the SJCWRP under the program would be exempt from SCAQMD Rule 1110.2, but SCAQMD Rules 1470 and 1472 would apply. Any architectural paints used for the program or project elements would meet SCAQMD Rule 1113 requirements. The Sanitation Districts would follow SCAQMD Rule 1166 requirements should any contaminated soil be encountered during construction.

5.3.4 Local

5.3.4.1 Los Angeles Harbor Department Sustainable Construction Guidelines

For project elements that are constructed within the Port of Los Angeles, construction guidelines developed by the LAHD would apply. In February 2008, the LAHD Board of Harbor Commissioners

adopted the LAHD Sustainable Construction Guidelines for Reducing Air Emissions (LAHD Construction Guidelines) (LAHD 2008). These guidelines are used to establish air emission criteria for inclusion in construction bid specifications. The LAHD Construction Guidelines reinforce and require sustainability measures during performance of the contracts, balancing the need to protect the environment while providing for the economic development of the Port of Los Angeles. Future Board of Harbor Commissioners resolutions could expand the guidelines to cover other aspects of construction, including planning and design. These construction guidelines were incorporated into the Port of Los Angeles' Clean Air Action Plan. Therefore, following these construction guidelines would be consistent with the Port of Los Angeles' Clean Air Action Plan (San Pedro Bay Ports 2010).

The intent of the LAHD Construction Guidelines is to facilitate the integration of sustainable concepts and practices into all capital projects at the port and to phase in the implementation of these procedures in a practical, yet expedited, manner. The measures contained in the LAHD Construction Guidelines that are above and beyond those required by the EPA, SCAQMD, or CARB are shown in Table 5-15.

Table 5-15. SCAQMD Rules Applicable to Stationary Source Project Elements

LADH Measure	Regulatory Requirement
Harbor craft will meet the EPA Tier 3 engine emission standards by January 1, 2011.	EPA requires that Tier 3 standards be applied to new and repowered Category 1 and Category 2 marine diesel engines; phasing in over 2009–2014 depending on engine size.
All dredging equipment will be electric, if feasible.	No comparable regulatory requirement.
On-road heavy-duty trucks will comply with the EPA 2004 on-road emission standards for PM_{10} and NO_X and will be equipped with a CARB-verified Level 3 device. Emission standards will increase to the EPA 2007 on-road emission standards for PM_{10} and NO_X by January 1, 2012.	CARB requires installing PM filter or replacing certain older diesel trucks starting in 2012.

Source: LAHD 2008

The LADH measures described in the table are incorporated into the project, where feasible, as mitigation for project elements within the Port of Los Angeles.

5.4 Environmental Impacts and Mitigation Measures

Program and project elements are summarized in Table 5-6 and Table 5-7 as they pertain to air quality considerations. The methodologies used to estimate emissions from the program and project elements are described in this section.

5.4.1 Methodology and Assumptions

The emission estimates presented in this document were calculated using the latest available data, assumptions, and emission factors at the time this document was prepared. Future studies might use updated data, assumptions, and emission factors that are not currently available for this study. The estimates were compared to the thresholds of significance described in detail in Section 5.4.2.

Mitigation measures were applied to those proposed activities that would exceed a significance criterion, and then evaluated as to their effectiveness in reducing impacts of the program and project elements. The numerical results presented in the tables of this chapter were rounded, often to the nearest whole number, for presentation purposes. As a result, the sum of tabular data in the tables could differ slightly from the reported totals. Although the rounded numbers create an apparent discrepancy in the table, the underlying addition is accurate.

5.4.1.1 Summary of Methodologies for Determining Unmitigated Emissions

The methodologies used to estimate emissions from the program and project elements are summarized in Table 5-16.

Table 5-16. Summary of Methodologies Used to Estimate Unmitigated Emissions

Program Element/Functional Category	Emission Sources	Method for Estimating Emissions[a]
Program[b]		
SJCWRP Plant Expansion (Construction)	Site preparation and construction, on-road worker vehicles, construction equipment, heavy-duty haul trucks, and fugitive dust	Emissions model URBEMIS2007[c] Assumes a statewide average off-road diesel fleet mix and then uses the emission factor for each model year SCAQMD Rule 403 used for minimum requirement for fugitive dust control[c]
SJCWRP Plant Expansion (Operation)	Diesel stationary engine exhaust for permitted emergency generator. Handling of increased wastewater due to increased plant capacity at the west plant	EPA Tier 4 standards SCAQMD Rule 1179 Joint Emissions Inventory Program (JEIP) for VOC emissions, 1993. SCAQMD Pooled Emission Estimating Program (PEEP) for toxic emissions, 1989
SJCWRP, POWRP, LCWRP, and LBWRP Process Optimization (Construction)	Site preparation and construction for installing flow equalization tanks, on-road worker vehicles, construction equipment, heavy-duty haul trucks, and fugitive dust	Emissions model URBEMIS2007 Assumes a statewide average off-road diesel fleet mix and then uses the emission factor for each model year SCAQMD Rule 403 used for minimum requirement for fugitive dust control[d]
JWPCP Solids Processing (Construction)	Site preparation and construction, on-road worker vehicles, construction equipment, heavy-duty haul trucks, and fugitive dust	Emissions model URBEMIS2007 Assumes a statewide average off-road diesel fleet mix and then uses the emission factor for each model year SCAQMD Rule 403 used for minimum requirement for fugitive dust control[d]
JWPCP Solids Processing (Operation)	Handling of incremental solids due to increased solids processing Combustion of incremental digester gas due to increase in solids handling, either with existing flares or a new boiler for steam production	Source testing data for existing VOC emissions Source testing data for existing boilers and flares SCAQMD Rule 1146 NO_X limit used for new boiler
JWPCP Biosolids Management (Operation)	On-road diesel truck emissions for biosolids hauling. Paved road dust	Emissions model EMFAC2007 for criteria pollutants EPA AP-42 emission factors used for paved road dust
Project		
Shaft Site (Construction)	Site preparation and construction equipment, on-road worker vehicles, heavy duty haul trucks, and fugitive dust	Emissions model OFFROAD2007 Assumes a statewide average off-road diesel fleet mix and then uses the emission factor for each model year SCAQMD Rule 403 used for minimum requirement for fugitive dust control[d] EPA AP-42 emission factors used for dust generated over unpaved surfaces

Table 5-16 (Continued)

Program Element/Functional Category	Emission Sources	Method for Estimating Emissions[a]
Tunnel Alignment (Construction)	Construction equipment, on-road worker vehicles, heavy duty haul trucks, and fugitive dust	Emissions model OFFROAD2007 Assumes a statewide average off-road diesel fleet mix and then uses the emission factor for each model year
	Locomotive emissions during tunneling	EPA Tier 2 diesel engine is assumed
Riser/Diffuser Area (Construction)	Harbor craft, on-barge equipment, on-road diesel trucks, and worker vehicles	Emissions model OFFROAD2007 Uses the Port of Los Angeles' inventory of vessels to get the model years for each vessel type and the emission factor for each model year is used. The fleet mix is kept static throughout the construction

[a] Specific data and assumptions used are found in Appendix 5-B.

[b] Emissions model CalEEMod was not available in time for the EIR/EIS, but URBEMIS2007 is still appropriate for estimating emissions.

[c] Analysis years 2020, 2030, 2040, and 2050 were considered for program operations. These years were chosen based on the start dates of anticipated new operational activities. It is anticipated that WRP process optimization would be completed as early as 2020. The SJCWRP expansion is expected to start in 2030; as a result, 2030 would be the earliest year during which an increase in emissions could result from the new generator. The year 2040 was included in the analysis because that is the last year for which emission factors are available for on-road vehicles through CARB. The year 2050 is the planning horizon for the Clearwater Program.

[d] Compliance with SCAQMD Rule 403 would result in a 68 percent reduction in fugitive dust emissions (see CEQA Handbook Table A11-9-A:A11-77).

5.4.1.2 Methodology for Determining Program-Related Construction and Operational Emissions

The air quality impact analysis considers construction and operational impacts associated with the program. Construction impacts include emissions generated as a result of construction activities for the program elements. Construction of each program element would involve, but would not be limited to, the use of off-road construction equipment, on-road employee vehicles, and heavy-duty haul trucks. Because these sources would primarily use diesel fuel, they would generate emissions of diesel exhaust in the form of VOC, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. In addition, off-road construction equipment traveling over unpaved surfaces and performing earthmoving activities such as site clearing or grading would generate fugitive dust emissions in the form of PM_{10} and $PM_{2.5}$. Worker commute vehicles and haul trucks would also generate vehicle exhaust and road dust emissions. Construction emissions for the program elements were estimated based on information and data provided by the Sanitation Districts, EPA and CARB emission factors, and information from similar Sanitation Districts' projects.

Operation of the program elements has the potential to create air quality impacts through emissions generated from fuel combustion and wastewater processing from stationary sources, biosolids hauling trucks from the JWPCP, and from an emergency generator at the SJCWRP. Emissions from program operation were estimated based on information and operational data provided by the Sanitation Districts and the EPA, and CARB emission factors.

Analysis years 2020, 2030, 2040, and 2050 were considered for program operations. These years were chosen based on the estimated start dates of the anticipated new operational activities. It is anticipated that WRP process optimization would be completed as early as 2020. The SJCWRP expansion is expected to start in 2035; as a result, 2035 would be the earliest year during which an increase in emissions could result from the new generator. The year 2040 was included in the analysis because that is the last year for which emission factors are available for on-road vehicles through CARB. The year 2050 is the planning horizon for the Clearwater Program.

The construction and operation emission calculation tables are presented in Appendix 5-B.

San Jose Creek Water Reclamation Plant – Plant Expansion

Construction

Construction associated with expansion of the SJCWRP would include site preparation and treatment module installation. The SJCWRP consists of two plants: the SJCWRP East and the SJCWRP West. Construction activities associated with SJCWRP expansion would only occur at the SJCWRP West. For this analysis, it was assumed that SJCWRP expansion would occur after 2035 but before 2040. Although it is expected that construction would take between 2 and 3 years to complete, it was conservatively assumed that all construction would occur during a fast-paced 24-month period. Emissions associated with site preparation and treatment module installation were calculated using the URBEMIS2007 emissions model (URBEMIS 2007). It was assumed that site preparation would take 3 months to complete, and treatment module installation would take 21 months to complete. The assumed construction activity was based on similar Sanitation Districts' projects (Sanitation Districts 2005).

Fugitive dust and exhaust emissions would result from off-road construction equipment and from on-road travel associated with construction workers, material deliveries, and hauling trucks. Fugitive dust emissions from earth-moving activities are proportional to the amount of material handled or surface area disturbed. Within URBEMIS, the worst-case fugitive dust emission rate is 38.2 pounds per acre disturbed per day. For purposes of analysis, fugitive dust emissions were reduced by 68 percent from uncontrolled (worst-case) levels to reflect required compliance with SCAQMD Rule 403 (SCAQMD CEQA Handbook Table A11-9-A: A11-77). According to SCAQMD guidance, Rule 403 would reduce fugitive dust emissions by 68 percent (SCAQMD 2005) by watering three times per day. The dust-control methods would be specified in a dust-control plan that would be submitted to the SCAQMD per Rule 403. Fugitive dust emissions were evaluated in the same way for all program construction elements.

The types and number of construction equipment were estimated based on engineering consultant specifications (Utsumi pers. comm. 2010) and construction data from a similar Sanitation Districts' project (Sanitation Districts 2005). For this analysis, it was assumed that construction phases would not overlap because installation could only occur after site preparation is complete. The phase producing the highest daily emissions was selected as representative of peak day emissions. These emission estimates are conservative in nature and may not be representative of actual daily emissions because they are meant to convey a worst-case scenario.

Operations

Wastewater Treatment

SJCWRP expansion would increase the facility's treatment capacity at the SJCWRP West and would thereby result in increased wastewater treatment and nutrient removal activities. The new wastewater treatment module would have odor control systems to appropriately manage any odors that would be generated. Existing stationary sources would not be affected or changed by the plant expansion.

Generator

An additional stationary emergency diesel generator would be installed on site as part of the SJCWRP expansion. Emissions from generator exhaust were calculated using EPA final Tier 4 standards for generator sets. The emergency generator would not be required at the SJCWRP until after the plant is expanded, which is not likely until after 2035. It was assumed that the generator would be tested for approximately 50 hours per year based on the maximum activity permitted by the SCAQMD for maintenance and testing (the existing generators have typically been tested for an average of

approximately 15 to 20 hours per year [Sanitation Districts 2011]). Emissions from 1 hour of testing per day were assumed. These emission estimates are conservative in nature, meant to convey a worst-case scenario, and are, therefore, not necessarily representative of actual daily emissions.

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 of process optimization facilities would occur at four separate WRPs: the SJCWRP, the POWRP, the LCWRP, and the LBWRP. Construction activities associated with process optimization would begin in 2018 and take 2 to 3 years at the SJCWRP and 1 to 2 years at the POWRP, LCWRP, and LBWRP sites. For this analysis, it is assumed that all construction activities related to process optimization would occur simultaneously during the years 2018 and 2019, while construction at the SJCWRP would continue until 2020.

Construction emissions associated with process optimization facilities were estimated using the URBEMIS 2007 model. Construction activities would likely include site preparation and installation of a below-grade flow equalization tank. For this analysis, it was assumed that construction phases would not overlap at any given location because tank installation cannot occur until site preparation is complete. However, because construction of process optimization facilities would potentially occur at several WRPs simultaneously, peak daily emissions from each project site were combined for the overlapping construction years of 2018 and 2019. The combination of construction activities producing the highest daily emissions was selected as the peak day for regional emissions. These emission estimates are conservative in nature, meant to convey a worst-case scenario, and are, therefore, not necessarily representative of actual daily emissions.

Fugitive dust emissions were evaluated in the same way for all program construction elements, as described in the SJCWRP expansion construction methodology.

Operations

There would be no operational emissions associated with process optimization.

Joint Water Pollution Control Plant – Solids Processing

Construction

Construction associated with solids processing at the JWPCP would consist of the installation of six digesters. The capacity of the existing sludge dewatering system is anticipated to be sufficient to meet the projected future digested biosolids flow for 2050. Existing dewatering equipment may be replaced within the 2050 planning horizon. However, equipment replacement is not part of this analysis and would be analyzed as part of future permitting efforts.

Construction of the new digesters could occur at any time between 2018 and 2050. Construction emissions associated with JWPCP solids processing were estimated using the URBEMIS2007 model. Construction activities would likely include site excavation and digester installation. The types and number of construction equipment were estimated based on program specifics and information from SCAQMD's construction scenarios (SCAQMD 2008b). For this analysis, it was assumed that construction phases would not overlap because installation of digesters cannot occur until site excavation is complete. Each phase was modeled in URBEMIS on a daily basis, and the construction phase producing the highest daily emissions was selected as the peak day. These emission estimates are

conservative in nature, meant to convey a worst-case scenario, and are, therefore, not necessarily representative of actual daily emissions.

Fugitive dust emissions were evaluated in the same way for all program construction elements, as described in the SJCWRP expansion construction methodology.

Operations

Combustion of Digester Gas

Increased solids processing at the JWPCP would result in increased production of digester gas, which would be combusted in the existing flares or beneficially used to produce steam to heat digesters, using a new boiler. The increase in digester gas was projected linearly in relation to the expected 23 percent increase in solids handling at the JWPCP by 2050. This would result in an annual increase of approximately 730 million standard cubic feet of digester gas. Because of the uncertainty of whether the existing flares or a new boiler would be used to combust the additional digester gas, the analysis assumed the worst-case emission factors between the existing flares and a new boiler. The NO_X limits in SCAQMD Rule 1146 were used for the boiler emissions.

Wastewater Processes

The increase in solids processing at the JWPCP could result in an increase in odor generating potential from the wastewater treatment processes at the JWPCP. However, the odor control systems at the JWPCP have sufficient capacity to capture and treat these odors.

Joint Water Pollution Control Plant – Biosolids Management

Construction

No construction is associated with biosolids management because it entails only truck hauling of treated and dewatered biosolids to remote locations for beneficial use or landfill disposal.

Operations

With the expansion of the JOS and the increased biosolids processing at the JWPCP, it is anticipated that there would be an additional 20 truckloads per day above the 2008 levels to haul biosolids to various locations for beneficial use or disposal. The year 2008 is used to define baseline conditions. In 2008, biosolids were hauled to various locations within the SCAB and nearby air basins for disposal or beneficial use, as shown in Table 2-6. In future years, biosolids will be hauled to similar locations, with the exception that one location will be closed in 2013 (Puente Hills Landfill, located approximately 30 miles from the JWPCP) and another location will be added (Westlake Farms, located approximately 200 miles from the JWPCP) (see Figure 3-10).

For analysis years 2020, 2030, and 2040, daily emissions from biosolids hauling were calculated by multiplying haul truck vehicle miles traveled (VMT) by emission factors. VMT was calculated as the product of the average distance to a biosolids management location and the number of truck trips per year (based on 55 truck loads per day at baseline and 75 truck loads per day by 2050). The average distance was determined by weighting the distance to each location by the amount of biosolids transported to that location. The gradual increase of biosolids generated at the facility would result in a corresponding gradual increase of haul truck trips. Emission factors were generated by EMFAC2007 for a truck fleet representative of the county of Los Angeles (CARB 2006b).

Emissions were quantified for onsite travel at the JWPCP as well as for truck travel on public roadways to various disposal locations. Emissions would include exhaust from truck idling as well as exhaust and

road dust from truck travel. It was assumed that trucks would travel at 5 miles per hour (mph) for an approximate distance of 0.6 mile on site.

5.4.1.3 Methodology for Determining Project-Related Construction Emissions

Once constructed, the project-specific elements would not result in operational emissions. Therefore, only construction emissions are calculated in this assessment. Construction activities for the project-specific elements would include, but not be limited to, the use of off-road construction equipment, tugboats, and on-road heavy-duty haul trucks. Because these sources would primarily use diesel fuel, they would generate emissions of diesel exhaust in the form of VOC, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. In addition, off-road construction equipment traveling over unpaved surfaces and performing earthmoving activities, such as site clearing or grading, would generate fugitive dust emissions in the form of PM_{10} and $PM_{2.5}$. Worker commute vehicles and haul trucks would also generate vehicle exhaust and paved road dust emissions.

Construction emissions were estimated using the following methodology. The Sanitation Districts supplied the equipment usage and scheduling data needed to calculate emissions for the proposed construction activities. Emission factors from CARB's OFFROAD2007 and EMFAC2007, and the 2008 Port of Los Angeles Inventory of Air Emissions (Starcrest 2009) were identified for each type of equipment, heavy-duty trucks, and marine vessels, respectively. In some cases, the horsepower rating of the equipment was required in order to estimate emissions. Assumptions regarding emission control measures assumed in the unmitigated construction emission calculations are presented in Table 5-16.

To estimate peak daily construction emissions, emissions were first calculated for the individual construction activities (e.g., shaft construction, offshore and onshore tunneling, riser and diffuser area construction, etc.). Peak daily emissions then were determined by summing emissions from overlapping construction activities as indicated in the proposed construction schedule (Appendix 5-B). The combination of construction phases across all locations producing the highest daily emissions was selected as the peak day. These emission estimates are conservative in nature, meant to convey a worst-case scenario, and are, therefore, not necessarily representative of actual daily emissions.

The specific approaches to calculating emissions for the various emission sources during construction of the project are discussed in the following sections. The construction emission activity, emission factors, and calculation tables are presented in Appendix 5-B.

Off-Road Construction Equipment

Emissions of VOC, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ from diesel-powered construction equipment for both land-based equipment (e.g., cranes, loaders, etc.) and marine equipment (e.g., barge-mounted equipment) were calculated using emission factors derived from the CARB OFFROAD2007 Emissions Model (CARB 2006a). Using the county of Los Angeles fleet information, the OFFROAD2007 model was run for each of the construction years of 2014 through 2021. For purposes of estimating unmitigated emissions, the fleet mix was assumed to have some degree of turnover as older equipment is replaced with newer equipment. The fleet mix was assumed to change at the start of each new phase, but then assumed to remain constant during the course of that phase. Emission factors were calculated based on each type of equipment, the horsepower rating of the equipment, and the corresponding equipment activity levels.

Locomotives Used During Tunneling Activities

Small, mining-type locomotives would be used to convey excavated material and personnel in rail cars through the tunnel alignments. Emissions from these diesel-powered locomotives were quantified using

EPA Tier 2 off-road diesel emission standards for VOC, CO, NO_X, PM_{10}, and $PM_{2.5}$. SO_X emissions were calculated based on the sulfur content of California diesel fuel of 15 ppm. Locomotive engine rating and activity, based on engineering specifications, were assumed to be 185 horsepower and 12 hours per day. It was assumed that up to 5 locomotives could operate simultaneously.

On-Road Trucks Used During Construction

Emissions from on-road, heavy-duty diesel trucks during construction were calculated using emission factors generated by the EMFAC2007 on-road mobile source emission factor model for a truck fleet representative of the county of Los Angeles (CARB 2006b). For purposes of estimating unmitigated emissions, the truck fleet mix was assumed to have some degree of turnover as older trucks are replaced with newer equipment. The truck fleet mix was assumed to change at the start of each new phase, but then assumed to remain constant during the course of that phase. The EMFAC2007 model output shows that, on a per-mile basis, emission factors will steadily decline in future years as older trucks are replaced with newer, cleaner trucks that meet the required state and federal on-road engine emission standards.

Other assumptions regarding on-road trucks during construction are as follows:

- Trucks hauling debris or fill materials would travel a distance of approximately 60 miles per trip (Sanitation Districts 2011).
- Non-incidental onsite truck idling time[1] would be limited to 5 minutes for all truck trips per CARBs Heavy-Duty Vehicle Idling Emissions Reduction Program (CARB 2009).

Tugboats Used During Construction

During construction, tugboats would be used to guide barges. Emissions from tugboat main and auxiliary engines were calculated using the methodology found in the Port of Los Angeles 2008 Air Emissions Inventory (Starcrest 2009) and the CARB methodology (CARB 2007). The methodology is based on a zero hour emission rate for the engine model year in the absence of any malfunction or tampering of engine components that can change emissions, plus a deterioration rate. The deterioration rate reflects the fact that base emissions of engines change as the equipment is used due to wear of various engine parts or reduced efficiency of emission control devices.

CARB's deterioration factors, useful life, and zero-hour emission factors for commercial harbor craft were used for all pollutants except SO_X. SO_X emissions were quantified based on brake-specific fuel consumption and a sulfur fuel content of 15 ppm, which is the sulfur content limit for California harbor craft, in accordance with California Diesel Fuel Regulations (CARB 2004).

Fugitive Dust During Construction

CARB's EMFAC2007 factors were used to determine the fugitive dust generated by heavy-duty trucks and automobiles traveling both on site and off site. Fugitive dust emissions from earth-moving activities are proportional to the amount of material handled. Emissions from loading, dumping, and construction equipment traveling over unpaved surfaces were estimated using the emissions factors in the EPA's Emission Factors and AP-42 (EPA 2006b). Unmitigated emissions were reduced by 68 percent from uncontrolled levels to reflect required compliance with SCAQMD Rule 403 (SCAQMD CEQA Handbook Table A11-9-A: A11-77). According to SCAQMD guidance, Rule 403 would reduce fugitive dust emissions by 68 percent (SCAQMD 2005) by watering three times per day. The dust-control

[1] Non-incidental idling time refers to idling time not directly associated with truck loading. For example, idling while in queue would be considered non-incidental idling, whereas idling while under the loader would not.

methods for the project would be specified in the dust-control plan that would be submitted to the SCAQMD per Rule 403.

Worker Commute Trips During Construction Activities

Emissions from worker trips during construction were calculated using the EMFAC2007 emission factors in conjunction with crew information supplied by the Sanitation Districts. The Sanitation Districts' construction estimates provided detailed information about the number of crew and man-hours required for each project element. A standard trip distance of 20 miles was used to calculate total VMT (URBEMIS 2007).

5.4.1.4 Baseline

CEQA Baseline

The California Environmental Quality Act (CEQA) baseline for the Clearwater Program is described in Section 1.7.4.1. CEQA Guidelines require that an environmental impact report (EIR) include a description of the physical environmental conditions in the project vicinity that exist at the time of the notice of preparation. These environmental conditions would normally constitute the baseline physical conditions by which the CEQA lead agency determines whether an impact is significant. For purposes of this EIR/EIS, the CEQA baseline for determining the significance of potential impacts of the program and project is the existing conditions in 2008. The CEQA baseline represents the setting at a fixed point in time (2008) and differs from the No-Project Alternative (Alternative 5) in that the No-Project Alternative addresses what is likely to happen at the site over time, starting from the existing conditions. The No-Project Alternative allows for growth at the project site that would occur without additional approvals.

The CEQA baseline for construction activities is zero because construction activities would result in new emissions. The CEQA baseline for the operational activities and alternatives includes emissions generated at the SJCWRP and the JWPCP, as well as emissions currently generated as a result of hauling biosolids from the JWPCP site to various disposal and beneficial use facilities (see Figure 2-10). Emissions identified in the CEQA baseline reflect all JWPCP and SJCWRP sources. The program elements do not propose new stationary sources for the other WRPs so they are not included in the baseline.

The average daily operational emissions associated with the CEQA baseline are presented in Table 5-17. Emissions result primarily from stationary sources in support of wastewater treatment processes (such as turbines, hot water heaters, generators, boilers, flares, and other fuel-burning equipment) and from biosolids hauling from the JWPCP to the facilities shown on Figure 2-10. The single largest source of baseline CO, NO_X, and PM emissions is the digester gas-fired stationary turbines. The single largest source of baseline VOC and SO_X emissions is from processes used to thicken, stabilize, dewater, and store biosolids. Each of these biosolids processing facilities has an odor control system to control the trace VOC and SO_X constituents in the ambient air and, therefore, minimizes any odor impacts.

The 2008 emissions for SJCWRP and JWPCP were based on the Annual Emissions Report (AER) by the SCAQMD, reported in tons per year. To maintain consistency with this analysis, AER emissions were converted into pounds per day. Particulate emissions, reported as total PM in the AER, were converted to PM_{10} and $PM_{2.5}$ based on the fraction of PM_{10} and $PM_{2.5}$ to total PM in fuel combustion, per SCAQMD protocols (SCAQMD 2006).

Because baseline emissions were obtained from annual emissions presented in the AER and converted to daily emissions, they represent average daily emissions. The CEQA baseline emissions from biosolids hauling were calculated using the methodology presented in Section 5.4.1.1 and also represent average daily emissions. Operations at the JWPCP and WRPs vary throughout the day but are fairly consistent

throughout the year. Average daily emissions are always lower than peak daily emissions. Therefore, the use of average emissions in the CEQA baseline results in a lower baseline and, therefore, a conservative estimate of CEQA impacts when compared to peak daily program emissions.

Table 5-17. Operational Emissions – CEQA Baseline 2008

	Emissions (pounds per day)					
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
SCAB						
JWPCP[a]	136	349	435	90	123	122
SJCWRP[a]	26	12	7	<1	1	1
Biosolids Hauling[b]	25	93	309	<1	183	39
Total	187	453	751	90	306	161
SDAB						
Biosolids Hauling[c]	5	19	63	<1	37	8
SSAB						
Biosolids Hauling[c]	4	14	48	<1	29	6
SJVAB						
Biosolids Hauling[b]	8	31	103	0	61	13

[a] Emissions from the WRPs and the JWPCP are emissions from SCAQMD permitted and nonpermitted equipment as reported in the 2008 Annual Emissions Reporting for each facility.

[b] Emissions from biosolids hauling were quantified using the methodology in Section 5.4.1.1. Hauling destinations are shown on Figure 2-10 and in Table 2-6.

[c] Emissions are associated with hauling biosolids through SDAB and SSAB to reach the biosolids management facility in Yuma, Arizona.

Source: Sanitation Districts 2008a; CARB 2006b; EPA 2006c

NEPA No-Federal Action Baseline

The National Environmental Policy Act (NEPA) baseline for the Clearwater Program is described in Section 1.7.4.2. The NEPA baseline is not bound to a "no growth" scenario. Therefore, the NEPA baseline may include increases in operations over the life of a project that do not require federal action or approval.

The NEPA baseline is equivalent to the No-Federal-Action Alternative (Alternative 6), which is defined as activities that would occur absent federal action. Absent federal action, only the program elements would occur. Therefore, NEPA baseline emissions would be equivalent to program emissions and the NEPA increment would always be equivalent to the project construction emissions.

The NEPA baseline for construction and operation is presented in Table 5-18. The NEPA baseline would vary in each analysis year depending on implementation of program elements. However, because the project construction emissions are represented by a 30-year constant average, the NEPA increment would also be constant and as such is represented in analysis tables for a single year, 2050. For this reason, the NEPA baseline operational emissions are in some cases lower than the CEQA baseline emissions.

Table 5-18. NEPA Baseline

Time Period		Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Construction							
2018–2034	JWPCP Solids Processing	5	29	42	0	21	6
	SJCWRP Process Optimization	5	29	42	0	9	3
	POWRP Process Optimization	4	20	29	0	3	2
	LCWRP Process Optimization	5	28	40	0	6	2
	LBWRP Process Optimization	5	28	40	0	6	2
2035–2040	JWPCP Solids Processing	5	29	42	0	21	6
	SJCWRP Plant Expansion	4	21	30	0	12	3
2041–2050	JWPCP Solids Processing	5	29	42	0	21	6
Operation in SCAB							
2050	JWPCP Stationary Sources	159	363	508	111	141	140
2050	SJCWRP Stationary Sources	31	12	7	0	1	1
2035	SJCWRP Emergency Generator	1	2	2	0	0	0
2050	Biosolids Hauling	10	47	112	1	301	48
Operation in SDAB							
2050	Biosolids Hauling	2	9	21	0	56	9
Operation in SSAB							
2050	Biosolids Hauling	1	7	16	0	43	7
Operation in SJVAB							
2050	Biosolids Hauling	5	22	53	0	143	23
Construction and operational emissions are calculated per emissions methodology in Section 5.4.1.1.							

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 U.S. Army Corps of Engineers' (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.

5.4.2 Thresholds of Significance

The program and/or project would pose a significant impact if it exceeds any of the following thresholds for air quality (AQ):

AQ-1. Conflicts with or obstructs implementation of an applicable air quality management plan.

AQ-2. Emissions exceed the SCAQMD daily significance thresholds for construction- and/or operation-related emissions.

SCAQMD significance thresholds are presented in Table 5-19.

Table 5-19. SCAQMD Daily Significance Thresholds

Air Pollutant	Construction Threshold (pounds per day)	Operational Threshold (pounds per day)
VOCs	75	55
CO	550	550
NO_X	100	55
SO_X	150	150
PM_{10}	150	150
$PM_{2.5}$	55	55

Source: SCAQMD 2009a

Program operations would extend into surrounding air basins beyond the SCAB. These operations would be limited to biosolids hauling from the JWPCP and would extend to the SDAB, SSAB, and the SJVAB. The significance thresholds outside the SCAB, which are summarized in Table 5-20, are also considered in this analysis.

Table 5-20. Non-SCAQMD Regional Operational Significance Thresholds

	Emissions Threshold					
Air Basin	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
SDAB[a] (pounds per day)	75	550	250	250	100	55
SSAB[b] (pounds per day)	55	550	55	150	150	55
SJVAB[c] (tons per year)	10	N/A	10	N/A	N/A	N/A

[a] Source: San Diego Air Pollution Control District 1998, Rule 20.1 (thresholds are in pounds per day)
[b] Source: Imperial County Air Pollution Control District 2007 (thresholds are in pounds per day)
[c] Source: San Joaquin Valley Unified Air Pollution Control District 2010 (thresholds are in tons per year)

AQ-3. Emissions exceed SCAQMD's Localized Significance Thresholds.

Localized significance thresholds (LSTs) were developed by SCAQMD as part of the SCAQMD's environmental justice initiative (SCAQMD 2008b). LSTs represent the maximum emissions from a project that are not expected to cause or contribute to an exceedance of the most stringent applicable federal or state ambient air quality standard, and were developed based on the ambient concentrations of that pollutant that could be expected for the project site and surrounding area. LSTs, while voluntary, allow for a significance determination in lieu of air dispersion modeling, particularly for proposed projects of 5 acres or less. The LSTs are conservative, providing public agencies with a method of evaluating ambient air pollutant concentrations without having to conduct air dispersion modeling for all projects.

LST thresholds are based on size (acres) of the disturbed construction area, the ambient air quality around the facility or construction site, and the distance to offsite human receptor. For purposes of a CEQA analysis, the SCAQMD considers a sensitive receptor to be a receptor such as a residence, hospital, prison, and convalescent facility where it is possible that an individual could remain for 24 hours. Schools are also considered sensitive receptors. Commercial and industrial facilities are not considered sensitive receptors because employees do not typically remain on site for a full 24 hours.

The LST methodology requires that PM_{10} and $PM_{2.5}$ emissions be evaluated at sensitive receptors because the averaging period for the state standard is 24 hours and because, per SCAQMD's definition, an individual could remain at a sensitive receptor location for the full 24 hours. The LST methodology requires that for pollutants with standards based on shorter averaging periods, such as NO_2 and CO,

emissions also be evaluated at industrial and commercial receptors because it is reasonable to assume that a worker at these sites could be present for periods of 1 to 8 hours. VOCs do not have an ambient air quality standard and are, therefore, not addressed in the LST methodology. Offsite mobile emissions are not included in the LST evaluation, per LST methodology.

Acreages and distances to the nearest offsite sensitive and commercial/industrial receptors for program and project elements are summarized in Table 5-21 and are shown on Figures 5-5 to 5-19.

Table 5-21. Proposed Construction Sites – Information Used in LST Characterization

	SCAQMD SRA No.	Area Under Construction/ (Operation) Per Day (in acres)	Approximate Distance to Nearest Non-Resident Sensitive Receptor[a]	Approximate Distance to Nearest Commercial/ Industrial Receptor[b]	Approximate Distance to Nearest Resident	Reference Figure
Program Element						
SJCWRP Plant Expansion	11	1 5 (operation)	2,260 feet (school)	50 feet[c]	630 feet	5-5
SJCWRP Process Optimization	11	1 5 (operation)	2,865 feet (school)	35 feet[c]	240 feet	5-5
POWRP Process Optimization	10	1	3,300 feet (school)	285 feet	1,190 feet	5-6
LCWRP Process Optimization	5	1	2,010 feet (school)	210 feet	640 feet	5-7
LBWRP Process Optimization	4	1	2,085 feet (school)	25 feet[c]	1,320 feet	5-8
JWPCP Solids Processing	4	5	2,110 feet (school)	320 feet	420 feet	5-9
Project Element						
JWPCP East Shaft Site	4	5	490 feet (school)	165 feet	215 feet	5-10
JWPCP West Shaft Site	4	5	2,080 feet (school)	110 feet	105 feet	5-11
TraPac Shaft Site	4	1	1,670 feet (school)	0 feet[c]	640 feet	5-12
LAXT Shaft Site	4	5	8,120 feet (school)	275 feet	5,760 feet	5-13
Southwest Marine Shaft Site	4	1	210 feet (prison)	65 feet[c]	3,340 feet	5-14
Angels Gate Shaft Site	3	2	1,940 feet (school)	95 feet	70 feet	5-15
Royal Palms Shaft Site	3	1	1,275 feet (school)	2,760 feet	120 feet	5-16
SP Shelf Riser/Diffuser	N/A	N/A	8.25 miles (school)	7.9 miles	7.8 miles	5-17
PV Shelf Riser/Diffuser	N/A	N/A	2.5 miles (school)	2 miles	2 miles	5-18
Existing Ocean Outfalls	N/A	N/A	2,085 feet (school)	3,400 feet	900 feet	5-19

[a] For PM_{10} and $PM_{2.5}$, the nearest offsite residential or non-residential sensitive receptor is used to calculate the LST.

[b] For NO_X and CO, commercial/industrial facilities are included as potential receptors because NO_2 and CO have 1 and/or 8-hour ambient air quality standards and workers could be present at these sites during this timeframe. The nearest offsite receptor is used to calculate the LST, which could be a commercial/industrial, sensitive, or residential receptor.

[c] South Coast Air Quality Management District's Final LST Method requires that 25 meters (82 feet) be used as minimum distance to receptor.

Source: Distances are based on Figures 5-5 to 5-19

LSTs for the program and project are presented in Table 5-22 and were developed based upon total area (acres) of the emissions source and distance to nearest receptor shown in Table 5-21.

FIGURE 5-5

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from SJCWRP Proposed Facilities

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

FIGURE 5-6

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from POWRP Proposed Facilities

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

FIGURE 5-7

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from LCWRP Proposed Facilities

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

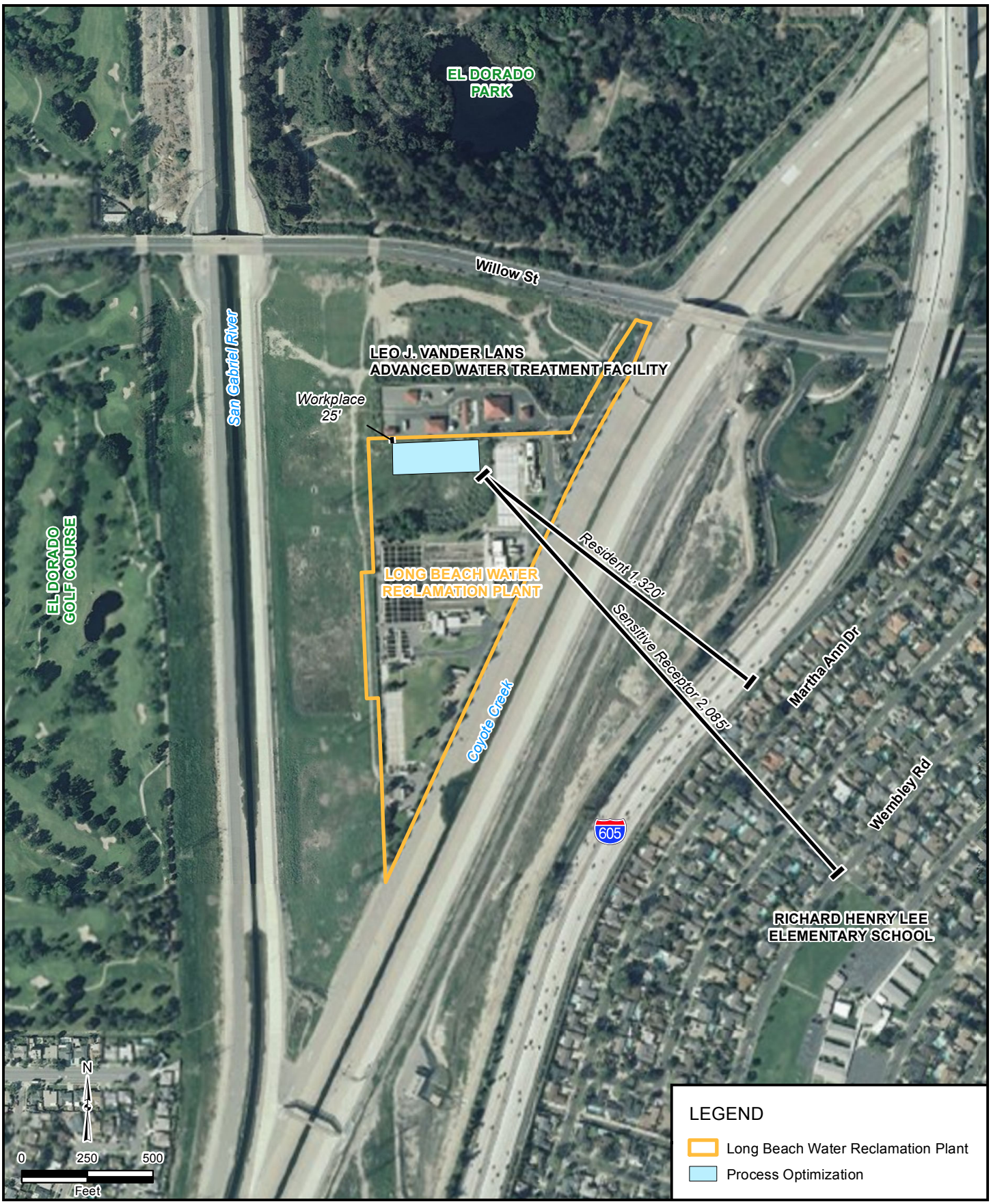

FIGURE 5-8

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from LBWRP Proposed Facilities

Source: Sanitation Districts of Los Angeles County 2011, ESRI 2011

FIGURE 5-9

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from JWPCP Proposed Facilities

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

FIGURE 5-10

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from JWPCP East Shaft Site

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

FIGURE 5-11

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from JWPCP West Shaft Site

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

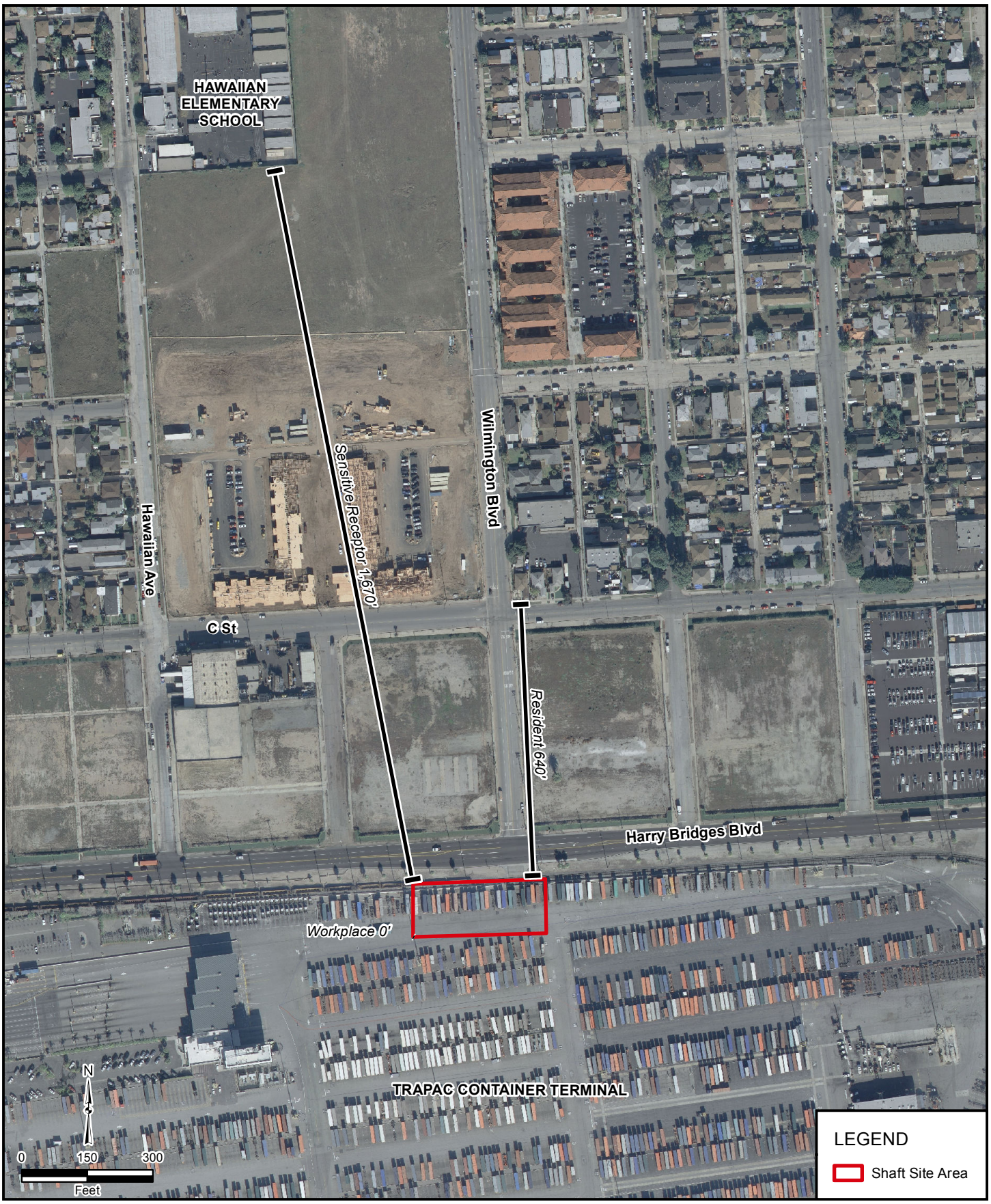

FIGURE 5-12

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from TraPac Shaft Site

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

FIGURE 5-13

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from LAXT Shaft Site

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

FIGURE 5-14

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from Southwest Marine Shaft Site

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

FIGURE 5-15

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from Angels Gate Shaft Site

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

FIGURE 5-16

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from Royal Palms Beach Shaft Site

Source: Sanitation Districts of Los Angeles County 2011, LARIAC 2007

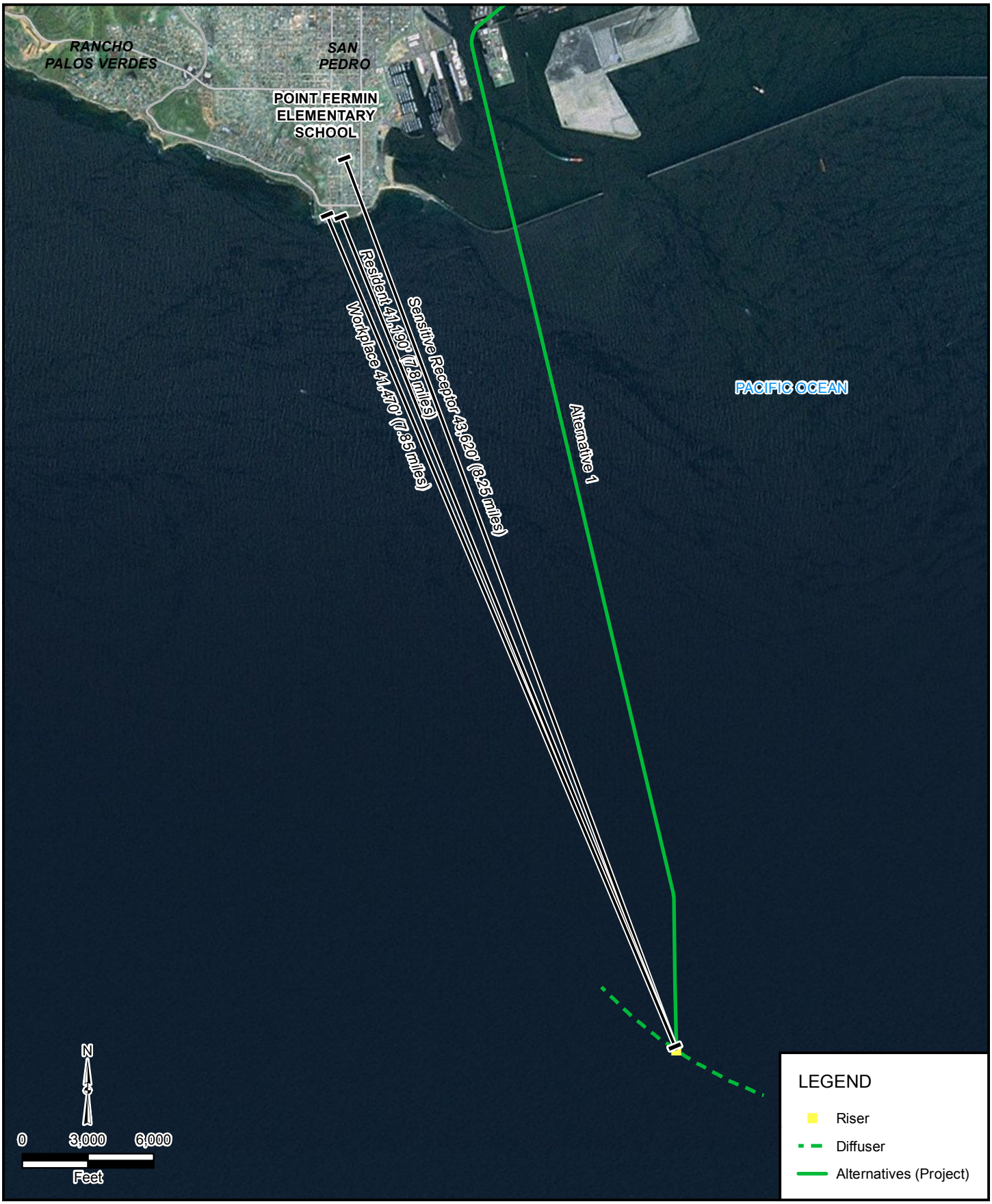

FIGURE 5-17

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from San Pedro Shelf Riser/Diffuser Area

Source: Sanitation Districts of Los Angeles County 2011, Thomas Bros. 2011, ESRI 2011

FIGURE 5-18

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from Palos Verdes Shelf Riser/Diffuser Area

Source: Sanitation Districts of Los Angeles County 2011, Thomas Bros. 2011, ESRI 2011

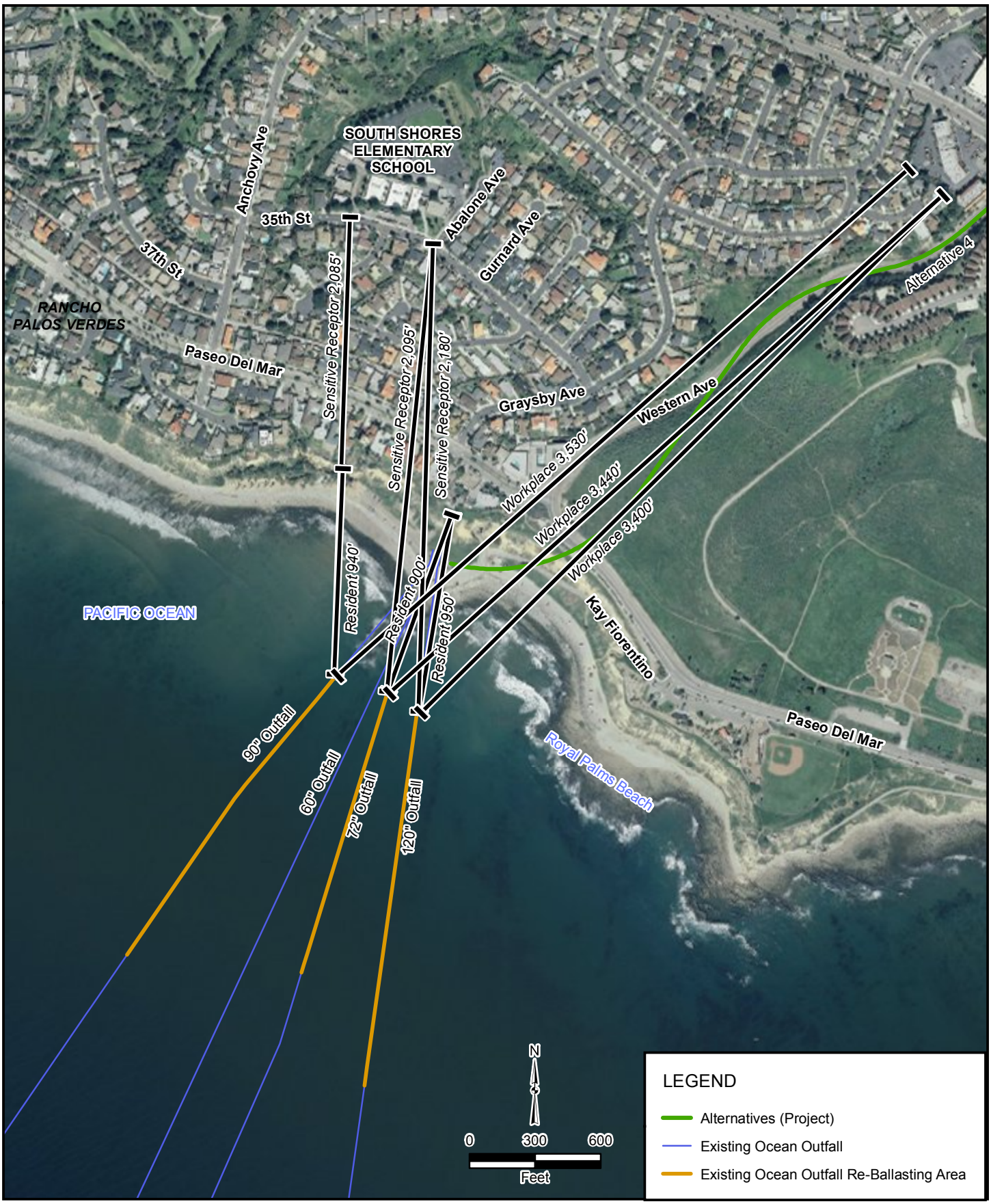

FIGURE 5-19

CLEARWATER Program

Distance to Nearest Sensitive Receptor and Resident from Existing Ocean Outfall in Depths of -20 to -50 Feet

Source: Sanitation Districts of Los Angeles County 2011, ESRI 2011

Table 5-22. SCAQMD Localized Significance Thresholds

	Localized Significance Threshold (pounds per day)[a]			
	CO	NO_X[b]	PM_{10}	$PM_{2.5}$
Program Element				
SJCWRP Plant Expansion	1,113	53	29	9
SJCWRP Process Optimization	673	46	13	5
POWRP Process Optimization	911	72	57	18
LCWRP Process Optimization	735	45	27	4
LBWRP Process Optimization	585	32	61	26
JWPCP Solids Processing	1,982	66	58	18
Project Element				
JWPCP East Shaft Site	1,982	66	58	10
TraPac Shaft Site	1,180	38	29	10
LAXT Shaft Site	1,982	66	191	120
Southwest Marine Shaft Site	585	32	13	5
JWPCP West Shaft Site	1,530	68	14	8
Angels Gate Shaft Site	967	73	8	5
Royal Palms Shaft Site	664	51	5	3

[a] CO and NO_X LSTs are based on the shortest distance to either a sensitive or commercial/industrial receptor. PM_{10} and $PM_{2.5}$ LSTs are based on the distance to the nearest non commercial/industrial sensitive receptor.

[b] NO_X LST was scaled to reflect the federal NO_2 standard.

LSTs are not applicable to the riser and diffuser areas because they are located too far from receptors to cause an impact.

Source: SCAQMD LST Methodology (SCAQMD 2008b) and look-up tables, revised on October 2009 (SCAQMD 2009b)

AQ-4. Operational emissions create an objectionable odor at the nearest offsite receptor.

AQ-5. Does not conform to the EPA-approved State Implementation Plan and exceeds de minimis thresholds. This threshold is analyzed for the recommended plan as part of the conformity analysis in Appendix 5-A.

AQ-6. Exposes the public to significant levels of toxic air contaminants.

A project would have a significant impact if it would expose individuals to significant levels of TACs. Impacts would be significant if the maximum incremental cancer risk, the cancer burden, or the noncancer hazard index would be greater than or equal to the TAC thresholds shown in Table 5-23.

Table 5-23. Cancer and Non-Cancer Significance Thresholds

TACs (including carcinogens and noncarcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in area ≥ 1 in 1 million) Hazard Index ≥ 1.0 (project increment)

Source: SCAQMD 2009a

Program and project elements were analyzed by threshold in the Preliminary Screening Analysis (Appendix 1-A) to identify potentially significant impacts on air quality before mitigation. Table 5-24 identifies which elements were brought forward for further analysis by threshold in this EIR/EIS for Alternatives 1 through 4. Table 5-24 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 5-24. Thresholds Evaluated

		Threshold					
	Alt.	**AQ-1**	**AQ-2**	**AQ-3**	**AQ-4**	**AQ-5[b]**	**AQ-6**
Program Element							
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	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.

[b] Threshold AQ-5 is analyzed for the recommended alternative as part of the federal conformity analysis in Appendix 5-A.

Alt. = alternative

5.4.3 Alternative 1

5.4.3.1 Program and Project

Impact AQ-1 and Impact AQ-2 are evaluated on a regional level and thus analyzed for the combined emissions of construction/operation activities that would occur concurrently for the program and project.

Impact AQ-1. Would Alternative 1 conflict with or obstruct implementation of the applicable air quality management plan?

Construction

CEQA Analysis

The purpose of the 2007 AQMP is to set forth a comprehensive program to bring the SCAB into compliance with all federal and state air quality planning requirements. Therefore, it is appropriate to address compliance on a regional level by evaluating the concurrent impacts associated with the program and the project. Construction of Alternative 1 (Program) would produce emissions of nonattainment pollutants, primarily in the form of diesel exhaust and fugitive dust. The 2007 AQMP proposes emission reduction measures that are designed to bring the SCAB into attainment of the state and national AAQS. The attainment strategies in the AQMP include mobile source control measures and clean fuel programs that are enforced at the state and federal level on engine manufacturers, petroleum refiners, and retailers; as a result, program construction would comply with these control measures. The SCAQMD also adopts AQMP control measures into SCAQMD rules and regulations, which are then used to regulate sources of air pollution in the SCAB. Therefore, compliance with these requirements would ensure that Alternative 1 (Program) would not conflict with or obstruct implementation of the AQMP.

Construction of Alternative 1 (Project) would produce emissions of nonattainment pollutants, primarily in the form of diesel exhaust and fugitive dust. Similar to Alternative 1 (Program), Alternative 1 (Project) would comply with attainment strategies outlined in the 2007 AQMP and enforced at the state and federal level.

Compliance with attainment strategies outlined in the 2007 AQMP and enforced at the state and federal level would ensure that Alternative 1 would not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. Therefore, under NEPA, the impacts associated with construction of the combined program and project for Alternative 1 would be the same as for Alternative 1 (Project), and would occur for the duration of construction. Baseline conditions would resume upon termination of construction.

Operation

CEQA Analysis

Alternative 1 (Program) uses the SCAG's population forecasts for the JOS service area through the year 2050, which are included in the 2007 AQMP. The objective of Alternative 1 (Program) is to provide facilities that are capable of handling flows generated within the region. Alternative 1 (Program), which seeks to accommodate the projected growth in population, is accounted for in the 2007 AQMP emissions forecast. Operation of Alternative 1 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants and as such would not conflict with or obstruct implementation of the AQMP. Alternative 1 would, therefore, not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

NEPA Analysis
In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from operation of program elements. Therefore, under NEPA, the impacts associated with operation of the combined program and project for Alternative 1 would be the same as for Alternative 1 (Project). Operational project emissions would be zero because the tunnel and outfall system would emit no pollutants. There would be no impacts under NEPA.

CEQA Impact Determination
Construction and operation of Alternative 1 would not conflict with or obstruct implementation of the AQMP. 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 of Alternative 1 would not conflict with or obstruct implementation of the AQMP. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation would result in no impacts.

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant.

Impact AQ-2. Would Alternative 1 exceed the SCAQMD daily significance thresholds for construction- and/or operation-related emissions?

Criteria pollutants can affect air quality on a regional basis. Criteria pollutants may travel across a regional area, affecting air quality at some distance from the original emissions source. For this reason, SCAQMD established mass daily thresholds for construction and operational activities for criteria pollutants VOC, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. The mass daily thresholds are emissions-based thresholds used to assess the potential significance of criteria air pollutants at the regional level for a reasonable peak day. Peak day emissions that exceed the mass daily significance thresholds may have significant adverse regional effects. To perform this analysis, peak day emissions for the program and project elements were estimated and combined for program and project elements that may occur at the same time.

Construction

CEQA Analysis
Construction of Alternative 1 (Program) would occur between 2018 and 2050 and would result in the temporary emissions of VOC, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$. Emissions would originate from mobile construction equipment exhaust, delivery and haul truck exhaust and road dust, employee vehicle exhaust and road dust, tunnel locomotive, and fugitive dust from site work related to excavation activities. Peak day criteria pollutant emissions associated with construction of the various program and project elements

are presented in Table 5-25. Peak day emissions for each program element were determined by totaling emissions from construction activities that could potentially overlap. In instances where more than one possible combination of activities would occur during the same construction phase, emissions were calculated for all possible combinations, and the combination producing the greatest emissions in pounds per day was reported.

Table 5-25. Alternative 1 Under CEQA Peak Day Construction Emissions Without Mitigation

Time Period	Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Program							
2018–2050	JWPCP Solids Processing	5	29	42	0	21	6
2018–2028	SJCWRP Process Optimization	5	29	42	0	9	3
2018–2028	POWRP Process Optimization	4	20	29	0	3	2
2018–2028	LCWRP Process Optimization	5	28	40	0	6	2
2018–2028	LBWRP Process Optimization	5	28	40	0	6	2
2035–2040	SJCWRP Plant Expansion	4	21	30	0	12	3
2018–2028	Peak Day Emissions[a]	25	133	192	0	45	15
Project							
2015–2015	JWPCP East Shaft Site Construction	25	94	244	0	12	10
2016–2018	Onshore Tunnel Alignment	32	183	371	1	18	15
2016–2017	TraPac Shaft Site Construction	23	88	217	0	11	9
2015–2016	LAXT Shaft Site Construction	25	94	244	0	12	10
2016–2022	Offshore Tunnel Alignment	47	206	432	1	22	18
2015–2016	Southwest Marine Shaft Site Construction	25	94	244	0	12	10
2019–2021	SP Shelf Riser Construction	3	52	49	0	2	1
2021–2022	SP Shelf Diffuser Construction	16	86	148	0	4	4
2021–2022	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2016–2017	Peak Day Emissions[b]	92	477	1,020	3	51	42
Concurrent Peak Day Emissions[c]		94	522	1,020	3	85	49
Significance Thresholds		75	550	100	150	150	55
CEQA Increment[d]		94	522	1,020	3	85	49
CEQA Significant?		Yes	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day program construction emissions would occur during 2018 through 2028 if JWPCP solids processing and process optimization at the WRPs were constructed at the same time.

[b] Peak day project construction emissions would occur in 2016 and 2017 when construction of the TraPac shaft overlaps with both tunneling activities.

[c] Concurrent peak day emissions of VOC, CO, PM_{10}, and $PM_{2.5}$ would occur during 2018 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, and onshore and offshore tunneling occurred concurrently. Concurrent peak day NO_X emissions would occur in both 2016 and 2017 if construction of the onshore and offshore tunnels and the TraPac shaft occurred concurrently. Concurrent peak day SO_X emissions would occur during 2016 if construction of the onshore and offshore tunnels, LAXT shaft, and the JWPCP East shaft occurred concurrently.

[d] CEQA increment is equivalent to concurrent peak day emissions because the CEQA baseline is zero for new construction.

Source: Appendix 5-B

Construction of Alternative 1 (Project) would result in the generation of emissions of VOC, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ over a 96-month period, starting in the first quarter of 2015 and concluding in the fourth quarter of 2022. Emissions would originate from mobile and stationary construction equipment exhaust, tugboat and small boat exhaust, tunnel locomotive, delivery and haul truck exhaust, employee vehicle exhaust, and fugitive dust from site work related to tunneling and excavation activities. Construction-related

exhaust emissions depend on the level of activity, length of construction period, specific construction operations, types of equipment, and number of personnel. Construction-related fugitive dust emissions could vary depending on wind and precipitation conditions and soil moisture content.

For this analysis, emissions resulting from construction-related activities reflect conservative assumptions based on a construction scenario wherein construction would occur in a relatively intensive manner. Because of this conservative assumption, actual emissions would likely be less than those presented here. If construction were delayed or were to occur over a longer period of time, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less intensive build-out schedule (i.e., fewer daily emissions occurring over a longer time interval). The construction equipment mix and duration for each construction stage is detailed in the construction spreadsheets provided in Appendix 5-B.

Peak day criteria pollutant emissions associated with Alternative 1 (Project) construction activities are presented in Table 5-25. Peak day emissions for each construction phase were determined by summing emissions from those construction activities that overlap in the proposed construction schedule. In the case where more than one possible combination of activities would occur during the same phase, emissions were calculated for all possible combinations, and the combination producing the greatest emissions was reported.

Due to a lengthy construction period, Alternative 1 (Project) construction could overlap with Alternative 1 (Program) construction, specifically during process optimization of the WRPs. Peak day program and project emissions were estimated in each year during which construction from Alternative 1 (Project) and Alternative 1 (Program) could potentially overlap. The combination of peak day program and project emissions that would result in the greatest concurrent emissions is also shown in Table 5-25.

The concurrent peak day emissions from Alternative 1 construction, as reported in Table 5-25, would occur during different years for different pollutants. Concurrent peak day emissions of VOC, CO, PM_{10}, and $PM_{2.5}$ would occur during 2018 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, and onshore and offshore tunneling occurred concurrently. Concurrent peak day NO_X emissions would occur during 2016 and 2017 if construction of the onshore and offshore tunnels and the Trans Pacific Container Service Corporation (TraPac) shaft occurred concurrently. Concurrent peak day SO_X emissions would occur during 2016 if construction of the onshore and offshore tunnels, Los Angeles Export Terminal (LAXT) shaft, and the JWPCP East shaft occurred concurrently. Impacts would be significant for peak day VOC and NO_X emissions.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. Therefore, under NEPA, the impacts associated with construction of the combined program and project for Alternative 1 would be the same as for Alternative 1 (Project), and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. Impacts under NEPA are presented in Table 5-26. Impacts would be significant for VOC and NO_X emissions.

Table 5-26. Alternative 1 Under NEPA Peak Day Construction Emissions Without Mitigation

Time Period	Project Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
2015–2015	JWPCP East Shaft Site Construction	25	94	244	0	12	10
2016–2018	Onshore Tunnel Alignment	32	183	371	1	18	15
2016–2017	TraPac Shaft Site Construction	23	88	217	0	11	9
2015–2016	LAXT Shaft Site Construction	25	94	244	0	12	10
2016–2022	Offshore Tunnel Alignment	47	206	432	1	22	18
2015–2016	Southwest Marine Shaft Site Construction	25	94	244	0	12	10
2019–2021	SP Shelf Riser Construction	3	52	49	0	2	1
2021–2022	SP Shelf Diffuser Construction	16	86	148	0	4	4
2021–2022	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2016–2017	Peak Day Emissions[a]	92	477	1020	3	51	42
Significance Thresholds		75	550	100	150	150	55
NEPA Increment		92	477	1020	3	51	42
NEPA Significant?[b]		Yes	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day emissions would occur in 2016 and 2017 when construction of the TraPac shaft overlaps with both tunneling activities.

[b] The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. NEPA significance need not be determined for program and project concurrently because federal activities would occur under project only.

Operation

CEQA Analysis

Operations associated with Alternative 1 (Program) would result in increased solids handling at the JWPCP, increased capacity at the SJCWRP, operation of an additional emergency generator at the SJCWRP, and increased biosolids hauling from the JWPCP. Peak day criteria pollutant emissions associated with these operations are presented in Table 5-27. Note that biosolids would be hauled to various facilities in the region; therefore, emissions from hauling trucks are presented for each air district through which hauling trucks would transit. Operational emissions would result from program elements only; there would be no operational activities resulting in criteria pollutant emissions or impacts from Alternative 1 (Project). As shown in Table 5-27, impacts would be less than significant.

Table 5-27. Alternative 1 Under CEQA Peak Day Operational Emissions Without Mitigation

Program Element[a]	Peak Day Emissions (pounds per day)					
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
SCAB						
JWPCP Stationary Sources	159	363	508	111	141	140
SJCWRP Stationary Sources	31	12	7	0	1	1
SJCWRP Generator	1	2	2	0	0	0
Biosolids Hauling[b]	10	47	112	1	301	48
Total	201	425	628	112	443	189
CEQA Baseline	187	453	751	90	306	161
Thresholds	55	550	55	150	150	55
CEQA Increment[c]	15	-28	-123	21	137	28
CEQA Significant?	No	No	No	No	No	No

Table 5-27 (Continued)

Program Element[a]	Peak Day Emissions (pounds per day)					
	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
SDAB						
Biosolids Hauling[b]	2	9	21	0	56	9
CEQA Baseline	5	19	63	0	37	8
Thresholds	75	550	250	250	100	55
CEQA Increment[c]	-3	-10	-42	0	19	1
CEQA Significant?	No	No	No	No	No	No
SSAB						
Biosolids Hauling[b]	1	7	16	0	43	7
CEQA Baseline	4	14	48	0	29	6
Thresholds	55	550	55	150	150	55
CEQA Increment[c]	-2	-8	-32	0	14	1
CEQA Significant?	No	No	No	No	No	No
SJVAB[d]						
Biosolids Hauling[b]	1	4	10	0	26	4
CEQA Baseline	2	6	19	0	11	2
Thresholds	10	N/A	10	N/A	N/A	N/A
CEQA Increment[c]	-1	-2	-9	0	15	2
CEQA Significant?[e]	No	No	No	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] All program elements would ramp up to maximum operating levels over the life of the Alternative 1 (Program); emissions for all program elements presented reflect maximum operating levels in 2050 except for exhaust from biosolids hauling (see footnote [b]).

[b] Biosolids hauling trips were assumed to increase linearly and reach maximum trips in 2050. Emissions presented represent the year of maximum emissions, which is year 2050 for road dust and year 2020 for exhaust.

[c] The CEQA increment is negative in some cases. This is due to a decrease in emissions from heavy-duty biosolids hauling trucks. Although the number of trucks and vehicle miles travel increase in future years, the normal turnover of the truck fleet to cleaner trucks results in an emissions decrease.

[d] San Joaquin Valley Air Pollution Control District emission thresholds are in tons per year. Includes hauling to the future Westlake Farms Composting Facility in Kings County.

[e] CEQA significance determination reflects program elements only, on a regional basis, because there are no operational impacts for project elements.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. Operation of Alternative 1 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. There would be no impacts under NEPA.

CEQA Impact Determination

Construction of Alternative 1 would exceed SCAQMD's significance thresholds for construction-related emissions for VOC and NO_X, as presented in Table 5-25. Impacts under CEQA would be significant before mitigation. As presented in Table 5-27, operation of Alternative 1 would result in less than significant impacts.

Mitigation

Mitigation measures for construction were derived, where feasible, from SCAQMD mitigation measure tables (SCAQMD 2007b), LAHD Construction Guidelines (also part of the Port of Los Angeles' Clean Air Action Plan), and the Sanitation Districts. The following mitigation measures would be implemented at the start of the construction activity to reduce criteria pollutant emissions associated with construction.

Program

MM AQ-2a. All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap.

MM AQ-2b. All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap.

MM AQ-2c. Fully cover trucks hauling loose material, such as debris or fill, while operating off site.

MM AQ-2d. Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable.

MM AQ-2e. Route construction trucks away from congested streets or sensitive receptor areas as feasible.

Project

In addition to implementation of MM AQ-2a through MM AQ-2e, the following mitigation measures would also be applied to Alternative 1 (Project):

MM AQ-2f. Use harbor craft with the cleanest marine diesel engines available at the Port of Los Angeles.

MM AQ-2g. Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.

Residual Impacts

Implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions for Alternative 1. Specifically, the following reductions could be achieved through mitigation.

MM AQ-2a. This mitigation would exceed the CARB compliance schedule for on-road heavy-duty trucks shown in Table 5-11 and would address the larger on-road emitters of NO_X and PM. For the purposes of calculating mitigated emissions, a 2007 model year emissions profile was used.

MM AQ-2b. This mitigation would exceed EPA rules for in-use off-road diesel engines and would exceed CARB's compliance schedule and NO_X targets for off-road diesel fleets. Based on SCAQMD Mitigation Measure Tables II-D, II-E, and II-F (SCAQMD 2010b), this mitigation measure would achieve the following emission reductions in comparison with the engine that could have been used:

Table 5-28. Off-Road Engine Emission Rates, Percent Reductions From Tier 1 and Tier 2 to Tier 3 Engines

	Emissions Reduction Achieved (%)					
	Tier 1 to Tier 3			Tier 2 to Tier 3		
Engine Size (hp)	NO_X	ROG	PM	NO_X	ROG	PM
75–99	52	85	46	38	38	0
100–174	59	85	28	39	39	0
175–299	59	85	63	39	39	0
300–600	59	85	63	38	38	0

Should Tier 4 engines be commercially available prior to construction, such engines would be used where feasible. However, given the uncertainty of Tier 4 engines availability prior to the start of construction,

Tier 3 engines were assumed for the purposes of estimating mitigated emissions. Should Tier 4 engines be used, the emission reductions achieved would be as shown in Table 5-29.

Table 5-29. Off-Road Engine Emission Rates, Percent Reduction From Tier 1, Tier 2, and Tier 3 to Tier 4 Engines

	Emissions Reduction Achieved (%)								
	Tier 1 to Tier 4			Tier 2 to Tier 4			Tier 3 to Tier 4		
Engine Size (hp)	NO_X	ROG	PM	NO_X	ROG	PM	NO_X	ROG	PM
75–99	96	88	97	94	50	95	91	20	95
100–174	96	83	95	94	43	93	89	7	93
175–299	96	86	96	94	43	90	89	7	90
300–600	96	86	96	93	42	90	89	7	90

MM AQ-2f. For purposes of estimating mitigated emissions, Tier 3 engines are assumed given the uncertainty associated with Tier 4 marine engines being available at the Port of Los Angeles prior to the start of construction; emission reductions due to Tier 4 engines are not quantified in emission calculations.

MM AQ-2g. This mitigation measure would directly address the highest emissions source of NO_X associated with Alternative 1 (Project) by utilizing the cleanest locomotive engine commercially available. An electric engine was considered but found not to be viable due to the inability to stay charged given the number of trips back and forth in the tunnel; the distance; the need for a charging station in the tunnel where there is potential to encounter water during tunneling, creating a safety hazard; and the need to have an uninterrupted power source to transport excavated material and personnel. This mitigation would exceed the EPA emission standards applicable to in-use locomotive engines.

The remaining mitigation measures are not quantified in emission calculations.

Peak day criteria pollutant emissions associated with mitigated construction are presented in Table 5-30 for Alternative 1. Due to a lengthy construction period, Alternative 1 (Project) construction could overlap with Alternative 1 (Program) construction, specifically during process optimization of the WRPs. Concurrent peak day program and project emissions were estimated in each year during which construction from Alternative 1 (Project) and Alternative 1 (Program) could potentially overlap. The combination of peak day program and project emissions that would result in the greatest concurrent emissions is reported in Table 5-30.

Table 5-30. Alternative 1 Under CEQA Peak Day Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	Element	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Program							
2018–2050	JWPCP Solids Processing	2	29	16	0	21	5
2018–2028	SJCWRP Process Optimization	2	29	16	0	8	2
2018–2028	POWRP Process Optimization	1	20	13	0	3	1
2018–2028	LCWRP Process Optimization	2	28	15	0	5	2
2018–2028	LBWRP Process Optimization	1	28	14	0	5	2
2035–2040	SJCWRP Plant Expansion	1	21	10	0	12	3
2018–2028	Peak Day Emissions[a]	8	133	73	0	41	12

Table 5-30 (Continued)

Time Period	Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Project							
2015–2015	JWPCP East Shaft Site Construction	8	68	81	0	5	4
2016–2018	Onshore Tunnel Alignment	16	147	125	1	8	5
2016–2017	TraPac Shaft Site Construction	8	67	78	0	5	4
2015–2016	LAXT Shaft Site Construction	8	68	81	0	5	4
2016–2022	Offshore Tunnel Alignment	18	161	155	1	9	6
2015–2016	Southwest Marine Shaft Site Construction	8	68	81	0	5	4
2019–2021	SP Shelf Riser Construction	3	51	42	0	1	1
2021–2022	SP Shelf Diffuser Construction	5	85	44	0	3	2
2021–2022	Existing Ocean Outfalls Rehabilitation	1	29	20	0	1	1
2016–2017	Peak Day Emissions[b]	41	375	358	2	22	15
Concurrent Peak Day Emissions[c]		41	375	358	2	58	23
Significance Thresholds		75	550	100	150	150	55
CEQA Increment[d]		41	375	358	2	58	23
CEQA Significant?		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day program construction emissions would occur during 2018 through 2028 if JWPCP solids processing and process optimization at the WRPs were constructed at the same time.

[b] Peak day project construction emissions would occur in 2016 and 2017 when TraPac shaft site construction overlaps with both tunneling activities.

[c] Concurrent peak day emissions of VOC, CO, NO_X, and SO_X would occur in 2016 and 2017 if construction of the onshore and offshore tunnels and the TraPac shaft site occurred concurrently. Concurrent peak day PM_{10} and $PM_{2.5}$ emissions would occur during 2018 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, and onshore and offshore tunnels occurred concurrently.

[d] CEQA increment is equivalent to maximum concurrent peak day emissions because the CEQA baseline is zero for new construction.

The peak day emissions from concurrent project and program construction, as reported in Table 5-30, would occur during different years for different pollutants. Concurrent peak day emissions of VOC, CO, NO_X, and SO_X would occur in 2016 and 2017 if construction of the onshore and offshore tunnels and the TraPac shaft site occurred concurrently. Concurrent peak day PM_{10} and $PM_{2.5}$ emissions would occur during 2018 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, and onshore and offshore tunnels occurred concurrently.

The CEQA residual impact determination for construction is made on a regional level for Alternative 1 in Table 5-30. Although implementation of the mitigation measures would reduce emissions, NO_X would still exceed the SCAQMD significance threshold following mitigation for Alternative 1 under CEQA. Therefore, residual impacts would be significant and unavoidable on a regional level during construction. Impacts would be less than significant during operation.

NEPA Impact Determination

Construction of Alternative 1 would exceed the SCAQMD significance threshold for construction-related emissions for VOC and NO_X, as presented in Table 5-26. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 1 would result in no impacts.

Mitigation

Program
Implement MM AQ-2a through MM AQ-2e.

Project
Implement MM AQ-2a through MM AQ-2g.

Residual Impacts

Implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions for Alternative 1. See residual impacts under the CEQA impact determination for reductions that could be achieved through MM AQ-2a through MM AQ-2g.

Peak day criteria pollutant emissions associated with mitigated construction are presented in Table 5-31 for Alternative 1.

Table 5-31. Alternative 1 Under NEPA Peak Day Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	**Project Element**	**VOC**	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP East Shaft Site Construction	8	68	81	0	5	4
2016–2018	Onshore Tunnel Alignment	16	147	125	1	8	5
2016–2017	TraPac Shaft Site Construction	8	67	78	0	5	4
2015–2016	LAXT Shaft Site Construction	8	68	81	0	5	4
2016–2022	Offshore Tunnel Alignment	18	161	155	1	9	6
2015–2016	Southwest Marine Shaft Site Construction	8	68	81	0	5	4
2019–2021	SP Shelf Riser Construction	3	51	42	0	1	1
2021–2022	SP Shelf Diffuser Construction	5	85	44	0	3	2
2021–2022	Existing Ocean Outfalls Rehabilitation	1	29	20	0	1	1
2016–2017	Peak Day Emissions[a]	41	375	358	2	22	15
Significance Thresholds		75	550	100	150	150	55
NEPA Increment		41	375	358	2	22	15
NEPA Significant?[b]		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day construction emissions would occur in 2016 and 2017 when TraPac shaft site construction overlaps with both tunneling activities.

[b] The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. NEPA significance need not be determined for program and project concurrently because federal activities would occur under project only.

As shown in Table 5-31, although implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions, NO_X emissions would continue to exceed the SCAQMD significance threshold following mitigation for Alternative 1 under NEPA. Therefore, residual impacts would be significant and unavoidable during construction. There would be no impacts during operation.

5.4.3.2 Program

Impacts AQ-3, AQ-4, and AQ-6 are evaluated on a localized level and thus analyzed separately for program and project.

Impact AQ-3. Would Alternative 1 (Program) result in emissions in excess of SCAQMD's Localized Significance Thresholds?

SCAQMD has developed a set of mass emissions rate look-up tables that can be used to evaluate localized impacts for NO_X, CO, PM_{10}, and $PM_{2.5}$ resulting from construction and operational onsite emissions. VOC does not have an ambient air quality standard and is, therefore, not addressed in the LST methodology. LSTs represent the maximum emissions from a project that would not cause or contribute to an exceedance the NAAQS or CAAQS at the nearest human receptor, taking into account ambient concentrations in each source receptor area (SRA), project site, and distance to the receptor. If onsite emissions from proposed construction are below the LST emission levels found in the LST mass rate look-up tables for the project site's SRA, then project emissions are not expected to cause a significant localized air quality impact.

Per SCAQMD's policy, only onsite emissions were considered for purposes of comparison with the LST mass rate look-up tables (i.e., consistent with SCAQMD LST Guidelines, offsite delivery/haul truck activity and employee trips were not considered in the evaluation of localized impacts).

San Jose Creek Water Reclamation Plant – Plant Expansion; San Jose Creek Water Reclamation Plant, Pomona Water Reclamation Plant, Los Coyotes Water Reclamation Plant, and Long Beach Water Reclamation Plant – Process Optimization; Joint Water Pollution Control Plant – Solids Processing

Construction

The LST methodology requires the knowledge of receptor distances from the source. Existing sensitive receptor locations surrounding the various WRPs and the JWPCP are known, but may change in the future with future development. The distance to each site's nearest existing sensitive receptor is summarized in Table 5-21 and shown on Figures 5-5 to 5-9.

Per SCAQMD's guidance, only onsite construction emissions were considered for the purpose of comparison with the LST mass rate look-up tables. Onsite construction emissions for the Alternative 1 (Program) elements are presented in Table 5-32. Impacts would be less than significant.

Table 5-32. Alternative 1 (Program) Localized Construction Emissions Without Mitigation

		Peak Day Emissions (pounds per day)			
Time Period	**Program Element**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
2035–2040	SJCWRP Plant Expansion	18	24	12	3
	SCAQMD LSTs[a]	1,113	53	29	9
	CEQA Increment	18	24	12	3
	CEQA Significant?	No	No	No	No
2018–2020	SJCWRP Process Optimization	23	32	8	3
	SCAQMD LSTs[a]	673	46	13	5
	CEQA Increment	23	32	8	3
	CEQA Significant?	No	No	No	No
2018–2019	POWRP Process Optimization	15	22	3	1
	SCAQMD LSTs[a]	911	72	57	18
	CEQA Increment	15	22	3	1
	CEQA Significant?	No	No	No	No

Table 5-32 (Continued)

Time Period	Program Element	Peak Day Emissions (pounds per day)			
		CO	NO_X	PM_{10}	$PM_{2.5}$
2018–2019	LCWRP Process Optimization	23	32	5	2
	SCAQMD LSTs[a]	735	45	27	4
	CEQA Increment	23	32	5	2
	CEQA Significant?	No	No	No	No
2018–2019	LBWRP Process Optimization	23	32	5	2
	SCAQMD LSTs[a]	585	32	61	26
	CEQA Increment	23	32	5	2
	CEQA Significant?	No	No	No	No
2018–2050	JWPCP Solids Processing	23	31	21	5
	SCAQMD LSTs[a]	1,982	66	58	18
	CEQA Increment	23	31	21	5
	CEQA Significant?	No	No	No	No

[a] LSTs are based on distances to receptors and site acreages, presented in Table 5-21. NO_X LST was scaled to reflect the federal NO_2 standard.

Operation

Alternative 1 (Program) would result in the expansion and addition of an emergency generator at the SJCWRP, as well as increased solids handling at the JWPCP. The additional emergency generator at the SJCWRP would comply with SCAQMD Rules 1470 and 1472, and the control strategy, if any were required, would be identified at the time of permitting.

Although the locations of construction activities associated with the SJCWRP expansion and increased solids handling at the JWPCP were known at the time of the analysis, the specific locations of future sources of emissions (flares, boilers, emergency generator) were not. Localized air quality impacts are dependent upon the specific geographic location of the source of emissions and the nearest receptors. Because Alternative 1 (Program) emission source locations were unknown at the time of this analysis, specifying distances from those future sources to receptors would be speculative. In addition, sources associated with Alternative 1 (Program) would require SCAQMD permitting; a full analysis would be conducted during permitting. As such, no determination of significance is made at this time. Any impacts resulting from operations of plant expansion and solids processing will be assessed in a subsequent CEQA document. Process optimization would involve the operation of electrical pumps; therefore, there would be no operational emissions associated with process optimization.

Joint Water Pollution Control Plant – Biosolids Management

Operation

The SCAQMD does not recommend the use of the LST methodology to evaluate mobile sources. However, biosolids management would require the use of only 20 additional trucks per day from the JWPCP to beneficial use and landfill locations. Although some criteria pollutant emissions would be released, the emissions would be associated with a small number of trucks and the trucks would be transient. These mobile sources would be too low to affect localized ambient air quality. Impacts would be less than significant.

CEQA Impact Determination

As presented in Table 5-32, construction of Alternative 1 (Program) would not result in emissions in excess of SCAQMD's LSTs. Impacts would be less than significant. Operation of process optimization at the SJCWRP, POWRP, LCWRP, and LBWRP would result in no impacts. Operation of biosolids management at the JWPCP would result in less than significant impacts. No determination of significance was made at this time for operation of plant expansion at the SJCWRP and of solids processing facilities at the JWPCP for Alternative 1 (Program).

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact AQ-4. Would Alternative 1 (Program) emissions create an objectionable odor at the nearest offsite receptor?

Impact AQ-4 addresses the potential generation of odors during program construction and operation and whether such odors would affect nearby offsite receptors. Potential sources of odors during construction activities would arise from equipment exhaust. Odors from these sources would be localized and generally confined to the construction site. Typical construction techniques would be utilized, and the odors would be typical of most construction sites. Additionally, the odors would be temporary, occurring when equipment is operating. Construction activities would be required to comply with SCAQMD's Nuisance Rule 402 and as such would not create a significant level of objectionable odors.

The Sanitation Districts have an extensive odor control program to strategically control odors during operation of their facilities. These programs would continue to be in place during future improvements identified under the program, as discussed herein.

San Jose Creek Water Reclamation Plant – Plant Expansion and Process Optimization

Construction

Construction activities associated with plant expansion and process optimization at the SJCWRP would be localized, temporary, and typical of most construction sites. Construction activities would be required to comply with SCAQMD's Nuisance Rule 402 and, as such, would not create a significant level of objectionable odors. Impacts during construction would be less than significant.

Operation

The primary source of odors at wastewater facilities is hydrogen sulfide, which is generated from bacteria in the wastewater where oxygen levels are very low.

Current odor control technology employed at the SJCWRP consists of a combination of process covers and seals, and optimum ventilation rates. Where necessary, additional odor control measures are taken, such as the use of activated carbon absorbers and chemical treatment of wastewater. There have been no odor violations from operation of the SJCWRP between the years 2003 and 2010 (SCAQMD 2012). Plant expansion and process optimization could potentially be a source of odors. The current odor control

technologies would continue to be implemented. In addition, the SJCWRP would adhere to SCAQMD rules and regulations.

As shown on Figure 5-2, winds near the SJCWRP are predominately from the northwest and west-northwest. Therefore, in the case that odors are emitted from the SJCWRP, receptors located southeast and east-southeast of the project site would be the most likely to be exposed to odors. However, given the various odor controls as well as compliance with SCAQMD rules (including Rules 402), nuisance odors are not expected to result from process optimization and plant expansion at the SJCWRP. Impacts would be less than significant.

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

Construction

Construction activities associated with process optimization at the POWRP, LCWRP, and LBWRP would be localized, temporary, and typical of most construction sites. Construction activities would be required to comply with SCAQMD's Nuisance Rule 402 and, as such, would not create a significant level of objectionable odors. Impacts during construction would be less than significant.

Operation

Current odor control technology employed at the POWRP, LCWRP, and LBWRP consists of a combination of process covers and seals, and optimum ventilation rates. Where necessary, additional odor control measures are taken, such as the use of activated carbon absorbers and chemical treatment of wastewater. There are no odor violations from operation of the POWRP, LCWRP, and LBWRP between the years 2003 and 2010 (SCAQMD 2012). Process optimization could potentially be a source of odors. The current odor control technologies would continue to be implemented. In addition, the POWRP, LCWRP, and LBWRP would adhere to SCAQMD rules and regulations.

As shown on Figure 5-2, winds near the POWRP are predominately from the northwest and west-northwest. Therefore, in the case that odors are emitted from the POWRP, receptors located southeast and east-southeast of the project site would be the most likely to be exposed to odors. As shown on Figure 5-3, winds near the LCWRP are predominately from the west-southwest. Therefore, in the case that odors are emitted from the LCWRP, receptors located east-northeast of the project site would be the most likely to be exposed to odors. As shown on Figure 5-4, winds near the LBWRP are predominately from the west-southwest. Therefore, in the case that odors are emitted from the LBWRP, receptors located east-northeast of the project site would be the most likely to be exposed to odors. However, given the various odor control technologies as well as compliance with SCAQMD rules, nuisance odors are not expected to result from process optimization at the POWRP, LCWRP, and LBWRP. Impacts would be less than significant.

Joint Water Pollution Control Plant – Solids Processing

Construction

Construction activities associated with solids processing at the JWPCP would be localized, temporary, and typical of most construction sites. Construction activities would be required to comply with SCAQMD's Nuisance Rule 402 and, as such, would not create a significant level of objectionable odors. Impacts during construction would be less than significant.

Operation

The Sanitation Districts have made considerable investments in odor control efforts and have conducted odor control research at the JWPCP. Several areas within primary treatment have been retrofitted with tight, flat, gasketed, aluminum covers. Air trapped underneath the sedimentation tank covers, skimmings trough covers, and primary effluent channel covers is directed to a two-stage process that includes biotrickling scrubbers followed by activated carbon. Foul air from solids processing is collected and transported to two independent biofilter treatment systems (Sanitation Districts 2010a).

The JWPCP also utilizes a community relations program, which includes a 24-hour odor complaint hotline, immediate response to complaints, newsletters to the public, community meetings, and a citizens' advisory committee, which provides a forum for community input (Sanitation Districts 2010b). Plant personnel immediately follow up on odor complaints and efforts are made to determine the source of the odor. Although the proposed sludge dewatering and stabilization could potentially be a source of odors, the odor control technologies already in place have proven to be effective in their control. The current odor control technologies would continue to be implemented. In addition, the JWPCP would adhere to SCAQMD rules and regulations.

As shown on Figure 5-4, winds near the JWPCP are predominately from the west. Therefore, in the case that odors are emitted from the JWPCP, receptors located east of the project site would be the most likely to be exposed to odors. However, given the extensive odor control systems at the JWPCP and the continued compliance with SCAQMD rules, nuisance odors are not expected to result from solids processing at the JWPCP. Impacts would be less than significant.

Joint Water Pollution Control Plant – Biosolids Management

Operation

Increased solids processing at the JWPCP would result in an increase in the number of biosolids hauling truck trips, which would primarily be in the form of diesel-powered heavy-duty trucks. Some individuals might find diesel combustion emissions to be objectionable in nature, although quantifying the odorous impacts of these emissions on the public is difficult. The mobile nature of transportation emission sources operating both onsite and offsite would help to disperse diesel emissions. As shown on Figure 5-4, winds near the JWPCP are predominately from the west. However, the distance between these emission sources and receptors is expected to be far enough to disperse these emissions and to reduce their impact to below objectionable odor levels. Impacts would be less than significant.

CEQA Impact Determination

Construction and operation of Alternative 1 (Program) would not create objectionable odors at offsite receptors. Impacts would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact AQ-6. Would Alternative 1 (Program) expose the public to significant levels of toxic air contaminants?

San Jose Creek Water Reclamation Plant – Plant Expansion; San Jose Creek Water Reclamation Plant, Pomona Water Reclamation Plant, Los Coyotes Water Reclamation Plant, and Long Beach Water Reclamation Plant – Process Optimization; Joint Water Pollution Control Plant – Solids Processing

Construction

The greatest potential for construction-related TAC emissions would be from diesel particulate emissions associated with heavy equipment operations during site grading activities. Construction activities are short-term in nature and, as such, the cancer risk exposure from diesel-related construction equipment is also short-term. The construction activities associated with Alternative 1 (Program) may potentially take up to 31 years, but would occur in various locations throughout the SCAB, so they would not overlap or impact a common receptor. Furthermore, construction activities in any single location would be transitory and short-term. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period at any given location, construction of Alternative 1 (Program) is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. Impacts would be less than significant.

Operation

Alternative 1 (Program) would change facility operations at the JWPCP due to solids processing and SJCWRP plant expansion only. The potential for TAC emissions due to program operations at these facilities are discussed herein. Process optimization would involve the operation of electrical pumps, which would not result in TAC pollutants. Therefore, there would be no impacts due to process optimization.

Operation-related TAC emissions for the JWPCP were scaled based on the SCAQMD Rule 1402 facility-wide quantitative health risk analysis (HRA) prepared as part of Assembly Bill 2588 reporting requirements (Sanitation Districts 2006a) and the AERs submitted to the SCAQMD by the Sanitation Districts. The 2006 HRA contained three components: individual lifetime cancer risk, chronic noncancer hazard index, and acute noncancer hazard index. Individual lifetime cancer risk is the additional chance for a person to contract cancer after a lifetime of exposure to program emissions. The "lifetime" exposure duration assumed in this HRA is 70 years for a residential receptor, assuming the receptor is exposed to emissions for 24 hours a day along with other assumptions that tend to overstate the risk. The chronic hazard index is a ratio of the long-term average concentrations of TACs in the air to established reference exposure levels. A chronic hazard index below 1.0 indicates that adverse noncancer health effects from long-term exposure are not expected. Similarly, the acute hazard index is a ratio of the short-term average concentrations of TACs in the air to established reference exposure levels. An acute hazard index below 1.0 indicates that adverse noncancer health effects from short-term exposure are not expected.

The JWPCP 2008 baseline was established by comparing the emissions reported in the 2008 AER to the emissions reported in the 2004/05 AER because the 2006 HRA was based on 2004/2005 AER emissions. The emission sources affected by Alternative 1 (Program) were scaled from the 2008 levels based on the expected potential increase in population and solids handling to the JWPCP service area of 23 percent (Sanitation Districts 2008a). The results of this comparison are presented in Table 5-33. Impacts would be less than significant.

Table 5-33. Alternative 1 (Program) Cancer and Hazard Index Impacts Without Mitigation

Year/Analysis	Residential Cancer Risk (per million)	Offsite Worker Cancer Risk (per million)	Chronic Hazard Index	Acute Hazard Index
JWPCP Solids Processing				
2006 HRA	7.20	1.83	0.031	0.17
2008 Baseline	5.28[b]	1.34	0.023	0.12
2050 Buildout	6.28	1.60	0.027	0.15
CEQA Increment	1.00	0.26	0.004	0.03
SCAQMD Threshold	10	10	1.0	1.0
CEQA Significant?	No	No	No	No
SJCWRP Plant Expansion				
2003 HRA[a]	2.3	N/A	N/A	N/A
2008 Baseline	1.8[b]	N/A	N/A	N/A
2050 Buildout	3.1			
CEQA Increment	1.4	N/A	N/A	N/A
SCAQMD Threshold	10	10	1.0	1.0
CEQA Significant?	No	N/A	N/A	N/A

[a] SJCWRP 2003 HRA evaluated the maximum individual cancer risk only.
[b] Decreases are a result of lower wastewater flows (facility throughput)
Source: Sanitation Districts 2006a; Sanitation Districts 2003; SCAQMD 2005; SCAQMD 2009c

Operation-related cancer risk for the SJCWRP was scaled based on the 2.3 in a million cancer risk determined in the latest available 2003 SJCWRP HRA (Sanitation Districts 2003). It was assumed that cancer risk would be directly proportional to facility throughput. The SJCWRP 2008 baseline was, therefore, established by scaling 2003 facility throughput by 2008 throughput. Throughput at the SJCWRP was 93.6 MGD in 2003. The flow decreased in 2008 to 72 MGD.

Expansion of the plant under Alternative 1 (Program) would add an emergency generator and increase wastewater treatment capacity at the SJCWRP West plant to 125 MGD (an increase of 74 percent from the 2008 baseline). This expansion increase would in turn affect DPM emissions from the emergency generator and volatile TAC emissions associated with wastewater treatment. Applying the flow increase associated with plant expansion to the documented cancer risk would result in a 1.3 in a million increase in cancer risk and a total facility cancer risk of 3.1 in a million. This approach conservatively assumes that all sources would be equally affected by the plant expansion. In actuality, only sources affected by the SJCWRP West expansion would contribute to an increase in cancer risk. Therefore, this methodology represents a conservative estimate of cancer risk. A more refined screening methodology that considers only those sources affected by the SJCWRP West expansion would result in a health risk smaller than that identified here.

It should also be noted that HRA methodology has changed since the time of the 2003 SJCWRP HRA. Health effects values (e.g., reference exposure levels) and exposure pathway variates (e.g., breathing rates) have been updated by the Office of Environmental Health Hazard Assessment (OEHHA), the agency tasked with developing HRA guidelines. Air dispersion modeling software used to evaluate the dispersion of air contaminants has also changed. These changes, if applied to an individual HRA, may result in a different cancer risk determination. However, if the same changes are applied to both the baseline and the proposed activities, the CEQA increment and subsequent CEQA significance determination would likely not change.

Joint Water Pollution Control Plant – Biosolids Management

Operation

Biosolids management would require the use of only 20 additional trucks per day from the JWPCP to beneficial use and landfill locations. Although some DPM would be released, the emissions would be associated with a small number of trucks and the trucks would be transient. These mobile sources would be too low to affect chronic or nonchronic health impacts. Impacts would be less than significant.

CEQA Impact Determination

Construction and operation of Alternative 1 (Program) would not expose the public to significant levels of TACs. Impacts would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant. Although impacts would be less than significant and no mitigation is required, implementation of MM AQ-2a through MM AQ-2e under Impact AQ-2 would further reduce exposure to TACs.

5.4.3.3 Project

Impacts AQ-3, AQ-4, and AQ-6 are evaluated on a localized level and, thus, analyzed separately for project and program.

Impact AQ-3. Would Alternative 1 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore and Offshore); Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine; Riser/Diffuser Area – San Pedro Shelf and Existing Ocean Outfalls

Construction

CEQA Analysis

As previously discussed in Section 5.4.3.2 under Impact AQ-3, the LST methodology requires the knowledge of receptor distances from the source. Existing sensitive receptor locations surrounding the various project construction sites are known, but may change in the future with future development. The distance to each site's nearest existing sensitive receptor is summarized in Table 5-21 and shown on Figures 5-10 to 5-19.

Per SCAQMD's policy, only onsite construction emissions at the shaft and access sites were considered for purposes of comparison with the LST mass rate look-up tables. These emissions consist of emissions from construction of the shaft sites themselves as well as emissions from tunneling activities associated with those sites, which although would take place off site, would emit through the tunnel openings at the shaft sites and are, for the purpose of this document, considered onsite construction emissions. The construction of shaft sites would occur prior to tunneling associated with those sites. Therefore, construction of sites and tunneling associated with those sites were considered as separate localized events.

Under this alternative, after completion of the LAXT shaft site, two TBMs would tunnel concurrently, moving north and south from the LAXT shaft site. As the TBMs bore through the tunnel alignment, emissions would travel from the back of the TBM through the tunnel and be released at the tunnel opening at the nearest shaft site. All tunneling emissions, from the northbound and southbound tunnels, would be emitted at the LAXT shaft site until the northbound TBM passes the TraPac site and the southbound TBM passes the Southwest Marine site. Once the northbound TBM passes the TraPac site, emissions from the northbound tunnel would be emitted at the TraPac site. Once the southbound TBM passes the Southwest Marine site, emissions from the southbound tunnel would be emitted at the Southwest Marine site. Accordingly, all onshore tunnel emissions would be localized at the TraPac shaft site, and all offshore tunnel emissions would be localized at the LAXT and Southwest Marine shaft sites.

Onsite construction emissions for Alternative 1 (Project) elements are presented in Table 5-34. Impacts would be significant for NO_X at the JWPCP East, TraPac, LAXT, and Southwest Marine shaft sites during site construction. Impacts would also be significant for NO_X for the onshore tunnel, with emissions localized at the TraPac shaft site, and for the offshore tunnel, with emissions localized at the LAXT and Southwest Marine shaft sites.

The Alternative 1 (Project) riser and diffuser area is located several miles out to sea at the edge of the San Pedro Shelf (SP Shelf). The existing ocean outfalls are also located out to sea at the edge of the Palos Verdes Shelf (PV Shelf). Because there are no sensitive receptors within the LST methodology limit of 1,640 feet (500 meters) of these construction areas, per SCAQMD LST methodology, there is no potential for localized construction emissions to affect sensitive receptors.

Table 5-34. Alternative 1 (Project) Localized Construction Emissions Without Mitigation

		Peak Day Emissions (pounds per day)			
Time Period	**Project Element**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP East Shaft Site Construction	40	97	4	3
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,982	66	58	10
	CEQA/NEPA Increment	40	97	4	3
	CEQA/NEPA Significant?	No	Yes	No	No
2016–2017	TraPac Shaft Site Construction	39	88	4	3
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,180	38	29	10
	CEQA/NEPA Increment	39	88	4	3
	CEQA/NEPA Significant?	No	Yes	No	No
2015–2016	LAXT Shaft Site Construction	40	97	4	3
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,982	66	191	120
	CEQA/NEPA Increment	40	97	4	3
	CEQA/NEPA Significant?	No	Yes	No	No
2015–2016	Southwest Marine Shaft Site Construction	40	97	4	3
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	585	32	13	5
	CEQA/NEPA Increment	40	97	4	3
	CEQA/NEPA Significant?	No	Yes	No	No

Table 5-34 (Continued)

Time Period	Project Element	Peak Day Emissions (pounds per day)			
		CO	NO_X	PM_{10}	$PM_{2.5}$
2016–2018[b]	Onshore Tunneling Emissions at the TraPac Shaft Site	86	148	6	5
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs	1,180	38	29	10
	CEQA/NEPA Increment	86	148	6	5
	CEQA/NEPA Significant?	No	Yes	No	No
2016–2018[b]	Offshore Tunneling Emissions at the LAXT Shaft Site	171	296	12	10
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,982	66	191	120
	CEQA/NEPA Increment	171	296	12	10
	CEQA/NEPA Significant?	No	Yes	No	No
2016–2018[b]	Offshore Tunneling Emissions at the Southwest Marine Shaft Site	86	148	6	5
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs	585	32	13	5
	CEQA/NEPA Increment	86	148	6	5
	CEQA/NEPA Significant?	No	Yes	No	No

CEQA and NEPA baselines are zero for new construction at each construction location.

[a] LSTs are based on distances to receptors and site acreages, presented in Table 5-21. NO_X LST was scaled to reflect the federal NO_2 standard.

[b] The time period for tunnel construction includes both the onshore and offshore segments. Tunneling at each shaft site would not occur until after construction of the shaft, which is required to facilitate tunnel construction.

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.

Operation

CEQA Analysis

Operation of Alternative 1 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. There would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure.

CEQA Impact Determination

As presented in Table 5-34, construction of the onshore and offshore tunnel, and at the JWPCP East, TraPac, LAXT, and Southwest Marine shaft sites for Alternative 1 (Project) would result in emissions in excess of SCAQMD's LST for NO_X. Impacts under CEQA would be significant before mitigation. Operation of Alternative 1 (Project) would result in no impacts.

Mitigation

Implement MM AQ-3a through MM AQ-3e and MM AQ-3g (same as MM AQ-2a through MM AQ-2e and MM AQ-2g).

Residual Impacts

Implementation of MM AQ-3a through MM AQ-3e and MM AQ-3g would reduce construction impacts to below SCAQMD LSTs for all pollutants for Alternative 1 (Project). Localized criteria pollutant emission associated with mitigated construction for Alternative 1 (Project) are presented in Table 5-35. Residual impacts would be less than significant.

Table 5-35. Alternative 1 (Project) Localized Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)			
Time Period	**Project Element**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP East Shaft Site Construction	40	17	2	2
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,982	66	58	10
	CEQA/NEPA Increment	40	17	2	2
	CEQA/NEPA Significant?	No	No	No	No
2016–2017	TraPac Shaft Site Construction	39	16	2	2
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,180	38	29	10
	CEQA/NEPA Increment	39	16	2	2
	CEQA/NEPA Significant?	No	No	No	No
2015–2016	LAXT Shaft Site Construction	40	17	2	2
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,982	66	191	120
	CEQA/NEPA Increment	40	17	2	2
	CEQA/NEPA Significant?	No	No	No	No
2015–2016	Southwest Marine Shaft Site Construction	40	17	2	2
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	585	32	13	5
	CEQA/NEPA Increment	40	17	2	2
	CEQA/NEPA Significant?	No	No	No	No
2016–2018[b]	Onshore Tunneling Emissions at the TraPac Shaft Site	86	17	2	1
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,180	38	29	10
	CEQA/NEPA Increment	86	17	2	1
	CEQA/NEPA Significant?	No	No	No	No
2016–2018[b]	Offshore Tunneling Emissions at the LAXT Shaft Site	171	33	4	3
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,982	66	191	120
	CEQA/NEPA Increment	171	33	4	3
	CEQA/NEPA Significant?	No	No	No	No
2016–2018[b]	Offshore Tunneling Emissions at the Southwest Marine Shaft Site	806	17	2	1
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	585	32	13	5
	CEQA/NEPA Increment	86	17	2	1
	CEQA/NEPA Significant?	No	No	No	No

CEQA and NEPA baselines are zero for new construction at each construction location.

[a] Distances to receptors and site acreages are presented in Table 5-21. NO_X LST was scaled to reflect the federal NO_2 standard.

[b] The time period for tunnel construction includes both the onshore and offshore segments. Tunneling at each shaft site would not occur until after construction of the shaft, which is required to facilitate tunnel construction.

NEPA Impact Determination

As presented in Table 5-34, construction of the onshore and offshore tunnel, and at the JWPCP East, TraPac, LAXT, and Southwest Marine shaft sites for Alternative 1 (Project) would result in emissions in excess of SCAQMD's LST for NO_X. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 1 (Project) would result in no impacts.

Mitigation

Implement MM AQ-3a through MM AQ-3e and MM AQ-3g (same as MM AQ-2a through MM AQ-2e and MM AQ-2g).

Residual Impacts

Residual impacts would be less than significant as shown in Table 5-35.

Impact AQ-4. Would Alternative 1 (Project) emissions create an objectionable odor at the nearest offsite receptor?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore and Offshore); Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine; Riser/Diffuser Area – San Pedro Shelf and Existing Ocean Outfalls

Construction

CEQA Analysis

Diesel exhaust from off-road construction equipment, the tunnel locomotive, and on-road heavy-duty haul trucks would be the main sources of odors during construction activities at the shaft sites and tunneling activities. Odors from these sources would be localized and generally confined to the shaft site vicinity. The odors would be typical of most construction sites and would be temporary in nature. Additionally, because there are no human receptors near the ocean outfalls, there would be no impacts associated with construction of the riser and diffuser or rehabilitation of the existing ocean outfalls. 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.

Operation

CEQA Analysis

Under operating conditions, the tunnel would convey treated effluent from the JWPCP to the Pacific Ocean in a closed, self-contained system. The access covers at the shaft sites would typically be closed and sealed. Additionally, because there are no human receptors near the ocean outfalls, there would be no impacts associated with operation of the proposed riser and diffuser or existing ocean outfalls. Therefore, no odors would occur under operating conditions. 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 project.

CEQA Impact Determination

Construction and operation of Alternative 1 (Project) would not create objectionable odors at the nearest offsite receptor. 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 create an objectionable odor at the nearest offsite receptor. 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 AQ-6. Would Alternative 1 (Project) expose the public to significant levels of toxic air contaminants?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore and Offshore); Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine; Riser/Diffuser Area – San Pedro Shelf and Existing Ocean Outfalls

Construction

CEQA Analysis

The greatest potential for construction-related TAC emissions would be from diesel particulate emissions associated with heavy equipment operations during site grading activities. Diesel-fueled equipment would be compliant with applicable emission standards, several of which are intended to lower DPM emissions. Construction activities are short-term in nature and, as such, the cancer risk exposure from diesel-related construction equipment is also short-term. The construction activities associated with Alternative 1 (Project) would take approximately 8 years, but would occur in various locations throughout the SCAB, so they would not overlap or impact a common receptor. Construction activities in any single location would be transitory and short-term. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period at any given location, construction of Alternative 1 (Project) is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. 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.

Operation

CEQA Analysis
Alternative 1 (Project) activities would not result in operational emissions, and 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 of Alternative 1 (Project) would not expose the public to significant levels of TACs. Impacts under CEQA would be less than significant. Operation of Alternative 1 (Project) would result in no impacts.

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant. Although impacts would be less than significant and no mitigation is required, implementation of MM AQ-2a through MM AQ-2g under Impact AQ-2 would further reduce exposure to TACs.

NEPA Impact Determination

Construction of Alternative 1 (Project) would not expose the public to significant levels of TACs. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 1 (Project) would result in no impacts.

Mitigation
No mitigation is required.

Residual Impacts
Impacts would be less than significant as discussed under the CEQA impact determination.

5.4.3.4 Impact Summary – Alternative 1

Impacts on air quality analyzed in this EIR/EIS for Alternative 1 are summarized in Table 5-36, Alternative 1; Table 5-37, Alternative 1 (Program); and Table 5-38, Alternative 1 (Project). The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the tables.

Table 5-36. Impact Summary – Alternative 1

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Impact AQ-1. Would Alternative 1 conflict with or obstruct implementation of the applicable air quality management plan?		
CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
NEPA Less Than Significant Impact During Construction	No mitigation is required.	NEPA Less Than Significant Impact During Construction
CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
NEPA No Impact During Operation	No mitigation is required.	NEPA No Impact During Operation
Impact AQ-2. Would Alternative 1 emissions exceed SCAQMD daily significance thresholds for construction- and/or operation-related emissions?		
CEQA Significant Impact During Construction	**Program** MM AQ-2a. All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap. MM AQ-2b. All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap. MM AQ-2c. Fully cover trucks hauling loose material, such as debris or fill, while operating off site. MM AQ-2d. Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-2e. Route construction trucks away from congested streets or sensitive receptor areas as feasible. **Project** MM AQ-2a through MM AQ-2e MM AQ-2f**.** Use harbor craft with the cleanest marine diesel engines available at the Port of Los Angeles. MM AQ-2g. Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	CEQA Significant and Unavoidable Impact During Construction

Table 5-36 (Continued)

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
NEPA Significant Impact During Construction	MM AQ-2a through MM AQ-2g	NEPA Significant and Unavoidable Impact During Construction
CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
NEPA No Impact During Operation	No mitigation is required.	NEPA No Impact During Operation

Table 5-37. Impact Summary – Alternative 1 (Program)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Impact AQ-3. Would Alternative 1 (Program) result in emissions in excess of SCAQMD's Localized Significance Thresholds?			
SJCWRP			
Plant Expansion	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA N/A During Operation	N/A	CEQA N/A 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 N/A During Operation	N/A	CEQA N/A During Operation
Biosolids Management	CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation

Table 5-37 (Continued)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Impact AQ-4. Would Alternative 1 (Program) emissions create objectionable odors at the nearest offsite receptor?			
SJCWRP			
Plant Expansion	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
Process Optimization	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant 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 Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant 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 Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant 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 Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant 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 Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
Biosolids Management	CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
Impact AQ-6. Would Alternative 1 (Program) expose the public to significant levels of toxic air contaminants?			
SJCWRP			
Plant Expansion	CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation

Table 5-37 (Continued)

Program Element	Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
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 Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
Biosolids Management	CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation

Table 5-38. Impact Summary – Alternative 1 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact AQ-3. Would Alternative 1 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?				
Tunnel Alignment				
Wilmington to SP Shelf (Onshore)	CEQA Significant Impact During Construction	N/A	MM AQ-3a (same as MM AQ-2a). All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap. MM AQ-3b (same as MM AQ-2b). All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap. MM AQ-3c (same as MM AQ-2c). Fully cover trucks hauling loose material, such as debris or fill, while operating off site. MM AQ-3d (same as MM AQ-2d). Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-3e (same as MM AQ-2e). Route construction trucks away from congested streets or sensitive receptor areas as feasible. MM AQ-3g (same as MM AQ-2g). Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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 5-38 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Wilmington to SP Shelf (Offshore)	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Direct	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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 Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
TraPac	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
LAXT	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact During Construction

Table 5-38 (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 Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
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 5-38 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact AQ-4. Would Alternative 1 (Project) emissions create objectionable odors at the nearest offsite receptor?				
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 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
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 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
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

Table 5-38 (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
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
	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 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
Existing Ocean Outfalls	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction

Table 5-38 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	NEPA Less Than Significant Impact During Construction	Direct	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
Impact AQ-6. Would Alternative 1 (Project) expose the public to significant levels of toxic air contaminants?				
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
	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 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 5-38 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
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 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 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
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 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 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 5-38 (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
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

5.4.4 Alternative 2

Alternative 2 (Program) is the same as Alternative 1 (Program). 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). For Alternative 2 (Project), however, the riser and diffuser area would be on the PV Shelf rather than the SP Shelf.

5.4.4.1 Program and Project

Impact AQ-1 and Impact AQ-2 are evaluated on a regional level and thus analyzed for the combined emissions of construction/operation activities that would occur concurrently for the program and project.

Impact AQ-1. Would Alternative 2 conflict with or obstruct implementation of the applicable air quality management plan?

Construction

CEQA Analysis

The purpose of the 2007 AQMP is to set forth a comprehensive program to bring the SCAB into compliance with all federal and state air quality planning requirements. Therefore, it is appropriate to address compliance on a regional level by evaluating the concurrent impacts associated with the program and the project. Alternative 2 (Program) is the same as Alternative 1 (Program). Construction of program elements would produce emissions of nonattainment pollutants, primarily in the form of diesel exhaust and fugitive dust. Compliance with the requirements of the AQMP and SCAQMD rules and regulations would ensure that construction of Alternative 2 (Program) would not conflict with or obstruct implementation of the AQMP. Construction of Alternative 2 (Project) would produce emissions of nonattainment pollutants, primarily in the form of diesel exhaust and fugitive dust. Similar to Alternative 1 (Project), Alternative 2 (Project) would comply with attainment strategies outlined in the

2007 AQMP and enforced at the state and federal level. Alternative 2 would, therefore, not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. Therefore, under NEPA, the impacts associated with construction of the combined program and project for Alternative 2 would be the same as for Alternative 2 (Project), and would occur for the duration of construction. Baseline conditions would resume upon termination of construction.

Operation

CEQA Analysis

Alternative 2 (Program), which is the same as Alternative 1 (Program), uses SCAG's population forecasts for the JOS service area through the year 2050, which are included in the 2007 AQMP. Operation of Alternative 2 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. Alternative 2 would, therefore, not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from operation of program elements. Therefore, under NEPA, the impacts associated with operation of the combined program and project for Alternative 2 would be the same as for Alternative 2 (Project). Operational project emissions would be zero because the tunnel and outfall system would emit no pollutants. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 2 would not conflict with or obstruct implementation of the AQMP. 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 of Alternative 2 would not conflict with or obstruct implementation of the AQMP. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact AQ-2. Would Alternative 2 exceed the SCAQMD daily significance thresholds for construction- and/or operation-related emissions?

See Impact AQ-2 under Alternative 1 for a discussion of emissions-based thresholds used to assess the potential significance of criteria air pollutants at the regional level for peak day emissions for the combined program and project.

Construction

CEQA Analysis

Alternative 2 (Program) is the same as Alternative 1 (Program). Construction of Alternative 2 (Project) is anticipated to occur over a 78-month active construction period, starting in the first quarter of 2015 and concluding in the second quarter of 2021. For this analysis, emissions resulting from construction-related activities reflect conservative assumptions based on a construction scenario wherein construction would occur in a relatively intensive manner. Because of this conservative assumption, actual emissions would likely be less than those presented here. If construction were delayed or were to occur over a longer period of time, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less-intensive build-out schedule (i.e., fewer daily emissions occurring over a longer time interval). The construction equipment mix and duration for each construction stage is detailed in the construction spreadsheets provided in Appendix 5-B.

Peak day criteria pollutant emissions associated with Alternative 2 construction activities are presented in Table 5-39. Peak day emissions for each construction phase were determined by summing emissions from those construction activities that overlap in the proposed construction schedule. In the case where more than one possible combination of activities would occur during the same phase, emissions were calculated for all possible combinations, and the combination producing the greatest emissions was reported.

Table 5-39. Alternative 2 Under CEQA Peak Day Construction Emissions Without Mitigation

Time Period	Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Program							
2018–2050	JWPCP Solids Processing	5	29	42	0	21	6
2018–2028	SJCWRP Process Optimization	5	29	42	0	9	3
2018–2028	POWRP Process Optimization	4	20	29	0	3	2
2018–2028	LCWRP Process Optimization	5	28	40	0	6	2
2018–2028	LBWRP Process Optimization	5	28	40	0	6	2
2035–2040	SJCWRP Plant Expansion	4	21	30	0	12	3
2018–2028	Peak Day Emissions[a]	25	133	192	0	45	15
Project							
2015–2015	JWPCP East Shaft Construction	25	94	244	0	12	10
2016–2018	Onshore Tunnel Alignment	32	183	371	1	18	15
2016–2017	TraPac Shaft Construction	23	88	217	0	11	9
2015–2016	LAXT Shaft Construction	25	94	244	0	12	10
2016–2021	Offshore Tunnel Alignment	37	206	432	1	22	18
2015–2016	Southwest Marine Shaft Construction	25	94	244	0	12	10
2018–2020	PV Shelf Riser Construction	3	53	51	0	2	2
2020–2021	PV Shelf Diffuser Construction	17	87	160	0	5	4

Table 5-39 (Continued)

Time Period	Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
2020–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2016–2017	Peak Day Emissions[b]	92	477	1,020	2	51	42
Concurrent Peak Day Emissions[c]		97	575	1,045	2	87	50
Significance Thresholds		75	550	100	150	150	55
CEQA Increment[d]		97	575	1,045	2	87	50
CEQA Significant?		Yes	Yes	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day program construction emissions would occur during 2018 through 2028 if JWPCP solids processing and process optimization at the WRPs were constructed concurrently.

[b] Peak day project construction emissions would occur in 2016 and 2017 when construction of the TraPac shaft overlaps with both tunneling activities.

[c] Concurrent peak day emissions of VOC, CO, NO_X, PM_{10}, and $PM_{2.5}$ would occur in 2018 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the onshore and offshore tunnels, and the riser on the PV Shelf occurred concurrently. Concurrent peak day SO_X emissions would occur in 2016 and 2017 if construction of the onshore and offshore tunnels and the TraPac shaft occurred concurrently.

[d] CEQA increment is equivalent to concurrent peak day emissions because the CEQA baseline is zero for new construction.

Due to a lengthy construction period, Alternative 2 (Project) construction could overlap with Alternative 2 (Program) construction, specifically during process optimization of the WRPs. Concurrent peak day program and project emissions were estimated in each year during which construction from Alternative 2 (Project) and Alternative 2 (Program) could potentially overlap. The combination of peak day program and project emissions that would result in the greatest concurrent emissions is shown in Table 5-39. The concurrent peak day emissions from Alternative 2 construction, as reported in Table 5-39, would occur during different years for different pollutants. Concurrent peak day emissions of VOC, CO, NO_X, PM_{10}, and $PM_{2.5}$ would occur in 2018 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the onshore and offshore tunnels, and the riser on the PV Shelf occurred concurrently. Concurrent peak day SO_X emissions would occur in 2016 and 2017 if construction of the onshore and offshore tunnels and the TraPac shaft occurred concurrently. Impacts would be significant for VOC, CO, and NO_X emissions.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. Therefore, under NEPA, the impacts associated with construction of the combined program and project for Alternative 1 would be the same as for Alternative 1 (Project), and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. Impacts under NEPA are presented in Table 5-40. Impacts would be significant for VOC and NO_X emissions.

Table 5-40. Alternative 2 Under NEPA Peak Day Construction Emissions Without Mitigation

Time Period	Project Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
2015–2015	JWPCP East Shaft Construction	25	94	244	0	12	10
2016–2018	Onshore Tunnel Alignment	32	183	371	1	18	15
2016–2017	TraPac Shaft Construction	23	88	217	0	11	9
2015–2016	LAXT Shaft Construction	25	94	244	0	12	10

Table 5-40 (Continued)

Time Period	Project Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
2016–2021	Offshore Tunnel Alignment	37	206	432	1	22	18
2015–2016	Southwest Marine Shaft Construction	25	94	244	0	12	10
2018–2020	PV Shelf Riser Construction	3	53	51	0	2	2
2020–2021	PV Shelf Diffuser Construction	17	87	160	0	5	4
2020–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2016–2017	Peak Day Emissions[a]	92	477	1020	2	51	42
Significance Thresholds		75	550	100	150	150	55
NEPA Increment		92	477	1020	2	51	42
NEPA Significant?[b]		Yes	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day construction emissions would occur in 2016 and 2017 when TraPac shaft site construction overlaps with both tunneling activities.

[b] The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. NEPA significance need not be determined for program and project concurrently because federal activities would occur under project only.

Operation

CEQA Analysis

Operational emissions would result from program elements only; there would be no operational activities resulting in criteria pollutant emissions or impacts from project elements. Operational emissions associated with Alternative 2 (Program) would be the same as Alternative 1 (Program). As shown in Table 5-27, impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. Operation of Alternative 2 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. There would be no impacts under NEPA.

CEQA Impact Determination

Construction of Alternative 2 would exceed SCAQMD's significance thresholds for construction-related emissions for VOC, CO, and NO_X, as presented in Table 5-39. Impacts under CEQA would be significant before mitigation. As presented in Table 5-27, operation of Alternative 2 would result in less than significant impacts.

Mitigation

Program

Implement MM AQ-2a through MM AQ-2e.

Project

Implement MM AQ-2a through MM AQ-2g.

Residual Impacts

Implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions for program and project elements. Peak day criteria pollutant emissions associated with mitigated project

construction are presented in Table 5-41 for Alternative 2. Due to a lengthy construction period, Alternative 2 (Project) construction could overlap with Alternative 2 (Program) construction, specifically during process optimization of the WRPs. Concurrent peak day program and project emissions were estimated in each year during which construction from Alternative 2 (Project) and Alternative 2 (Program) could potentially overlap. The combination of peak day program and project emissions that would result in the greatest concurrent emissions is reported in Table 5-41.

Table 5-41. Alternative 2 Under CEQA Peak Day Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	**Element**	**VOC**	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Program							
2018–2050	JWPCP Solids Processing	2	29	16	0	21	5
2018–2028	SJCWRP Process Optimization	2	29	16	0	8	2
2018–2028	POWRP Process Optimization	1	20	13	0	3	1
2018–2028	LCWRP Process Optimization	2	28	15	0	5	2
2018–2028	LBWRP Process Optimization	1	28	14	0	5	2
2035–2040	SJCWRP Plant Expansion	1	21	10	0	12	3
2018–2028	Peak Day Emissions[a]	8	133	73	0	41	12
Project							
2015–2015	JWPCP East Shaft Construction	8	68	81	0	5	4
2016–2018	Onshore Tunnel Alignment	16	147	125	1	8	5
2016–2017	TraPac Shaft Construction	8	67	78	0	5	4
2015–2016	LAXT Shaft Construction	8	68	81	0	5	4
2016–2021	Offshore Tunnel Alignment	18	161	155	1	9	6
2015–2016	Southwest Marine Shaft Construction	8	68	81	0	5	4
2018–2020	PV Shelf Riser Construction	3	51	45	0	1	1
2020–2021	PV Shelf Diffuser Construction	5	86	50	0	3	3
2020–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2016–2017	Peak Day Emissions[b]	41	375	358	2	22	15
Concurrent Peak Day Emissions[c]		44	492	398	2	60	24
Significance Thresholds		75	550	100	150	150	55
CEQA Increment[d]		44	492	398	2	60	24
CEQA Significant?		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day program construction emissions would occur during 2018 through 2028 if JWPCP solids processing and process optimization at the WRPs were constructed at the same time.

[b] Peak day project construction emissions would occur in 2016 and 2017 when construction of the TraPac shaft overlaps with both tunneling activities.

[c] Concurrent peak day emissions of VOC, CO, NO_X, PM_{10}, and $PM_{2.5}$ would occur in 2018 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the onshore and offshore tunnels, and the riser and diffuser on the PV Shelf occurred concurrently. Concurrent peak day SO_X emissions would occur in 2016 and 2017 if onshore and offshore tunneling and TraPac shaft site construction activities occurred concurrently.

[d] CEQA increment is equivalent to maximum concurrent peak day emissions because the CEQA baseline is zero for new construction.

The peak day emissions from concurrent project and program construction would occur in different years for different pollutants. Concurrent peak day emissions of VOC, CO, NO_X, PM_{10}, and $PM_{2.5}$ would occur in 2018 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the onshore and offshore tunnels, and the riser and diffuser on the PV Shelf occurred concurrently.

Concurrent peak day SO_X emissions would occur in 2016 and 2017 if onshore and offshore tunneling and TraPac shaft site construction activities occurred concurrently.

The CEQA residual impact determination for construction impacts is made on a regional level for Alternative 2 in Table 5-41. Although implementation of the mitigation measures would reduce emissions, NO_X would still exceed the SCAQMD significance threshold following mitigation for Alternative 2 under CEQA. Therefore, residual impacts would be significant and unavoidable on a regional level during construction. Impacts would be less than significant during operation.

NEPA Impact Determination

Construction of Alternative 2 would exceed the SCAQMD significance threshold for construction-related emissions for VOC and NO_X, as presented in Table 5-40. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 2 would result in no impacts.

Mitigation

Program

Implement MM AQ-2a through MM AQ-2e.

Project

Implement MM AQ-2a through MM AQ-2g.

Residual Impacts

Peak day criteria pollutant emissions associated with mitigated construction are presented in Table 5-42 for Alternative 2.

Table 5-42. Alternative 2 Under NEPA Peak Day Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	**Project Element**	**VOC**	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP East Shaft Construction	8	68	81	0	5	4
2016–2018	Onshore Tunnel Alignment	16	147	125	1	8	5
2016–2017	TraPac Shaft Construction	8	67	78	0	5	4
2015–2016	LAXT Shaft Construction	8	68	81	0	5	4
2016–2021	Offshore Tunnel Alignment	18	161	155	1	9	6
2015–2016	Southwest Marine Shaft Construction	8	68	81	0	5	4
2018–2020	PV Shelf Riser Construction	3	51	45	0	1	1
2020–2021	PV Shelf Diffuser Construction	5	86	50	0	3	3
2020–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2016–2017	Peak Day Emissions[a]	41	375	358	2	22	15
Significance Thresholds		75	550	100	150	150	55
NEPA Increment		41	375	358	2	22	15
NEPA Significant?[b]		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.
[a] Peak day emissions would occur when TraPac shaft site construction overlaps with both tunneling activities.
[b] NEPA baseline is equivalent to all activities that would occur absent federal action. As such, the NEPA baseline is equivalent to the emissions from construction the program elements.

As shown in Table 5-42, although implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions, NO_X emissions would still exceed the SCAQMD significance threshold

following mitigation for Alternative 2 under NEPA. Therefore, residual impacts would be significant and unavoidable during construction. Operation of Alternative 2 would result in no impacts.

5.4.4.2 Program

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

5.4.4.3 Project

Impacts AQ-3, AQ-4, and AQ-6 are evaluated on a localized level and thus analyzed separately for project and program.

Impact AQ-3. Would Alternative 2 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore); Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis

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) (see Table 5-34). Impacts would be significant for NO_X at the JWPCP East, TraPac, LAXT, and Southwest Marine shaft sites during site construction.

Under this Alternative, as under Alternative 1, after completion of the LAXT shaft, two TBMs would tunnel concurrently, moving north and south from the LAXT shaft site. All tunneling emissions from the northbound and southbound tunnels would be emitted at the LAXT shaft site until the northbound TBM passes the TraPac site and the southbound TBM passes the Southwest Marine site. Once the northbound TBM passes the TraPac shaft site, emissions from the northbound tunnel would be emitted at the TraPac site. Once the southbound TBM passes the Southwest Marine shaft site, emissions from the southbound tunnel would be emitted at the Southwest Marine site. Accordingly, as with Alternative 1, all offshore tunnel emissions would be localized at the LAXT and TraPac shaft sites, and would result in significant impacts before mitigation as shown in Table 5-34.

Alternative 2 (Project) involves a riser and diffuser area on the PV Shelf rather than the SP Shelf. Alternative 2 (Project) riser and diffuser elements are located several miles out to sea near the shelf break along the PV Shelf. The existing ocean outfalls are also located near the shelf break along the PV Shelf. Because there are no receptors within the LST methodology limit of 1,640 feet (500 meters) of these construction areas, per SCAQMD LST methodology, there is no potential for localized construction emissions to affect sensitive receptors in these in-water areas.

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.

Operation

CEQA Analysis

Operation of Alternative 2 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. There would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure.

CEQA Impact Determination

As presented in Table 5-34, construction of the onshore and offshore tunnel, and at the JWPCP East, TraPac, LAXT, and Southwest Marine shaft sites for Alternative 2 (Project) would result in emissions in excess of SCAQMD's LST for NO_X. Impacts under CEQA would be significant before mitigation. Operation of Alternative 2 (Project) would result in no impacts.

Mitigation

Implement MM AQ-3a through MM AQ-3e and MM AQ-3g (same as MM AQ-2a through MM AQ-2e and MM AQ-2g).

Residual Impacts

Similar to the residual impacts under Alternative 1 (Project), implementation of MM AQ-3a through MM AQ-3e and MM AQ-3g would reduce construction impacts related to Alternative 2 (Project) to below SCAQMD LSTs for all pollutants, as shown in Table 5-35. Residual impacts would be less than significant.

NEPA Impact Determination

As presented in Table 5-34, construction of the onshore and offshore tunnel, and at the JWPCP East, TraPac, LAXT, and Southwest Marine shaft sites for Alternative 2 (Project) would result in emissions in excess of SCAQMD's LST for NO_X. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 2 (Project) would result in no impacts.

Mitigation

Implement MM AQ-3a through MM AQ-3e and MM AQ-3g (same as MM AQ-2a through MM AQ-2e and MM AQ-2g).

Residual Impacts

Residual impacts would be less than significant as described under the CEQA impact determination.

Impact AQ-4. Would Alternative 2 (Project) emissions create an objectionable odor at the nearest offsite receptor?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore); Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis
As discussed under Alternative 1 (Project), impacts associated with objectionable odors during construction of the tunnel, shaft sites, riser and diffuser, and rehabilitation of the existing ocean outfalls 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.

Operation

CEQA Analysis
Similar to Alternative 1 (Project), operation of Alternative 2 (Project) would not create objectionable odors. 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 project.

CEQA Impact Determination
Construction and operation of Alternative 2 (Project) would not create objectionable odors at the nearest offsite receptor. 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 create objectionable odors at the nearest offsite receptor. 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 AQ-6. Would Alternative 2 (Project) expose the public to significant levels of toxic air contaminants?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore); Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis

The greatest potential for construction-related TAC emissions would be from diesel particulate emissions associated with heavy equipment operations during site grading activities. Construction activities are short-term in nature and, as such, the cancer risk exposure from diesel-related construction equipment is also short-term. The construction activities associated with Alternative 2 (Project) would take nearly 7 years, but would occur in various locations throughout the SCAB, so they would not overlap or impact a common receptor. Construction activities in any single location would be transitory and short-term. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period at any given location, construction of Alternative 2 (Project) is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. 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.

Operation

CEQA Analysis

Alternative 2 (Project) activities would not result in increased operational emissions, nor would emission sources be relocated closer to sensitive receptors. 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 of Alternative 2 (Project) would not expose the public to significant levels of TACs. Impacts under CEQA would be less than significant. Operation of Alternative 2 (Project) would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant. Although impacts would be less than significant and no mitigation is required, implementation of MM AQ-2a through MM AQ-2g under Impact AQ-2 would further reduce exposure to TACs.

NEPA Impact Determination

Construction of Alternative 2 (Project) would not expose the public to significant levels of TACs. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 2 (Project) would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant as discussed under the CEQA impact determination.

5.4.4.4 Impact Summary – Alternative 2

Impacts on air quality analyzed in this EIR/EIS for Alternative 2 are summarized in Table 5-43. Impacts on air quality for Alternative 2 (Program), which are the same as Alternative 1 (Program), are summarized in Table 5-37. Impacts analyzed in this EIR/EIS for Alternative 2 (Project) are summarized in Table 5-44. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 5-43. Impact Summary – Alternative 2

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Impact AQ-1. Would Alternative 2 conflict with or obstruct implementation of the applicable air quality management plan?		
CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
NEPA Less Than Significant Impact During Construction	No mitigation is required.	NEPA Less Than Significant Impact During Construction
CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
NEPA No Impact During Operation	No mitigation is required.	NEPA No Impact During Operation
Impact AQ-2. Would Alternative 2 emissions exceed SCAQMD daily significance thresholds for construction- and/or operation-related emissions?		
CEQA Significant Impact During Construction	**Program** MM AQ-2a. All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap. MM AQ-2b. All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap. MM AQ-2c. Fully cover trucks hauling loose material, such as debris or fill, while operating off site.	CEQA Significant and Unavoidable Impact During Construction

Table 5-43 (Continued)

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
	MM AQ-2d. Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-2e. Route construction trucks away from congested streets or sensitive receptor areas as feasible. **Project** MM AQ-2a through MM AQ-2e MM AQ-2f**.** Use harbor craft with the cleanest marine diesel engines available at the Port of Los Angeles. MM AQ-2g. Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	
NEPA Significant Impact During Construction	MM AQ-2a through MM AQ-2g.	NEPA Significant and Unavoidable Impact During Construction
CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
NEPA No Impact During Operation	No mitigation is required.	NEPA No Impact During Operation

Table 5-44. Impact Summary – Alternative 2 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact AQ-3. Would Alternative 2 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?				
Tunnel Alignment				
Wilmington to PV Shelf (Onshore)	CEQA Significant Impact During Construction	N/A	MM AQ-3a (same as MM AQ-2a). All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap. MM AQ-3b (same as MM AQ-2b). All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap.	CEQA Less Than Significant Impact During Construction

Table 5-44 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
			MM AQ-3c (same as MM AQ-2c). Fully cover trucks hauling loose material, such as debris or fill, while operating off site. MM AQ-3d (same as MM AQ-2d). Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-3e (same as MM AQ-2e). Route construction trucks away from congested streets or sensitive receptor areas as feasible. MM AQ-3g (same as MM AQ-2g). Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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 Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Direct	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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 Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact During Construction

Table 5-44 (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
TraPac	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
LAXT	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
Southwest Marine	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
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

Table 5-44 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	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 AQ-4. Would Alternative 2 (Project) emissions create objectionable odors at the nearest offsite receptor?				
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 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
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 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 5-44 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
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
	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 5-44 (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				
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 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
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 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
Impact AQ-6. Would Alternative 2 (Project) expose the public to significant levels of toxic air contaminants?				
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

Table 5-44 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
	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 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 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
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 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 5-44 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
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 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 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

5.4.5 Alternative 3

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

5.4.5.1 Program and Project

Impact AQ-1 and Impact AQ-2 are evaluated on a regional level and thus analyzed for the combined emissions of construction/operation activities that would occur concurrently for the program and project.

Impact AQ-1. Would Alternative 3 conflict with or obstruct implementation of the applicable air quality management plan?

Construction

CEQA Analysis

The purpose of the 2007 AQMP is to set forth a comprehensive program to bring the SCAB into compliance with all federal and state air quality planning requirements. Therefore, it is appropriate to address compliance on a regional level by evaluating the concurrent impacts associated with the program and the project. Alternative 3 (Program) is the same as Alternative 1 (Program). Construction of program elements would produce emissions of nonattainment pollutants, primarily in the form of diesel exhaust and fugitive dust. Compliance with the requirements of the AQMP and SCAQMD rules and regulations would ensure that construction of Alternative 3 (Program) would not conflict with or obstruct implementation of the AQMP. Construction of Alternative 3 (Project) would produce emissions of nonattainment pollutants, primarily in the form of diesel exhaust and fugitive dust. Similar to Alternative 1 (Project), Alternative 3 (Project) would comply with attainment strategies outlined in the 2007 AQMP and enforced at the state and federal level. Alternative 3 would, therefore, not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. Therefore, under NEPA, the impacts associated with construction of the combined program and project for Alternative 3 would be the same as for Alternative 3 (Project), and would occur for the duration of construction. Baseline conditions would resume upon termination of construction.

Operation

CEQA Analysis

Alternative 3 (Program), which is the same as Alternative 1 (Program), uses SCAG's population forecasts for the JOS service area through the year 2050, which are included in the 2007 AQMP. Operation of Alternative 3 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. Alternative 3 would, therefore, not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from operation of program elements. Therefore, under NEPA, the impacts associated with operation of the combined program and project for Alternative 3 would be the same as for Alternative 3 (Project). Operational project emissions would be zero because the tunnel and outfall system would emit no pollutants. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 3 would not conflict with or obstruct implementation of the AQMP. 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 of Alternative 3 would not conflict with or obstruct implementation of the AQMP. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact AQ-2. Would Alternative 3 exceed the SCAQMD daily significance thresholds for construction- and/or operation-related emissions?

See Impact AQ-2 under Alternative 1 for a discussion of emissions-based thresholds used to assess the potential significance of criteria air pollutants at the regional level for peak day emissions for the combined program and project.

Construction

CEQA Analysis

Alternative 3 (Program) is the same as Alternative 1 (Program). Construction of Alternative 3 (Project) is anticipated to occur over a 78-month active construction period, starting in the first quarter of 2015 and concluding in the second quarter of 2021. For this analysis, emissions resulting from construction-related activities reflect conservative assumptions based on a construction scenario wherein construction would occur in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those presented here. If construction were delayed or were to occur over a longer period of time, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less-intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). The construction equipment mix and duration for each construction stage is detailed in the construction spreadsheets provided in Appendix 5-B.

Peak day criteria pollutant emissions associated with Alternative 3 construction activities are presented in Table 5-45. Peak day emissions for each construction phase were determined by summing emissions from those construction activities that overlap in the proposed construction schedule. In the case where more than one possible combination of activities would occur during the same phase, emissions were calculated for all possible combinations, and the combination producing the greatest emissions was reported.

Table 5-45. Alternative 3 Under CEQA Peak Day Construction Emissions Without Mitigation

Time Period	Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Program							
2018–2050	JWPCP Solids Processing	5	29	42	0	21	6
2018–2028	SJCWRP Process Optimization	5	29	42	0	9	3
2018–2028	POWRP Process Optimization	4	20	29	0	3	2
2018–2028	LCWRP Process Optimization	5	28	40	0	6	2
2018–2028	LBWRP Process Optimization	5	28	40	0	6	2
2035–2040	SJCWRP Plant Expansion	4	21	30	0	12	3
2018–2028	Peak Day Emissions[a]	25	133	192	0	45	15
Project							
2015–2015	JWPCP West Shaft Construction	25	94	244	0	11	10
2016–2021	Onshore/Offshore Tunnel Alignment	32	183	371	1	18	15
2019–2019	Angels Gate Shaft Construction	18	75	158	0	8	6
2018–2020	PV Shelf Riser Construction	3	53	51	0	2	2
2020–2021	PV Shelf Diffuser Construction	17	87	160	0	5	4
2020–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2019–2019	Peak Day Emissions[b]	53	310	579	1	28	23
Concurrent Peak Day Emissions[c]		78	444	771	1	73	38
Significance Thresholds		75	550	100	150	150	55
CEQA Increment[d]		78	444	771	1	73	38
CEQA Significant?		Yes	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day program construction emissions would occur during 2018 through 2028 if JWPCP solids processing and process optimization at the WRPs were constructed at the same time.

[b] Peak day project construction emissions would occur in 2019 when construction of the Angels Gate shaft and riser on the PV Shelf overlaps with onshore tunneling activities.

[c] Concurrent peak day emissions would occur during 2019 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the Angels Gate shaft, the riser on the PV Shelf, and the onshore tunnel occurred concurrently.

[d] CEQA increment is equivalent to concurrent peak day emissions because the CEQA baseline is zero for new construction.

Due to a lengthy construction period, Alternative 3 (Project) construction could overlap with Alternative 3 (Program) construction, specifically during process optimization of the WRPs. Peak day program and project emissions were estimated in each year during which construction from Alternative 3 (Project) and Alternative 3 (Program) could potentially overlap. The combination of peak day program and project emissions that would result in the greatest concurrent emissions is shown in Table 5-45. The peak day emissions from concurrent project and program construction would occur during 2019 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the Angels Gate shaft, the riser on the PV Shelf, and the onshore tunnel occurred concurrently. Impacts would be significant for VOC and NO_X emissions.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. Therefore, under NEPA, the impacts associated with construction of the combined program and project for Alternative 3 would be the same as for Alternative 3 (Project), and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. Impacts under NEPA are presented in Table 5-46. Impacts would be significant for NO_X emissions.

Table 5-46. Alternative 3 Under NEPA Peak Day Construction Emissions Without Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	**Project Element**	**VOC**	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP West Shaft Construction	25	94	244	0	11	10
2016–2021	Onshore/Offshore Tunnel Alignment	32	183	371	1	18	15
2019–2019	Angels Gate Shaft Construction	18	75	158	0	8	6
2018–2020	PV Shelf Riser Construction	3	53	51	0	2	2
2020–2021	PV Shelf Diffuser Construction	17	87	160	0	5	4
2020–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2019–2019	Peak Day Emissions[a]	53	310	579	1	28	23
Significance Thresholds		75	550	100	150	150	55
NEPA Increment		53	310	579	1	28	23
NEPA Significant?[b]		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day emissions would occur in 2019 when construction of the Angels Gate shaft and riser on the PV Shelf overlaps with onshore tunneling activities.

[b] The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. NEPA significance need not be determined for program and project concurrently because federal activities would occur under project only.

Operation

CEQA Analysis

Operational emissions would result from program elements only; there would be no operational activities resulting in criteria pollutant emissions or impacts from project elements. Operational emissions associated with Alternative 3 (Program) would be the same as Alternative 1 (Program). As shown in Table 5-27, impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. Operation of Alternative 3 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. There would be no impacts under NEPA.

CEQA Impact Determination

Construction of Alternative 3 would exceed SCAQMD's significance thresholds for construction-related emissions for VOC and NO_X, as presented in Table 5-45. Impacts under CEQA would be significant before mitigation. As presented in Table 5-27, operation of Alternative 3 would result in less than significant impacts.

Mitigation

Program

Implement MM AQ-2a through MM AQ-2e.

Project

Implement MM AQ-2a through MM AQ-2g.

Residual Impacts

Implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions for program and project elements. Peak day criteria pollutant emissions associated with mitigated project construction are presented in Table 5-47 for Alternative 3. Due to a lengthy construction period, project construction could overlap with program construction. Peak day program and project emissions were estimated in each year during which construction from program and project elements could potentially overlap. The combination of peak day program and project emissions that would result in the greatest concurrent emissions is reported in Table 5-47.

Table 5-47. Alternative 3 Under CEQA Peak Daily Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	**Element**	**VOC**	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Program							
2018–2050	JWPCP Solids Processing	2	29	16	0	21	5
2018–2028	SJCWRP Process Optimization	2	29	16	0	8	2
2018–2028	POWRP Process Optimization	1	20	13	0	3	1
2018–2028	LCWRP Process Optimization	2	28	15	0	5	2
2018–2028	LBWRP Process Optimization	1	28	14	0	5	2
2035–2040	SJCWRP Plant Expansion	1	21	10	0	12	3
2018–2028	Peak Day Emissions[a]	8	133	73	0	41	12
Project							
2015–2015	JWPCP West Shaft Construction	8	68	81	0	5	4
2016–2021	Onshore/Offshore Tunnel Alignment	16	147	125	1	7	5
2019–2019	Angels Gate Shaft Construction	7	64	72	0	4	3
2018–2020	PV Shelf Riser Construction	3	51	45	0	1	1
2020–2021	PV Shelf Diffuser Construction	5	86	50	0	3	3
2020–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2019–2019	Peak Day Emissions[b]	26	263	242	1	13	9
Concurrent Peak Day Emissions[c]		34	396	315	1	54	21
Significance Thresholds		75	550	100	150	150	55
CEQA Increment[d]		34	396	315	1	54	21
CEQA Significant?		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day program construction emissions would occur during 2018 through 2028 if JWPCP solids processing and process optimization at the WRPs were constructed at the same time.

[b] Peak day project construction emissions would occur in 2019 when construction of the Angels Gate shaft and riser on the PV Shelf overlaps with onshore tunneling activities.

[c] Concurrent peak day emissions would occur during 2019 if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the Angels Gate shaft, the riser on the PV Shelf, and the onshore tunnel occurred concurrently.

[d] CEQA increment is equivalent to maximum concurrent peak day emissions because the CEQA baseline is zero for new construction.

The peak day emissions from concurrent project and program construction would occur in 2019, for all criteria pollutants, if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the Angels Gate shaft, the riser on the PV Shelf, and the onshore tunnel occurred concurrently.

The CEQA residual impact determination for construction impacts is made on a regional level for Alternative 3 in Table 5-47. Although implementation of the mitigation measures would reduce emissions, NO_X would still exceed the SCAQMD significance threshold following mitigation for

Alternative 3 under CEQA. Therefore, residual impacts would be significant and unavoidable on a regional level during construction. Impacts would be less than significant during operation.

NEPA Impact Determination

Construction of Alternative 3 would exceed the SCAQMD significance threshold for construction-related emissions for NO_X, as presented in Table 5-46. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 3 would result in no impacts.

Mitigation

Program

Implement MM AQ-2a through MM AQ-2e.

Project

Implement MM AQ-2a through MM AQ-2g.

Residual Impacts

Peak day criteria pollutant emissions associated with mitigated construction are presented in Table 5-48 for Alternative 3.

Table 5-48. Alternative 3 Under NEPA Peak Day Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	**Project Element**	**VOC**	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP West Shaft Construction	8	68	81	0	5	4
2016–2021	Onshore/Offshore Tunnel Alignment	16	147	125	1	7	5
2019–2019	Angels Gate Shaft Construction	7	64	72	0	4	3
2018–2020	PV Shelf Riser Construction	3	51	45	0	1	1
2020–2021	PV Shelf Diffuser Construction	5	86	50	0	3	3
2020–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2019–2019	Peak Day Emissions[a]	26	263	242	1	13	9
Significance Thresholds		75	550	100	150	150	55
NEPA Increment		26	263	242	1	13	9
NEPA Significant?[b]		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day emissions would occur in 2019 when construction of the Angels Gate shaft and riser on the PV Shelf overlap with onshore tunneling activities.

[b] NEPA baseline is equivalent to all activities that would occur absent federal action. As such, the NEPA baseline is equivalent to the emissions from constructing the program elements.

As shown in Table 5-48, although implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions, NO_X would still exceed the SCAQMD significance threshold following mitigation for Alternative 3 under NEPA. Therefore, residual impacts would be significant and unavoidable during construction. There would be no impacts during operation.

5.4.5.2 Program

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

5.4.5.3 Project

Impacts AQ-3, AQ-4, and AQ-6 are evaluated on a localized level and thus analyzed separately for project and program.

Impact AQ-3. Would Alternative 3 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore and Offshore); Shaft Sites – JWPCP West and Angels Gate

Construction

CEQA Analysis

The impacts for the riser and diffuser area on the PV Shelf for Alternative 3 (Project) would be the same as for Alternative 2 (Project). The impacts for the existing ocean outfalls would be the same as for Alternative 1 (Project). Additionally, Alternative 3 (Project) includes the following shaft sites: JWPCP West and Angels Gate. The distance to each shaft site's nearest existing sensitive receptor is summarized in Table 5-21 and shown on Figures 5-11 and 5-15, respectively.

Under this alternative, after completion of the JWPCP West shaft site, a single TBM would tunnel from the JWPCP West shaft site toward the Angels Gate shaft site. All tunneling emissions would be emitted at the JWPCP West shaft site until the TBM passes the Angels Gate site. Once the TBM passes the Angels Gate site, emissions would be emitted at the Angels Gate site. Accordingly, all onshore tunnel emissions would be localized at the JWPCP West shaft site, and all offshore tunnel emissions would be localized at the Angels Gate shaft site.

Onsite construction emissions for the additional elements under Alternative 3 (Project) are presented in Table 5-49. As shown in Table 5-49, impacts would be significant for NO_X at the JWPCP West shaft site during site construction. Impacts would also be significant for NO_X for the onshore tunnel, with emissions localized at the JWPCP West shaft site, and for the offshore tunnel, with emissions localized at the Angels Gate shaft site.

Table 5-49. Alternative 3 (Project) Localized Construction Emissions Without Mitigation

		Peak Day Emissions (pounds per day)			
Time Period	**Project Element**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP West Shaft Construction	40	97	3	3
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,530	68	14	8
	CEQA/NEPA Increment	40	97	3	3
	CEQA/NEPA Significant?	No	Yes	No	No
2019–2019	Angels Gate Shaft Construction	36	64	2	2
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	967	73	8	5
	CEQA/NEPA Increment	36	64	2	2
	CEQA/NEPA Significant?	No	No	No	No

Table 5-49 (Continued)

Time Period	Project Element	Peak Day Emissions (pounds per day) CO	NO_X	PM_{10}	$PM_{2.5}$
2016–2021[b]	Onshore Tunneling Emissions at the JWPCP West Shaft Site	86	148	6	5
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs	1,530	68	14	8
	CEQA/NEPA Increment	86	148	6	5
	CEQA/NEPA Significant?	No	Yes	No	No
2016–2021[b]	Offshore Tunneling Emissions at the Angels Gate Shaft Site	86	148	6	5
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs	967	73	8	5
	CEQA/NEPA Increment	86	148	6	5
	CEQA/NEPA Significant?	No	Yes	No	No

CEQA and NEPA baselines are zero for new construction at each construction location.

[a] LSTs are based on distances to receptors and site acreages, presented in Table 5-21. NO_X LST was scaled to reflect the federal NO_2 standard.

[b] The time period for tunnel construction includes both the onshore and offshore segments. Tunneling at each shaft site would not occur until after construction of the shaft, which is required to facilitate tunnel construction.

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.

Operation

CEQA Analysis

Operation of Alternative 3 (Project), which consists of using a new ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. There would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure.

CEQA Impact Determination

As presented in Table 5-49, construction of the onshore and offshore tunnel, and at the JWPCP West shaft site for Alternative 3 (Project) would result in emissions in excess of SCAQMD's LST for NO_X. Impacts under CEQA would be significant before mitigation. Operation of Alternative 3 (Project) would result in no impacts.

Mitigation

Implement MM AQ-3a through MM AQ-3e and MM AQ-3g (same as MM AQ-2a through MM AQ-2e and MM AQ-2g).

Residual Impacts

Implementation of MM AQ-3a through MM AQ-3e and MM AQ-3g would reduce construction impacts to below SCAQMD LSTs for all pollutants for Alternative 3 (Project), as shown in Table 5-50. Residual impacts would be less than significant.

Table 5-50. Alternative 3 (Project) Localized Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)			
Time Period	**Project Element**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP West Shaft Construction	40	17	2	2
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	1,530	68	14	8
	CEQA/NEPA Increment	40	17	2	2
	CEQA/NEPA Significant?	No	No	No	No
2019–2019	Angels Gate Shaft Construction	36	12	1	1
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	967	73	8	5
	CEQA/NEPA Increment	36	12	1	1
	CEQA/NEPA Significant?	No	No	No	No
2016–2021[b]	Onshore Tunneling Emissions at the JWPCP West Shaft Site	86	17	2	1
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs	1,530	68	14	8
	CEQA/NEPA Increment	86	17	2	1
	CEQA/NEPA Significant?	No	No	No	No
2016–2021[b]	Offshore Tunneling Emissions at the Angels Gate Shaft Site	86	17	2	1
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs	967	73	8	5
	CEQA/NEPA Increment	86	17	2	1
	CEQA/NEPA Significant?	No	No	No	No

CEQA and NEPA baselines are zero for new construction at each construction location.

[a] LSTs are based on distances to receptors and site acreages, presented in Table 5-21. NO_X LST was scaled to reflect the federal NO_2 standard.

[b] The time period for tunnel construction includes both the onshore and offshore segments. Tunneling at each shaft site would not occur until after construction of the shaft, which is required to facilitate tunnel construction.

NEPA Impact Determination

As presented in Table 5-49, construction of the onshore and offshore tunnel, and at the JWPCP West shaft site for Alternative 3 (Project) would result in emissions in excess of SCAQMD's LST for NO_X. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 3 (Project) would result in no impacts.

Mitigation

Implement MM AQ-3a through MM AQ-3e and MM AQ-3g (same as MM AQ-2a through MM AQ-2e and MM AQ-2g).

Residual Impacts

Residual impacts would be less than significant as described under the CEQA impact determination.

Impact AQ-4. Would Alternative 3 (Project) emissions create an objectionable odor at the nearest offsite receptor?

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore and Offshore); Shaft Sites – JWPCP West and Angels Gate

Construction

CEQA Analysis
As discussed under Alternative 1 (Project), impacts associated with objectionable odors during construction of the tunnel, shaft sites, riser and diffuser, and rehabilitation of the existing ocean outfalls 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.

Operation

CEQA Analysis
Similar to Alternative 1 (Project), operation of Alternative 3 (Project) would not create objectionable odors. 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 project.

CEQA Impact Determination
Construction and operation of Alternative 3 (Project) would not create objectionable odors at the nearest offsite receptor. 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 create objectionable odors at the nearest offsite receptor. 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 AQ-6. Would Alternative 3 (Project) expose the public to significant levels of toxic air contaminants?

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore and Offshore); Shaft Sites – JWPCP West and Angels Gate

Construction

CEQA Analysis

The greatest potential for construction-related TAC emissions would be from diesel particulate emissions associated with heavy equipment operations during site grading activities. Construction activities are short-term in nature and, as such, the cancer risk exposure from diesel-related construction equipment is also short-term. The construction activities associated with Alternative 3 (Project) would take nearly 7 years, but would occur in various locations throughout the SCAB, so they would not overlap or impact a common receptor. Construction activities in any single location would be transitory and short-term. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period at any given location, construction of Alternative 3 (Project) is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. 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.

Operation

CEQA Analysis

Alternative 3 (Project) activities would not result in increased operational emissions, nor would emission sources be relocated closer to sensitive receptors. 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 of Alternative 3 (Project) would not expose the public to significant levels of TACs. Impacts under CEQA would be less than significant. Operation of Alternative 3 (Project) would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant. Although impacts would be less than significant and no mitigation is required, implementation of MM AQ-2a through MM AQ-2g under Impact AQ-2 would further reduce exposure to TACs.

NEPA Impact Determination

Construction of Alternative 3 (Project) would not expose the public to significant levels of TACs. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 3 (Project) would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant as discussed under the CEQA impact determination.

5.4.5.4 Impact Summary – Alternative 3

Impacts on air quality analyzed in this EIR/EIS for Alternative 3 are summarized in Table 5-51. Impacts on air quality for Alternative 3 (Program), which are the same as Alternative 1 (Program), are summarized in Table 5-37. Impacts analyzed in this EIR/EIS for Alternative 3 (Project) are summarized in Table 5-52. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 5-51. Impact Summary – Alternative 3

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Impact AQ-1. Would Alternative 3 conflict with or obstruct implementation of the applicable air quality management plan?		
CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
NEPA Less Than Significant Impact During Construction	No mitigation is required.	NEPA Less Than Significant Impact During Construction
CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
NEPA No Impact During Operation	No mitigation is required.	NEPA No Impact During Operation
Impact AQ-2. Would Alternative 3 emissions exceed SCAQMD daily significance thresholds for construction- and/or operation-related emissions?		
CEQA Significant Impact During Construction	**Program** MM AQ-2a. All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap.	CEQA Significant and Unavoidable Impact During Construction

Table 5-51 (Continued)

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
	MM AQ-2b. All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap. MM AQ-2c. Fully cover trucks hauling loose material, such as debris or fill, while operating off site. MM AQ-2d. Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-2e. Route construction trucks away from congested streets or sensitive receptor areas as feasible. **Project** MM AQ-2a through MM AQ-2e MM AQ-2f**.** Use harbor craft with the cleanest marine diesel engines available at the Port of Los Angeles. MM AQ-2g. Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	
NEPA Significant Impact During Construction	MM AQ-2a through MM AQ-2g.	NEPA Significant and Unavoidable Impact During Construction
CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
NEPA No Impact During Operation	No mitigation is required.	NEPA No Impact During Operation

Table 5-52. Impact Summary – Alternative 3 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact AQ-3. Would Alternative 3 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?				
Tunnel Alignment				
Figueroa/ Gaffey to PV Shelf (Onshore)	CEQA Significant Impact During Construction	N/A	MM AQ-3a (same as MM AQ-2a). All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap. MM AQ-3b (same as MM AQ-2b). All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap. MM AQ-3c (same as MM AQ-2c). Fully cover trucks hauling loose material, such as debris or fill, while operating off site. MM AQ-3d (same as MM AQ-2d). Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-3e (same as MM AQ-2e). Route construction trucks away from congested streets or sensitive receptor areas as feasible. MM AQ-3g (same as MM AQ-2g). Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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 5-52 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Figueroa/ Gaffey to PV Shelf (Offshore)	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Direct	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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 Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
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 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 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 5-52 (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
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 AQ-4. Would Alternative 3 (Project) emissions create objectionable odors at the nearest offsite receptor?				
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 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
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 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 5-52 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
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 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
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

Table 5-52 (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
Impact AQ-6. Would Alternative 3 (Project) expose the public to significant levels of toxic air contaminants?				
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
	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 5-52 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
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 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 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

5.4.6 Alternative 4 (Recommended Alternative)

Alternative 4 (Program) is the same as Alternative 1 (Program). The impacts for the JWPCP West shaft site for Alternative 4 (Project) would be the same as for Alternative 3 (Project). Alternative 4 (Project) includes a shaft site at Royal Palms Beach. The impacts for the existing ocean outfalls would be the same as for Alternative 1 (Project).

5.4.6.1 Program and Project

Impact AQ-1 and Impact AQ-2 are evaluated on a regional level and thus analyzed for the combined emissions of construction/operation activities that would occur concurrently for the program and project.

Impact AQ-1. Would Alternative 4 conflict with or obstruct implementation of the applicable air quality management plan?

Construction

CEQA Analysis

The purpose of the 2007 AQMP is to set forth a comprehensive program to bring the SCAB into compliance with all federal and state air quality planning requirements. Therefore, it is appropriate to address compliance on a regional level by evaluating the concurrent impacts associated with the program and the project. Alternative 4 (Program) is the same as Alternative 1 (Program). Construction of program elements would produce emissions of nonattainment pollutants, primarily in the form of diesel exhaust and fugitive dust. Compliance with the requirements of the AQMP and SCAQMD rules and regulations would ensure that construction of Alternative 4 (Program) would not conflict with or obstruct implementation of the AQMP. Construction of Alternative 4 (Project) would produce emissions of nonattainment pollutants, primarily in the form of diesel exhaust and fugitive dust. Similar to Alternative 1 (Project), Alternative 4 (Project) would comply with attainment strategies outlined in the 2007 AQMP and enforced at the state and federal level. Alternative 4 would, therefore, not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. Therefore, under NEPA, the impacts associated with construction of the combined program and project for Alternative 4 would be the same as for Alternative 4 (Project), and would occur for the duration of construction. Baseline conditions would resume upon termination of construction.

Operation

CEQA Analysis

Alternative 4 (Program), which is the same as Alternative 1 (Program), uses SCAG's population forecasts for the JOS service area through the year 2050, which are included in the 2007 AQMP. Operation of Alternative 4 (Project), which consists of using a modified ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. Alternative 4 would, therefore, not conflict with or obstruct implementation of the AQMP. Impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from operation of program elements. Therefore, under NEPA, the impacts associated with operation of the combined program and project for Alternative 4 would be the same as for Alternative 4 (Project). Operational project emissions would be zero because the tunnel and outfall system would emit no pollutants. There would be no impacts under NEPA.

CEQA Impact Determination

Construction and operation of Alternative 4 would not conflict with or obstruct implementation of the AQMP. 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 of Alternative 4 would not conflict with or obstruct implementation of the AQMP. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

Impact AQ-2. Would Alternative 4 exceed the SCAQMD daily significance thresholds for construction- and/or operation-related emissions?

See Impact AQ-2 under Alternative 1 for a discussion of emissions-based thresholds used to assess the potential significance of criteria air pollutants at the regional level for peak day emissions for the combined program and project.

Construction

CEQA Analysis

Alternative 4 (Program) is the same as Alternative 1 (Program). Construction of Alternative 4 (Project) is anticipated to occur over a 78-month active construction period, starting in the first quarter of 2015 and concluding in the second quarter of 2021. For this analysis, emissions resulting from construction-related activities reflect conservative assumptions based on a construction scenario wherein construction would occur in a relatively intensive manner. Because of this conservative assumption, actual emissions could be less than those presented here. If construction were delayed or were to occur over a longer period of time, emissions could be reduced because of (1) a more modern and cleaner burning construction equipment fleet mix, and/or (2) a less-intensive buildout schedule (i.e., fewer daily emissions occurring over a longer time interval). The construction equipment mix and duration for each construction stage is detailed in the construction spreadsheets provided in Appendix 5-B.

Peak day criteria pollutant emissions associated with Alternative 4 construction activities are presented in Table 5-53. Peak day emissions for each construction phase were determined by summing emissions from those construction activities that overlap in the proposed construction schedule. In the case where more than one possible combination of activities would occur during the same phase, emissions were calculated for all possible combinations, and the combination producing the greatest emissions was reported.

Table 5-53. Alternative 4 Under CEQA Peak Day Construction Emissions Without Mitigation

Time Period	Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
Program							
2018–2050	JWPCP Solids Processing	5	29	42	0	21	6
2018–2028	SJCWRP Process Optimization	5	29	42	0	9	3
2018–2028	POWRP Process Optimization	4	20	29	0	3	2
2018–2028	LCWRP Process Optimization	5	28	40	0	6	2
2018–2028	LBWRP Process Optimization	5	28	40	0	6	2
2035–2040	SJCWRP Plant Expansion	4	21	30	0	12	3
2018–2028	Peak Day Emissions[a]	25	133	192	0	45	15
Project							
2015–2015	JWPCP West Shaft Site Construction	25	94	244	0	12	10
2016–2020	Onshore Tunnel Alignment	32	183	371	1	18	15
2019–2021	Royal Palms Shaft Site Construction	18	75	158	0	8	6
2019–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2019–2020	Peak Day Emissions[b]	51	287	551	1	27	22
Concurrent Peak Day Emissions[c]		76	420	744	1	72	37
Significance Thresholds		75	550	100	150	150	55
CEQA Increment[d]		76	420	744	1	72	37
CEQA Significant?		Yes	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day program construction emissions would occur during 2018 through 2028 if JWPCP solids processing and process optimization at the WRPs were constructed at the same time.

[b] Peak day project construction emissions would occur in 2019 and 2020 when construction of the Royal Palms shaft overlaps with tunneling activities and existing ocean outfalls rehabilitation.

[c] Concurrent peak day emissions would occur in 2019 and 2020 when construction of the JWPCP solids processing facilities, process optimization at the WRPs, the onshore tunnel, the Royal Palms shaft, and the existing ocean outfalls rehabilitation occurred concurrently.

[d] CEQA increment is equivalent to concurrent peak day emissions because the CEQA baseline is zero for new construction.

Due to a lengthy construction period, Alternative 4 (Project) construction could overlap with Alternative 4 (Program) construction, specifically during process optimization of the WRPs. Concurrent peak day program and project emissions were estimated in each year during which construction from Alternative 4 (Project) and Alternative 4 (Program) could potentially overlap. The combination of peak day program and project emissions that would result in the greatest concurrent emissions is shown in Table 5-53. The concurrent peak day emissions from Alternative 4 construction would occur in 2019 for all criteria pollutants if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the onshore tunnel, the Royal Palms shaft, and the existing ocean outfalls rehabilitation occurred concurrently. Impacts would be significant for VOC and NO_X emissions.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. Therefore, under NEPA, the impacts associated with construction of the combined program and project for Alternative 4 would be the same as for Alternative 4 (Project), and would occur for the duration of construction. Baseline conditions would resume upon termination of construction. Impacts under NEPA are presented in Table 5-54. Impacts would be significant for NO_X emissions.

Table 5-54. Alternative 4 Under NEPA Peak Day Construction Emissions Without Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	**Project Element**	**VOC**	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
2015–2015	JWPCP West Shaft Site Construction	25	94	244	0	12	10
2016–2020	Onshore Tunnel Alignment	32	183	371	1	18	15
2019–2021	Royal Palms Shaft Site Construction	18	75	158	0	8	6
2019–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2019–2020	Peak Day Emissions[a]	51	287	551	1	27	22
Significance Thresholds		75	550	100	150	150	55
NEPA Increment		51	287	551	1	27	22
NEPA Significant?[b]		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day emissions would occur in 2019 and 2020 when construction of the Royal Palms shaft overlaps with tunneling activities and existing ocean outfalls rehabilitation.

[b] The NEPA baseline is equivalent to all activities that would occur absent federal action and as such is equivalent to emissions from construction of program elements. NEPA significance need not be determined for program and project concurrently because federal activities would occur under project only.

Operation

CEQA Analysis

Operational emissions would result from program elements only; there would be no operational activities resulting in criteria pollutant emissions or impacts from project elements. Operational emissions associated with Alternative 4 (Program) would be the same as Alternative 1 (Program). As shown in Table 5-27, impacts would be less than significant.

NEPA Analysis

In accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. Operation of Alternative 4 (Project), which consists of using a modified ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. There would be no impacts under NEPA.

CEQA Impact Determination

Construction of Alternative 4 would exceed SCAQMD's significance thresholds for construction-related emissions for VOC and NO_X, as presented in Table 5-53. Impacts under CEQA would be significant before mitigation. As presented in Table 5-27, operation of Alternative 4 would result in less than significant impacts.

Mitigation

Program

Implement MM AQ-2a through MM AQ-2e.

Project

Implement MM AQ-2a through MM AQ-2g.

Residual Impacts

Implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions for program and project elements. Peak day criteria pollutant emissions associated with mitigated project construction are presented in Table 5-55 for Alternative 4. Due to a lengthy construction period,

Alternative 4 (Project) construction could overlap with Alternative 4 (Program) construction. Concurrent peak day program and project emissions were estimated in each year during which construction from Alternative 4 (Project) and Alternative 4 (Program) could potentially overlap. The combination of peak day program and project emissions that would result in the greatest concurrent emissions is reported in Table 5-55.

Table 5-55. Alternative 4 Under CEQA Peak Day Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	**Element**	**VOC**	**CO**	**NO_X**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Program							
2018–2050	JWPCP Solids Processing	2	29	16	0	21	5
2018–2028	SJCWRP Process Optimization	2	29	16	0	8	2
2018–2028	POWRP Process Optimization	1	20	13	0	3	1
2018–2028	LCWRP Process Optimization	2	28	15	0	5	2
2018–2028	LBWRP Process Optimization	1	28	14	0	5	2
2035–2040	SJCWRP Plant Expansion	1	21	10	0	12	3
2018–2028	Peak Day Emissions[a]	8	133	73	0	41	12
Project							
2015–2015	JWPCP West Shaft Site Construction	8	68	81	0	5	4
2016–2020	Onshore Tunnel Alignment	16	147	125	1	8	5
2019–2021	Royal Palms Shaft Site Construction	7	64	72	0	5	3
2019–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2019–2020	Peak Day Emissions[b]	24	241	220	1	13	9
Concurrent Peak Day Emissions[c]		32	374	293	1	36	17
Significance Thresholds		75	550	100	150	150	55
CEQA Increment[d]		32	374	293	1	36	17
CEQA Significant?		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day program construction emissions would occur during 2018 through 2029 if JWPCP solids processing and process optimization at the WRPs were constructed at the same time.

[b] Peak day project construction emissions would occur in 2019 and 2020 when construction of the Royal Palms shaft overlaps with tunneling activities and existing ocean outfalls rehabilitation.

[c] Concurrent peak day emissions would occur in 2019 and 2020 when construction of the JWPCP solids processing facilities, process optimization at the WRPs, the onshore tunnel, Royal Palms shaft, and the existing ocean outfalls rehabilitation occurred concurrently.

[d] CEQA increment is equivalent to the concurrent peak day emissions because the CEQA baseline is zero for new construction.

The peak day emissions from concurrent project and program construction would occur in 2019 for all criteria pollutants if construction of the JWPCP solids processing facilities, process optimization at the WRPs, the onshore tunnel, Royal Palms shaft and the existing ocean outfalls rehabilitation occurred concurrently.

The CEQA residual impact determination for construction impacts is made on a regional level for Alternative 4 in Table 5-55. Although implementation of the mitigation measures would reduce emissions, NO_X would still exceed the SCAQMD significance threshold following mitigation for Alternative 4 under CEQA. Therefore, residual impacts would be significant and unavoidable on a regional level during construction. Impacts would be less than significant during operation.

NEPA Impact Determination

Construction of Alternative 4 would exceed the SCAQMD significance threshold for construction-related emissions for NO_X, as presented in Table 5-54. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 4 would result in no impacts.

Mitigation

Program

Implement MM AQ-2a through MM AQ-2e.

Project

Implement MM AQ-2a through MM AQ-2g.

Residual Impacts

Peak day criteria pollutant emissions associated with mitigated construction are presented in Table 5-56 for Alternative 4.

Table 5-56. Alternative 4 Under NEPA Peak Day Construction Emissions With Mitigation

Time Period	Project Element	Peak Day Emissions (pounds per day)					
		VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
2015–2015	JWPCP West Shaft Site Construction	8	68	81	0	5	4
2016–2020	Onshore Tunnel Alignment	16	147	125	1	8	5
2019–2021	Royal Palms Shaft Site Construction	7	64	72	0	5	3
2019–2020	Existing Ocean Outfalls Rehabilitation	1	29	23	0	1	1
2019–2020	Peak Day Emissions[a]	24	241	220	1	13	9
Significance Thresholds		75	550	100	150	150	55
NEPA Increment		24	241	220	1	13	9
NEPA Significant?[b]		No	No	Yes	No	No	No

All numbers are rounded; therefore, totals may differ slightly from tabular calculations.

[a] Peak day emissions would occur in 2019 and 2020 when construction of the Royal Palms shaft overlaps with tunneling activities and existing ocean outfalls rehabilitation.

[b] NEPA baseline is equivalent to all activities that would occur absent federal action. As such, the NEPA baseline is equivalent to the emissions from construction of the program elements.

As shown in Table 5-56, although implementation of MM AQ-2a through MM AQ-2g would reduce construction-related emissions, NO_X emissions would still exceed the SCAQMD significance threshold following mitigation for Alternative 4 under NEPA. Therefore, residual impacts would be significant and unavoidable during construction. Operation of Alternative 4 would result in no impacts.

5.4.6.2 Program

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

5.4.6.3 Project

Impacts AQ-3, AQ-4, and AQ-6 are evaluated on a localized level and thus analyzed separately for project and program.

Impact AQ-3. Would Alternative 4 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?

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

Construction

CEQA Analysis

The impacts for construction of the JWPCP West shaft site for Alternative 4 (Project) would be the same as for Alternative 3 (Project). Daily emissions during construction of the onshore tunnel would be localized at the JWPCP West shaft site, and impacts associated with these emissions would also be the same as for Alternative 3 (Project). The impacts for the existing ocean outfalls would be the same as for Alternative 1 (Project). Additionally, Alternative 4 (Project) includes construction of the Royal Palms shaft site. The distance to the nearest existing sensitive receptor at the Royal Palms shaft site is summarized in Table 5-21 and shown on Figure 5-16. Onsite construction emissions for the additional element under Alternative 4 (Project) are presented in Table 5-57.

Under this alternative, after completion of the JWPCP West shaft site, one TBM would tunnel from the JWPCP West shaft site toward the Royal Palms shaft site. All tunneling emissions would be emitted at the JWPCP West shaft site until the TBM reaches the Royal Palms site; there would be no tunneling emissions attributable to the Royal Palms shaft site.

As shown in Table 5-57, impacts would be significant for NO_X at the Royal Palms shaft site during construction.

Table 5-57. Alternative 4 (Project) Localized Construction Emissions Without Mitigation

		Peak Day Emissions (pounds per day)			
Time Period	**Project Elements**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
2019–2021	Royal Palms Shaft Site Construction	36	64	3	2
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	664	51	5	3
	CEQA/NEPA Increment	36	64	3	2
	CEQA/NEPA Significant?	No	Yes	No	No

CEQA and NEPA baselines are zero for new construction at each construction location.

[a] LSTs are based on distances to receptors and site acreages, presented in Table 5-21. NO_X LST was scaled to reflect the federal NO_2 standard.

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.

Operation

CEQA Analysis

Operation of Alternative 4 (Project), which consists of using a modified ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, would not emit criteria pollutants. There would be no impacts.

NEPA Analysis

Environmental impacts would be the same as described for the CEQA analysis, and would occur for the operational life of the structure.

CEQA Impact Determination

Construction of the onshore tunnel and at the JWPCP West and Royal Palms shaft sites for Alternative 4 (Project) would result in emissions in excess of SCAQMD's LST for NO_X. Impacts under CEQA would be significant before mitigation. Operation of Alternative 1 (Project) would result in no impacts.

Mitigation

Implement MM AQ-3a through MM AQ-3e and MM AQ-3g (same as MM AQ-2a through MM AQ-2e and MM AQ-2g).

Residual Impacts

Implementation of MM AQ-3a through MM AQ-3e and MM AQ-3g would reduce construction impacts to below SCAQMD LSTs for all pollutants for Alternative 4 (Project), as shown in Table 5-58. Residual impacts would be less than significant.

Table 5-58. Alternative 4 (Project) Localized Construction Emissions With Mitigation

		Peak Day Emissions (pounds per day)			
Time Period	**Project Element**	**CO**	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
2019–2021	Royal Palms Shaft Site Construction	36	12	1	1
	CEQA/NEPA Baseline	0	0	0	0
	SCAQMD LSTs[a]	664	51	5	3
	CEQA/NEPA Increment	36	12	1	1
	CEQA/NEPA Significant?	No	No	No	No

CEQA and NEPA baselines are zero for new construction at each construction location.

[a] LSTs are based on distances to receptors and site acreages, presented in Table 5-21. NO_X LST was scaled to reflect the federal NO_2 standard.

NEPA Impact Determination

Construction of the onshore tunnel and at the JWPCP West and the Royal Palms shaft site for Alternative 4 (Project) would result in emissions in excess of SCAQMD's LST for NO_X. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 4 (Project) would result in less than significant impacts.

Mitigation

Implement MM AQ-3a through MM AQ-3e and MM AQ-3g (same as MM AQ-2a through MM AQ-2e and MM AQ-2g).

Residual Impacts

Residual impacts would be less than significant as described under the CEQA impact determination.

Impact AQ-4. Would Alternative 4 (Project) emissions create an objectionable odor at the nearest offsite receptor?

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

Construction

CEQA Analysis
As discussed under Alternative 1(Project), impacts associated with objectionable odors during construction of the tunnel, shaft sites, riser and diffuser, and rehabilitation of the existing ocean outfalls 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.

Operation

CEQA Analysis
Similar to Alternative 1 (Project), operation of Alternative 4 (Project) would not create objectionable odors. 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 project.

CEQA Impact Determination
Construction and operation of Alternative 4 (Project) would not create objectionable odors at the nearest offsite receptor. 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 create objectionable odors at the nearest offsite receptor. 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 AQ-6. Would Alternative 4 (Project) expose the public to significant levels of toxic air contaminants?

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

Construction

CEQA Analysis

The greatest potential for construction-related TAC emissions would be from diesel particulate emissions associated with heavy equipment operations during site grading activities. Construction activities are short-term in nature and, as such, the cancer risk exposure from diesel-related construction equipment is also short-term. The construction activities associated with Alternative 4 (Project) would take nearly 7 years, but would occur in various locations throughout the SCAB, so they would not overlap or impact a common receptor. Construction activities in any single location would be transitory and short-term. The assessment of cancer risk is typically based on a 70-year exposure period. Because exposure to diesel exhaust would be well below the 70-year exposure period at any given location, construction of Alternative 4 (Project) is not anticipated to result in an elevated cancer risk to exposed persons due to the short-term nature of construction. 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.

Operation

CEQA Analysis

Alternative 4 (Project) activities would not result in increased operational emissions, nor would emission sources be relocated closer to sensitive receptors. 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 of Alternative 4 (Project) would not expose the public to significant levels of TACs. Impacts under CEQA would be less than significant. Operation of Alternative 4 (Project) would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant. Although impacts would be less than significant and no mitigation is required, implementation of MM AQ-2a through MM AQ-2g under Impact AQ-2 would further reduce exposure to TACs.

NEPA Impact Determination

Construction of Alternative 4 (Project) would not expose the public to significant levels of TACs. Impacts under NEPA would be less than significant with respect to the No-Federal-Action Alternative (see Section 3.4.1.6). Operation of Alternative 4 (Project) would result in no impacts.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant as discussed under the CEQA impact determination.

5.4.6.4 Impact Summary – Alternative 4

Impacts on air quality analyzed in this EIR/EIS for Alternative 4 are summarized in Table 5-59. Impacts on air quality for Alternative 4 (Program), which are the same as Alternative 1 (Program), are summarized in Table 5-37. Impacts analyzed in this EIR/EIS for Alternative 4 (Project) are summarized in Table 5-60. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 5-59. Impact Summary – Alternative 4

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Impact AQ-1. Would Alternative 4 conflict with or obstruct implementation of the applicable air quality management plan?		
CEQA Less Than Significant Impact During Construction	No mitigation is required.	CEQA Less Than Significant Impact During Construction
NEPA Less Than Significant Impact During Construction	No mitigation is required.	NEPA Less Than Significant Impact During Construction
CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
NEPA No Impact During Operation	No mitigation is required.	NEPA No Impact During Operation
Impact AQ-2. Would Alternative 4 emissions exceed SCAQMD daily significance thresholds for construction- and/or operation-related emissions?		
CEQA Significant Impact During Construction	**Program** MM AQ-2a. All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap. MM AQ-2b. All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap.	CEQA Significant and Unavoidable Impact During Construction

Table 5-59 (Continued)

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
	MM AQ-2c. Fully cover trucks hauling loose material, such as debris or fill, while operating off site. MM AQ-2d. Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-2e. Route construction trucks away from congested streets or sensitive receptor areas as feasible. **Project** MM AQ-2a through MM AQ-2e MM AQ-2f**.** Use harbor craft with the cleanest marine diesel engines available at the Port of Los Angeles. MM AQ-2g. Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	
NEPA Significant Impact During Construction	MM AQ-2a through MM AQ-2g.	NEPA Significant and Unavoidable Impact During Construction
CEQA Less Than Significant Impact During Operation	No mitigation is required.	CEQA Less Than Significant Impact During Operation
NEPA No Impact During Operation	No mitigation is required.	NEPA No Impact During Operation

Table 5-60. Impact Summary – Alternative 4 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact AQ-3. Would Alternative 4 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?				
Tunnel Alignment				
Figueroa/ Western to Royal Palms (Onshore)	CEQA Significant Impact During Construction	N/A	MM AQ-3a (same as MM AQ-2a). All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap. MM AQ-3b (same as MM AQ-2b). All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap. MM AQ-3c (same as MM AQ-2c). Fully cover trucks hauling loose material, such as debris or fill, while operating off site. MM AQ-3d (same as MM AQ-2d). Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-3e (same as MM AQ-2e). Route construction trucks away from congested streets or sensitive receptor areas as feasible. MM AQ-3g (same as MM AQ-2g). Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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 5-60 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Shaft Site				
JWPCP West	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
Royal Palms	CEQA Significant Impact During Construction	N/A	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact During Construction	Indirect	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	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
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 AQ-4. Would Alternative 4 (Project) emissions create objectionable odors at the nearest offsite receptor?				
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

Table 5-60 (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
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
	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 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 5-60 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact AQ-6. Would Alternative 4 (Project) expose the public to significant levels of toxic air contaminants?				
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 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
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 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 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 5-60 (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

5.4.7 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 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.

5.4.7.1 Program

Alternative 5 (Program) would consist of the implementation of the 2010 Plan. The impacts for conveyance improvements, plant expansion at the SJCWRP, 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) and to permitting and existing regulatory requirements during time of construction. Emissions during Alternative 5 (Program) construction are shown in Table 5-61. Impacts would be less than significant.

Table 5-61. Alternative 5 (Program) Peak Day Construction Emissions Without Mitigation

		Peak Day Emissions (pounds per day)					
Time Period	Program Element	VOC	CO	NO_X	SO_X	PM_{10}	$PM_{2.5}$
2018–2050	JWPCP Solids Processing	5	29	42	0	21	6
2035–2040	SJCWRP Plant Expansion	4	21	30	0	12	3
2035–2040	Peak Day Emissions[a]	10	50	72	0	33	9
Significance Thresholds		75	550	100	150	150	55
CEQA Increment		10	50	72	0	33	9
CEQA Significant?		No	No	No	No	No	No

The CEQA baseline is zero for new construction.

[a] Peak day emissions would occur during 2035 through 2040 if JWPCP solids processing and SJCWRP plant expansion were constructed concurrently.

Operational emissions associated with Alternative 5 (Program) would be the same as Alternative 1 (Program), excluding process optimization at the WRPs. Emissions during Alternative 5 (Program) operations would be the same as those presented in Table 5-27.

5.4.7.2 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 impacts on the air quality resource area, as the discharge would consist of water flowing primarily by gravity. However, in the event of an emergency discharge of effluent, there could be impacts related to objectionable odors. This would be a temporary and localized occurrence, and the Sanitation Districts would take immediate action. The Sanitation Districts have spill prevention and response policies and procedures that would reduce odor impacts from a spill. These include responding to the scene as soon as possible, typically within 1 hour of notification; containing the overflow as close as practical to the overflow location; stopping the flow as soon as possible; preventing public contact with spilled wastewater; and recovering spilled wastewater and returning it to the sewer system (Sanitation Districts 2006b, 2008b). Impacts would be less than significant.

5.4.7.3 Impact Summary – Alternative 5

Impacts on air quality analyzed in this EIR/EIS for Alternative 5 (Program) would be the same as those summarized for Alternative 1 (Program) in Table 5-37 for Impact AQ-3, Impact AQ-4, and Impact AQ-6, excluding process optimization. Note that the mitigation measures for Alternatives 1 through 4 (Program) are not applicable to Alternative 5 (Program). Alternative 5 would not include a project; therefore, Impact AQ-1 and Impact AQ-2 would apply to the program only, and as demonstrated in Table 5-61, impacts from peak day emission would be less than significant. There would be less than significant air quality impacts for Alternative 5 (Project).

5.4.8 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 5.4.7.2. 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.

5.4.8.1 Program

The program elements are beyond the NEPA scope of analysis.

5.4.8.2 Project

The impact analysis for Alternative 6 (Project) is the same as described for Alternative 5 (Project).

5.4.8.3 Impact Summary – Alternative 6

The program is not analyzed under Alternative 6. Project impacts would be the same as discussed under Alternative 5 (Project); therefore, there would be no significant impacts on air quality for Alternative 6 (Project).

5.4.9 Comparison of Significant Impacts and Mitigation for All Alternatives

A summary of significant impacts on air quality resulting from the construction and/or operation of program and/or project elements is provided in Table 5-62. 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 5-62. Comparison of Significant Impacts and Mitigation for Air Quality for All Alternatives

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
Alternatives 1, 2, 3, and 4		
Impact AQ-2. Would Alternatives 1 through 4 emissions exceed SCAQMD daily significance thresholds for construction- and/or operation-related emissions?		
CEQA Significant Impact During Construction	**Program** MM AQ-2a. All on-road heavy-duty diesel trucks used during construction with a gross vehicle weight rating greater than 14,000 pounds will have a 2007 model year engine or newer, or be equipped with a particulate matter trap. MM AQ-2b. All off-road diesel-powered equipment used during construction will be equipped with a U.S. Environmental Protection Agency (EPA) Tier 3 engine, except for specialized construction equipment in which an EPA Tier 3 engine is not available, and a diesel particulate matter trap. MM AQ-2c. Fully cover trucks hauling loose material, such as debris or fill, while operating off site. MM AQ-2d. Commercially available construction equipment and heavy-duty trucks that use alternative fuels will be evaluated for their use during construction, provided that it will be available prior to commencing construction and proven reliable. MM AQ-2e. Route construction trucks away from congested streets or sensitive receptor areas as feasible.	CEQA Significant and Unavoidable Impact During Construction

Table 5-62 (Continued)

Impact Determination Before Mitigation	Mitigation	Residual Impact After Mitigation
	Project MM AQ-2a through MM AQ-2e MM AQ-2f**.** Use harbor craft with the cleanest marine diesel engines available at the Port of Los Angeles. MM AQ-2g. Use a U.S. Environmental Protection Agency Tier 4 engine to power the tunnel locomotive.	
NEPA Significant Impact During Construction	MM AQ-2a through MM AQ-2g	NEPA Significant and Unavoidable Impact During Construction

Element	Impact Before Mitigation	Mitigation Measure	Residual Impact After Mitigation
Alternative 1 (Project)			
Impact AQ-3. Would Alternative 1 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?			
Tunnel Alignment – Wilmington to SP Shelf (Onshore)	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Indirect) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Indirect) During Construction
Tunnel Alignment – Wilmington to SP Shelf (Offshore)	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Direct) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Direct) During Construction
Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Indirect) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Indirect) During Construction
Alternative 2 (Project)			
Impact AQ-3. Would Alternative 2 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?			
Tunnel Alignment – Wilmington to PV Shelf (Onshore)	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Indirect) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Indirect) During Construction

Table 5-62 (Continued)

Element	Impact Before Mitigation	Mitigation Measure	Residual Impact After Mitigation
Tunnel Alignment – Wilmington to PV Shelf (Offshore)	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Direct) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Direct) During Construction
Shaft Sites – JWPCP East, TraPac, LAXT, and Southwest Marine	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Indirect) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Indirect) During Construction
Alternative 3 (Project)			
Impact AQ-3. Would Alternative 3 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?			
Tunnel Alignment – Figueroa/ Gaffey to PV Shelf (Onshore)	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Indirect) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Indirect) During Construction
Tunnel Alignment – Figueroa/ Gaffey to PV Shelf (Offshore)	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Direct) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Direct) During Construction
Shaft Site – JWPCP West	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Indirect) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Indirect) During Construction
Alternative 4 (Project)			
Impact AQ-3. Would Alternative 4 (Project) result in emissions in excess of SCAQMD's Localized Significance Thresholds?			
Tunnel Alignment – Figueroa/ Western to Royal Palms (Onshore)	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Indirect) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Indirect) During Construction

Table 5-62 (Continued)

Element	Impact Before Mitigation	Mitigation Measure	Residual Impact After Mitigation
Shaft Sites – JWPCP West and Royal Palms	CEQA Significant Impact During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	CEQA Less Than Significant Impact During Construction
	NEPA Significant Impact (Indirect) During Construction	MM AQ-3a through MM AQ-3e (same as MM AQ-2a through MM AQ-2e) MM AQ-3g (same as MM AQ-2g)	NEPA Less Than Significant Impact (Indirect) During Construction