

Chapter 15

EMPLOYMENT, HOUSING, SOCIOECONOMICS, AND ENVIRONMENTAL JUSTICE

15.1 Introduction

This chapter provides the existing socioeconomic profile of the Joint Outfall System (JOS) service area and environmental justice issues that pertain to the Clearwater Program. This profile serves as the basis for analyzing the direct effects on population, employment, and housing that would result from implementation of the program and the project. Analysis of population and housing impacts is required by the California Environmental Quality Act (CEQA) (see Section 1.2.1). In addition, analysis of employment, socioeconomics, and environmental justice is required under the National Environmental Policy Act (NEPA) (see Section 1.2.2) and by Executive Order 12898 (see Section 15.3.1). Indirect or secondary effects are discussed in Chapter 21.

The analysis presented in this chapter is based on information provided by the United States (U.S.) Census, Southern California Association of Governments (SCAG), California Department of Finance (DOF), and the Employment Development Department (EDD). Additional information regarding the JOS service area's future population was developed by the Sanitation Districts of Los Angeles County (Sanitation Districts). It should be noted that, since comprehensive data from the U.S. Census 2010 for the Los Angeles regional area was not uniformly available until late 2011, this analysis is based on the U.S. Census 2000.

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 employment and housing impact analysis for each program element is summarized by alternative in Table 15-1. As shown in the table, program-level impacts are discussed in the Preliminary Screening Analysis (Appendix 1-A) and, therefore, are not included in this chapter. Note that an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis.

Table 15-1. Impact Analysis Location of Program Elements by Alternative

Program Element	Alternative						Analysis Location	
	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	-

Table 15-1 (Continued)

Program Element	Alternative						Analysis Location	
	1	2	3	4	5 ^a	6 ^b	PSA	EIR/EIS
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	-
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 15-2.	

^a See Section 15.4.7 for a discussion of the No-Project Alternative.
^b See Section 15.4.8 for a discussion of the No-Federal-Action Alternative.
WRP effluent management and biosolids management do not include construction.
PSA = Preliminary Screening Analysis
C = construction
O = operation
N/A = not applicable

As discussed in Section 3.2.2, Joint Water Pollution Control Plant (JWPCP) effluent management was the one program element that was carried forward as a project. The location of the employment and housing impact analysis for each project element is summarized by alternative in Table 15-2.

Table 15-2. Impact Analysis Location of Project Elements by Alternative

Project Element	Alternative						Analysis Location	
	1	2	3	4	5 ^a	6 ^b	PSA	EIR/EIS
Tunnel Alignment								
Wilmington to SP Shelf (onshore)	X				N/A	N/A	C,O	C,O
Wilmington to SP Shelf (offshore)	X				N/A	N/A	C,O	C,O
Wilmington to PV Shelf (onshore)		X			N/A	N/A	C,O	C,O
Wilmington to PV Shelf (offshore)		X			N/A	N/A	C,O	C,O
Figueroa/Gaffey to PV Shelf (onshore)			X		N/A	N/A	C,O	C,O
Figueroa/Gaffey to PV Shelf (offshore)			X		N/A	N/A	C,O	C,O
Figueroa/Western to Royal Palms (onshore)				X	N/A	N/A	C,O	C,O

Table 15-2 (Continued)

Project Element	Alternative						Analysis Location	
	1	2	3	4	5 ^a	6 ^b	PSA	EIR/EIS
Shaft Sites								
JWPCP East	X	X			N/A	N/A	C,O	C,O
JWPCP West			X	X	N/A	N/A	C,O	C,O
TraPac	X	X			N/A	N/A	C,O	C,O
LAXT	X	X			N/A	N/A	C,O	C,O
Southwest Marine	X	X			N/A	N/A	C,O	C,O
Angels Gate			X		N/A	N/A	C,O	C,O
Royal Palms				X	N/A	N/A	C,O	C,O
Riser/Diffuser Areas								
SP Shelf	X				N/A	N/A	C,O	C,O
PV Shelf		X	X		N/A	N/A	C,O	C,O
Existing Ocean Outfalls	X	X	X	X	N/A	N/A	C,O	C,O

^a See Section 15.4.7 for a discussion of the No-Project Alternative.
^b See Section 15.4.8 for a discussion of the No-Federal-Action Alternative.
PSA = Preliminary Screening Analysis
C = construction
O = operation
N/A = not applicable

15.2 Environmental Setting

15.2.1 Regional Setting

15.2.1.1 Population and Housing

Population characteristics within the region are summarized in Table 15-3. Total population in the county of Los Angeles, as reported in the U.S. Census 2000, was 9,519,338 persons. Of the total population, White persons composed the largest racial group, at 48.7 percent. Persons identified as “other race” composed the next largest group at 23.5 percent. The remaining 27.8 percent (in order of descending proportions) were Asian, Black or African American, Multi-racial, Native American, and Native Hawaiian/Pacific Islander. Of these racial groups, 44.6 percent identified themselves as Hispanic or Latino. For Los Angeles County, 28.0 percent of the population was under 18 years of age in 2000, while 9.7 percent was over 65 years of age. Demographic data from the SCAG 2008 Regional Transportation Plan (RTP) indicate that the county of Los Angeles is projected to have a population of 12,337,153 residents in 2035, an increase of approximately 29.6 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

Total population in the JOS service area, as reported in the U.S. Census 2000, was 5,121,092 persons. Of the total population, White persons composed the largest racial group, at 43.6 percent. Persons identified as “other race” composed the next largest group at 25.3 percent. The remaining 31.1 percent (in order of descending proportions) were Asian, Black or African American, Multi-racial, Native American, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 48.5 percent identified themselves as Hispanic or Latino. For the JOS service area, the age characteristics of the population are similar to the county, as 29.8 percent of the population was under 18 years of age in 2000, while 9.6 percent was over

65 years of age. Demographic data from the SCAG 2008 RTP indicate that the JOS service area is projected to have a population of 6,380,894 residents in 2035, an increase of approximately 24.6 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

Table 15-3. Existing and Projected Regional Characteristics

	Los Angeles County	JOS Service Area
Population and Projected Growth		
Total Population 2000	9,519,338	5,121,092
Total Population 2010	10,614,026	5,627,306
Growth (2000-2010)	11.5%	9.9%
Projected Population 2020	11,328,214	5,942,368
Growth (2010-2020)	6.7%	5.6%
Projected Population 2030	12,014,385	6,240,826
Growth (2020-2030)	6.1%	5.0%
Projected Population 2035	12,337,153	6,380,894
Growth (2030-2035)	2.7%	2.2%
Ethnicity (2000)		
Hispanic or Latino	44.6%	48.5%
Not Hispanic or Latino	55.4%	51.5%
Percentage Racial Distribution (2000)		
White	48.7%	43.6%
Black or African American	9.8%	11.3%
American Indian and Alaska Native	0.8%	0.9%
Asian	11.9%	13.9%
Native Hawaiian and Other Pacific Islander	0.3%	0.4%
Some Other Race	23.5%	25.3%
Two or More Races	4.9%	4.6%
Percentage Age Distribution (2000)		
Under 5	7.7%	8.1%
5 Through 17	20.3%	21.7%
18 Through 64	62.2%	60.6%
65 and Over	9.7%	9.6%
Year 2000 information is from the U.S. Census 2000, while the future years' (2010, 2020, 2030, and 2035) projections have been taken from RTP 2008 prepared by SCAG.		
Source: U.S. Census 2000a, Summary File 1 and SCAG 2008		

The existing and future housing characteristics within the county are summarized in Table 15-4. According to the U.S. Census 2000, the total number of housing units in the county was 3,270,909 of which 56.1 percent comprised single-family units, 42.2 percent comprised multi-family units, and the remaining 1.7 percent was classified as other. Of the total housing units in the county, 95.8 percent were occupied and 4.2 percent were vacant. Of the total occupied housing units, 47.9 percent were owner-occupied and 52.1 percent were rented. The number of households within the county was 3,133,774 and is expected to increase by 27.7 percent in 2035. The intermediary projected growth trends for households are also provided in Table 15-4.

As shown in Table 15-4, the total number of housing units within the JOS service area was 1,628,543 of which 65.3 percent comprised single-family units, 32.6 percent comprised multi-family units, and the remaining 2.1 percent was classified as other. Of the total housing units in the JOS service area, 96.4 percent were occupied and 3.6 percent were vacant. Of the total occupied housing units, 53.8 percent were owner-occupied and 46.2 percent were rented. The county proportions for owner-occupied units were lower than those for the JOS service area. The number of households in 2035 for the JOS service area is projected to be 1,874,784 households, an increase of approximately 19.5 percent over 2000.

Table 15-4. Existing and Projected Regional Housing Characteristics

	Los Angeles County	JOS Service Area
Households and Projected Growth		
Total Households in 2000	3,133,774	1,569,417
Projected Households in 2010	3,356,962	1,645,541
Growth (2000-2010)	7.1%	4.9%
Projected Households in 2020	3,665,749	1,756,900
Growth (2010-2020)	9.2%	6.8%
Projected Households in 2030	3,905,933	1,841,175
Growth (2020-2030)	6.6%	4.8%
Projected Households in 2035	4,002,571	1,874,784
Growth (2030-2035)	2.5%	1.8%
Average Household Size (2000)	2.98	3.26
Housing and Housing Characteristics (2000)		
Total Housing Units in 2000	3,270,909	1,628,543
<i>Occupancy Status</i>		
Occupied Units	95.8%	96.4%
Vacant Units	4.2%	3.6%
<i>Tenancy Status</i>		
Owner Occupied	47.9%	53.8%
Renter Occupied	52.1%	46.2%
<i>Type of Housing</i>		
Single Units	56.1%	65.3%
Multiple Unit	42.2%	32.6%
Other Housing Unit	1.7%	2.1%

Year 2000 information is from U.S. Census 2000, while the future years' (2010, 2020, 2030, and 2035) projections have been taken from RTP 2008 prepared by SCAG.

Source: U.S. Census 2000a, Summary File 1 and U.S. Census 2000b, Summary File 3, and SCAG 2008

15.2.1.2 Employment

The employment data and breakdown of employment by industry are summarized in Table 15-5. As per the U.S. Census 2000, Los Angeles County had 3,953,415 jobs and an unemployment rate of 8.2 percent. However, the recent economic downturn is likely to have had negative effects upon regional employment rates. The most recent available unemployment data from the California EDD confirm this trend,

showing an unemployment rate of 12.0 percent for the county as of January 2010 (California EDD 2010). According to the SCAG 2008 RTP, the employment for the county is projected to increase to 5,064,786, an increase of 28.1 percent from 2005. The majority of the employed workers in the county are working in the service sector (44.1 percent), followed by 14.8 percent workers working in manufacturing, and 10.6 percent workers employed in retail trade.

As shown in Table 15-5, the JOS service area had an employment of 2,054,327 in 2000. The unemployment rate in the JOS service area was similar to the county at 8.0 percent. According to the SCAG projections, the employment for the JOS service area is projected to increase to 2,406,773, an increase of 17.2 percent from 2005. Following similar trends as the county, the majority of the employed workers in the JOS service area are working in the service sector (41.8 percent), followed by 17.2 percent workers working in manufacturing, and 10.65 percent workers employed in retail trade.

Table 15-5. Existing and Projected Employment and Break Down of Industry

	Los Angeles County	JOS Service Area
Employment and Projected Growth		
Total Employment in 2000	3,953,415	2,054,327
Unemployment Rate (2000)	8.2%	8.0%
Projected Employment in 2005 ^a	4,390,491	2,165,864
Projected Employment in 2010	4,588,394	2,238,616
Growth (2005-2010)	4.5%	3.4%
Projected Employment in 2020	4,781,152	2,303,375
Growth (2010-2020)	4.2%	2.9%
Projected Employment in 2030	4,971,380	2,372,246
Growth (2020-2030)	4.0%	3.0%
Projected Employment in 2035	5,064,786	2,406,773
Growth (2030-2035)	1.9%	1.5%
Employment by Industry (2000)		
Agriculture	0.2%	0.2%
Mining	0.1%	0.1%
Construction	5.1%	5.0%
Manufacturing	14.8%	17.2%
Utilities	5.0%	6.2%
Wholesale Trade	4.7%	5.5%
Retail Trade	10.5%	10.6%
Information	5.4%	3.3%
Finance, Insurance, and Real Estate	6.9%	6.4%
Service	44.1%	41.8%
Government	3.2%	3.7%

Year 2000 information is from U.S. Census 2000, while the future years' (2005, 2010, 2020, 2030, and 2035) projections are from RTP 2008 prepared by SCAG.

^a Year 2000 employment information from U.S. Census 2000 provides employed persons residing in the geography, while SCAG projections provide actual number of jobs within the geography. Hence, there is a decrease in numbers from 2000 to 2005 for some geographic regions. This is also the reason why the 2005 numbers are projections as they are SCAG data and need to be compared with 2035 data.

Source: U.S. Census 2000a, Summary File 1 and U.S. Census 2000b, Summary File 3, and SCAG 2008

15.2.1.3 Income and Poverty Status

Census tract level data was used to determine the income and poverty characteristics for the population and housing study area, and is summarized in Table 15-6. The per capita income for Los Angeles County (\$20,683) is higher than that of the JOS service area's per capita income (\$19,501). The percentage of persons below the poverty threshold in Los Angeles County (17.9 percent) is slightly higher than the percentage in the JOS service area (16.9 percent). (Note: The 1999 poverty threshold used for the 2000 U.S. data, as defined by the U.S. Census Bureau, was \$8,501 for an individual and \$17,029 for a family of four. The 2009 poverty threshold according to the U.S. Department of Health and Human Services is \$10,830 for individuals, or \$22,050 for a family of four.)

Table 15-6. Poverty and Income (1999)

Location	Population for Whom Poverty Status Is Determined	Persons Below Poverty Threshold (1999)	Percent Below Poverty Threshold	Per Capita Income
Los Angeles County	9,349,771	1,674,599	17.9%	\$20,683
JOS Service Area	5,044,947	853,387	16.9%	\$19,501

Source: U.S. Census 2000a, Summary File 1 and U.S. Census 2000b, Summary File 3

15.2.2 Program Setting

The program would result in less than significant impacts on employment and housing. Refer to the Preliminary Screening Analysis for more detail. Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis. Therefore, the program is not included in this chapter.

15.2.3 Project Setting

15.2.3.1 Tunnel Alignment

Wilmington to San Pedro Shelf and Wilmington to Palos Verdes Shelf Alignments

Both the Wilmington to SP Shelf and Wilmington to PV Shelf tunnel alignments are generally within the same population and housing study area. The population and housing study area consists of census tracts adjacent to the alignment. As shown of Figure 15-1, the adjacent census tracts are 2942.00, 2943.00, 2945.10, 2948.10, 2948.30, 2949.00, 2961.00, 2971.20, 2976.00, 5436.04, and 5437.03. This study area is referred to as the Wilmington tunnel alignment study area. It should be noted that for this chapter, the offshore portion of the tunnel alignment from the TraPac shaft site to the Southwest Marine shaft site is included as part of the onshore tunnel alignment analysis for environmental justice (see Section 15.4.3.2).

Population and Housing

Population characteristics for the study area are summarized in Table 15-7. Total population in the Wilmington tunnel alignment study area, as reported in the U.S. Census 2000, was 46,468 persons. Of the total population, White persons composed the largest racial group, at 42.2 percent. Persons identified as "Some Other Race" composed the next largest group at 35.8 percent. The remaining 22.0 percent (in order of descending proportions) were Asian, Multi-racial, Black or African American, American Indian and Alaska Native, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 65.1 percent identified themselves as Hispanic or Latino. For the Wilmington tunnel alignment study area, 31.4 percent of the population was under 18 years of age in 2000, while 7.2 percent was over 65 years of age. Demographic data from the SCAG 2008 RTP indicate that the study area is projected to have a

population of 56,191 residents in 2035, an increase of approximately 20.9 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

Housing characteristics for the study area are summarized in Table 15-8. The total number of housing units within the Wilmington alignment study area was 7,762 of which 57.5 percent comprised single-family units, 40.4 percent comprised multi-family units, and the remaining 2.1 percent was classified as other. Of the total housing units in the study area, 94.2 percent were occupied and 5.8 percent were vacant. Of the total occupied housing units, 45.0 percent were owner-occupied and 55.0 percent were rented. The proportion of owner-occupied units in the Wilmington tunnel alignment study area is lower than in the county (Table 15-4 and Table 15-8). The number of households in 2035 for the Wilmington tunnel alignment study area is projected to be 9,151 households, an increase of approximately 25.2 percent over 2000.

Employment

Employment characteristics for the study area are summarized in Table 15-9. The study area had 17,572 jobs and an unemployment rate of 9.0 percent in 2000. According to the SCAG 2008 RTP, employment for the study area is projected to increase to 13,234, an increase of only 11.7 percent from 2005 projections. The majority of the employed workers in the study area are working in the service sector (37.8 percent), followed by 21.5 percent workers working in manufacturing, and 8.9 percent workers employed in retail trade and utilities sectors.

Income and Poverty Status

Income and poverty data for the study area are summarized in Table 15-10. Per capita income for the Wilmington tunnel alignment study area (\$12,371) was less than the county's per capita income (\$20,683) (Table 15-6). The percentage of persons below the poverty threshold for the Wilmington tunnel alignment study area (21.5 percent) was higher than that for the JOS service area and Los Angeles County.

Table 15-7. Existing and Projected Regional and Local Population Characteristics for Project

	Tunnel Alignment Study Area				Shaft Site Study Area			
	Wilmington	Figueroa/ Gaffey to PV Shelf	Figueroa/ Western to Royal Palms	JWPCP East and JWPCP West	TraPac	LAXT and Southwest Marine	Angels Gate	Royal Palms
Population and Projected Growth								
Total Population 2000	46,468	55,010	44,919	5,162	3,262	1,434	3,324	6,501
Total Population 2010	51,349	60,209	49,330	5,892	3,603	1,403	3,630	7,258
Growth (2000-2010)	10.5%	9.5%	9.8%	14.1%	10.5%	-2.2%	9.2%	11.6%
Projected Population 2020	53,321	62,251	50,727	6,253	3,727	1,441	3,759	7,507
Growth (2010-2020)	3.8%	3.4%	2.8%	6.1%	3.4%	2.7%	3.6%	3.4%
Projected Population 2030	55,273	64,266	52,109	6,598	3,850	1,498	3,887	7,754
Growth (2020-2030)	3.7%	3.2%	2.7%	5.5%	3.3%	4.0%	3.4%	3.3%
Projected Population 2035	56,191	65,210	52,755	6,760	3,907	1,528	3,948	7,869
Growth (2030-2035)	1.7%	1.5%	1.2%	2.5%	1.5%	2.0%	1.6%	1.5%
Ethnicity (2000)								
Hispanic or Latino	65.1%	47.0%	33.7%	34.7%	86.6%	37.9%	17.5%	12.5%
Not Hispanic or Latino	34.9%	53.0%	66.3%	65.3%	23.4%	62.1%	82.5%	87.5%
Percentage Racial Distribution (2000)								
White	42.2%	58.0%	68.6%	27.6%	31.9%	45.9%	79.8%	85.1%
Black or African American	5.0%	6.2%	4.2%	4.3%	5.8%	23.9%	3.1%	2.7%
American Indian and Alaska Native	1.0%	1.1%	0.8%	0.2%	1.1%	1.4%	0.8%	0.5%
Asian	9.0%	5.1%	6.7%	42.3%	2.2%	2.8%	5.1%	4.1%
Native Hawaiian and Other Pacific Islander	1.1%	0.6%	0.5%	2.6%	1.1%	0.8%	0.0%	0.2%
Some other race	35.8%	22.4%	14.4%	17.8%	51.7%	21.1%	5.8%	3.4%
Two or more races	5.9%	6.5%	4.8%	5.1%	6.1%	4.1%	5.4%	4.0%
Percentage Age Distribution (2000)								
Under 5	8.8%	8.0%	6.5%	5.8%	11.2%	0.9%	5.8%	6.0%
5 through 17	22.6%	19.5%	17.2%	19.7%	30.7%	4.3%	14.0%	13.9%
18 through 64	61.4%	62.9%	61.5%	62.9%	53.1%	90.8%	62.0%	57.3%
65 and Over	7.2%	9.6%	14.7%	11.6%	5.0%	4.0%	18.2%	22.7%

Year 2000 information is from U.S. Census 2000, while the future years' (2010, 2020, 2030, and 2035) projections have been taken from RTP 2008 prepared by SCAG.

Source: U.S. Census 2000a, Summary File 1, and SCAG 2008

Table 15-8. Existing and Projected Regional and Local Housing Characteristics for Project

	Tunnel Alignment Study Area				Shaft Site Study Area			
	Wilmington	Figueroa/ Gaffey to PV Shelf	Figueroa/ Western to Royal Palms	JWPCP East and JWPCP West	TraPac	LAXT and Southwest Marine	Angels Gate	Royal Palms
Households and Projected Growth								
Total Households in 2000	7,308	12,567	7,422	3,187	815	159	1,382	2,648
Projected Households in 2010	7,802	13,372	7,787	3,415	875	105	1,461	2,859
Growth (2000-2010)	6.8%	6.4%	4.9%	7.2%	7.4%	-34.0%	5.7%	8.0%
Projected Households in 2020	8,442	14,481	8,175	3,684	945	118	1,566	3,053
Growth (2010-2020)	8.2%	8.3%	5.0%	7.9%	8.0%	12.4%	7.2%	6.8%
Projected Households in 2030	8,948	15,361	8,476	3,893	1,000	128	1,649	3,203
Growth (2020-2030)	6.0%	6.1%	3.7%	5.7%	5.8%	8.5%	5.3%	4.9%
Projected Households in 2035	9,151	15,716	8,599	3,977	1,022	132	1,682	3,264
Growth (2030-2035)	2.3%	2.3%	1.5%	2.2%	2.2%	3.1%	2.0%	1.9%
Average Household Size (2000)	3.50	2.70	2.70	1.62	3.99	2.03	2.33	2.46
Housing and Housing Characteristics (2000)								
Total Housing Units in 2000	7,762	13,188	7,649	3,306	839	253	1,436	2,737
<i>Occupancy Status</i>								
Occupied Units	94.2%	95.3%	97.0%	96.4%	97.1%	62.8%	96.2%	96.7%
Vacant Units	5.8%	4.7%	3.0%	3.6%	2.9%	37.2%	3.8%	3.3%
<i>Tenancy Status</i>								
Owner Occupied	45.0%	29.8%	74.5%	67.9%	24.9%	60.4%	63.5%	78.0%
Renter Occupied	55.0%	70.2%	25.5%	32.1%	75.1%	39.6%	36.5%	22.0%
<i>Type of Housing</i>								
Single Units	57.5%	46.6%	67.1%	76.1%	39.1%	28.3%	68.2%	77.0%
Multiple Unit	40.4%	52.6%	30.0%	20.5%	60.9%	16.0%	31.8%	14.4%
Other Housing Unit	2.1%	0.8%	2.9%	3.4%	0.0%	55.7%	0.0%	8.6%
Year 2000 information is from U.S. Census 2000, while the future years' (2010, 2020, 2030, and 2035) projections have been taken from RTP 2008 prepared by SCAG. Source: U.S. Census 2000a, Summary File 1 and U.S. Census 2000b, Summary File 3, and SCAG 2008								

Table 15-9. Existing and Projected Employment by Industry for Project

	Tunnel Alignment Study Area				Shaft Site Study Area			
	Wilmington	Figueroa/ Gaffey to PV Shelf	Figueroa/ Western to Royal Palms	JWPCP East and JWPCP West	TraPac	LAXT and Southwest Marine	Angels Gate	Royal Palms
Employment and Projected Growth								
Total Employment in 2000	17,572	24,246	20,765	4,776	909	56	1,715	3,189
Unemployment Rate (2000)	9.0%	7.3%	5.3%	8.0%	15.5%	21.1%	5.3%	3.0%
Projected Employment in 2005	11,846	11,449	11,032	1,409	4,449	631	855	729
Projected Employment in 2010	12,185	11,847	11,346	1,440	4,526	657	875	788
Growth (2005-2010)	2.9%	3.5%	2.8%	2.2%	1.7%	4.1%	2.3%	8.1%
Projected Employment in 2020	12,622	12,365	11,756	1,481	4,627	691	900	865
Growth (2010-2020)	3.6%	4.4%	3.6%	2.8%	2.2%	5.2%	2.9%	9.8%
Projected Employment in 2030	13,033	12,854	12,142	1,520	4,724	723	922	938
Growth (2020-2030)	3.3%	4.0%	3.3%	2.6%	2.1%	4.6%	2.4%	8.4%
Projected Employment in 2035	13,234	13,093	12,331	1,539	4,771	738	933	974
Growth (2030-2035)	1.5%	1.9%	1.6%	1.3%	1.0%	2.1%	1.2%	3.8%
Employment by Industry (2000)								
Agriculture	0.7%	0.5%	0.3%	0.6%	0.0%	0.0%	0.4%	0.7%
Mining	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Construction	6.8%	6.1%	4.6%	6.6%	9.7%	0.0%	4.7%	4.3%
Manufacturing	21.5%	15.2%	14.4%	22.2%	31.6%	0.0%	9.5%	8.1%
Utilities	8.9%	11.1%	12.2%	8.6%	4.1%	0.0%	12.7%	14.3%
Wholesale Trade	5.0%	4.2%	4.6%	5.5%	3.0%	0.0%	4.0%	5.6%
Retail Trade	8.9%	9.8%	9.6%	10.2%	8.4%	32.1%	8.0%	8.0%
Information	2.4%	2.4%	2.9%	3.1%	2.2%	0.0%	4.7%	3.2%
Finance, Insurance, and Real Estate	4.0%	5.5%	6.1%	3.4%	1.0%	33.9%	3.8%	7.6%
Service	37.8%	40.7%	41.2%	36.8%	40.2%	33.9%	46.2%	42.9%
Government	3.6%	4.4%	4.1%	2.9%	0.0%	0.0%	6.0%	5.5%

Year 2000 information is from U.S. Census 2000, while the future years' (2005, 2010, 2020, 2030, and 2035) projections are from RTP 2008 prepared by SCAG.

Source: U.S. Census 2000a, Summary File 1 and U.S. Census 2000b, Summary File 3, and SCAG 2008

Table 15-10. Poverty and Income (1999) for Project

Study Area	Population for Whom Poverty Status Is Determined	Persons Below Poverty Threshold (1999)	Percent Below Poverty Threshold	Per Capita Income
Tunnel Alignment (Onshore)				
Wilmington	44,910	9,655	21.5%	\$12,731
Figueroa/Gaffey to PV Shelf	54,432	9,530	17.5%	\$20,356
Figueroa/Western to Royal Palms	44,703	4,635	10.4%	\$26,537
Shaft Site				
JWPCP East and JWPCP West	12,152	1,945	16.0%	\$15,319
TraPac	3,262	1,343	41.2%	\$8,087
LAXT and Southwest Marine	155	48	31.0%	\$7,639
Angels Gate	3,243	229	7.1%	\$32,307
Royal Palms	6,559	264	4.0%	\$35,058

Source: U.S. Census 2000a, Summary File 1 and U.S. Census 2000b, Summary File 3

Figueroa/Gaffey to Palos Verdes Shelf Alignment

The study area for the Figueroa/Gaffey to PV Shelf tunnel alignment consists of the U.S. Census tracts adjacent to the alignment. As shown on Figure 15-2, the adjacent census tracts are 2943.00, 2949.00, 2951.01, 2963.00, 2965.00, 2966.00, 2969.00, 2972.00, 2975.00, and 2976.00.

Population and Housing

As shown in Table 15-7, the total population of the Figueroa/Gaffey to PV Shelf tunnel alignment study area, as reported in the U.S. Census 2000, was 55,010 persons. Of the total population, White persons composed the largest racial group, at 58.0 percent. Persons identified as “Some Other Race” composed the next largest group at 22.4 percent. The remaining 19.6 percent (in order of descending proportions) were Multi-racial, Black or African American, Asian, American Indian and Alaska Native, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 47.0 percent identified themselves as Hispanic or Latino. For the study area, 27.5 percent of the population was under 18 years of age in 2000, while 9.6 percent was over 65 years of age. Demographic data from the SCAG 2008 RTP indicate that the study area is projected to have a population of 65,210 residents in 2035, an increase of approximately 18.5 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

As shown in Table 15-8, the total number of housing units within the Figueroa/Gaffey to PV Shelf tunnel alignment study area was 13,188 of which 46.6 percent comprised single-family units, 52.6 percent comprised multi-family units, and the remaining 0.8 percent was classified as other. Of the total housing units in the study area, 95.3 percent were occupied and 4.7 percent were vacant. Of the total occupied housing units, 29.8 percent were owner-occupied and 70.2 percent were rented. The proportion for owner-occupied units in the study area is substantially lower than that of the county (Table 15-4 and Table 15-8). The number of households in 2035 for the study area is projected to be 15,716 households, an increase of approximately 25.1 percent over 2000.

Employment

As summarized in Table 15-9, the Figueroa/Gaffey to PV Shelf tunnel alignment study area had 24,246 jobs and an unemployment rate of 7.3 percent in 2000. According to the SCAG 2008 RTP, the employment for the study area is projected to increase to 13,093 by 2035, an increase of only 14.3 percent

from 2005 projections. A majority of the employed workers in the study area are working in the service sector (40.7 percent), followed by the manufacturing (15.2 percent), utilities (11.1 percent), and retail trade (9.8 percent) sectors.

Income and Poverty Status

Per capita income for the Figueroa/Gaffey to PV Shelf tunnel alignment study area (\$20,356) was slightly less than the county's per capita income (\$20,683) (Table 15-6). The percentage of persons below the poverty threshold for the study area (17.5 percent) was marginally lower than that for Los Angeles County (17.9 percent) and slightly higher than that for the JOS service area (16.9 percent) (Table 15-6 and Table 15-10).

Figueroa/Western to Royal Palms Alignment

The study area for the Figueroa/Western to Royal Palms tunnel alignment consists of the U.S. Census tracts adjacent to the alignment. As shown on Figure 15-3, the adjacent census tracts are 2943.00, 2944.20, 2951.01, 2963.00, 2964.00, 2970.00, 2973.00, 2974.00, and 6707.01.

Population and Housing

As shown in Table 15-7, the total population of the Figueroa/Western to Royal Palms tunnel alignment study area, as reported in the U.S. Census 2000, was 44,919 persons. Of the total population, White persons composed the largest racial group, at 68.6 percent. Persons identified as "Some Other Race" composed the next largest group at 14.4 percent. The remaining 17.0 percent (in order of descending proportions) were Asian, Multi-racial, Black or African American, American Indian or Alaska Native, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 33.7 percent identified themselves as Hispanic or Latino. For the study area, 23.7 percent of the population was under 18 years of age in 2000, while 14.7 percent was over 65 years of age. Demographic data from the SCAG 2008 RTP indicate that the study area is projected to have a population of 52,755 residents in 2035, an increase of approximately 17.4 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

As shown in Table 15-8, the total number of housing units within the Figueroa/Western to Royal Palms tunnel alignment study area was 7,649 of which 67.1 percent comprised single-family units, 30.0 percent comprised multi-family units, and the remaining 2.9 percent was classified as other. Of the total housing units in the study area, 97.0 percent were occupied and 3.0 percent were vacant. Of the total occupied housing units, 74.5 percent were owner-occupied and 25.5 percent were rented. The proportion for owner-occupied units in the study area is higher than that of the county (Table 15-4 and Table 15-8). The number of households in 2035 for the study area is projected to be 8,599 households, an increase of approximately 15.9 percent over 2000.

Employment

As summarized in Table 15-9, the Figueroa/Western to Royal Palms tunnel alignment study area had 20,765 jobs and an unemployment rate of 5.3 percent in 2000. According to the SCAG 2008 RTP, the employment for the study area is projected to increase to 12,331 by 2035, an increase of 11.8 percent from 2005 projections. A majority of the employed workers in the study area are working in the service sector (41.2 percent), followed by the manufacturing (14.4 percent), utilities (12.2 percent), and retail trade (9.6 percent) sectors.

Income and Poverty Status

Per capita income for the Figueroa/Western to Royal Palms tunnel alignment study area (\$26,537) was substantially higher than the county's per capita income (\$20,683). The percentage of persons below the poverty threshold for the Figueroa/Western to Royal Palms tunnel alignment study area (10.4 percent)

was substantially lower than that for Los Angeles County (17.9 percent) or the JOS service area (16.9 percent) (Table 15-6 and Table 15-10).

15.2.3.2 Shaft Site

JWPCP East and JWPCP West

Because the census tracts surrounding the JWPCP East and the JWPCP West shaft sites are the same, the population and housing study area for the two shaft sites is the same. As shown on Figure 15-4, the study area for the JWPCP East and JWPCP West shaft sites consists of census tracts 2943.00 and 5436.04.

Population and Housing

As shown in Table 15-7, the total population of the JWPCP East and JWPCP West shaft sites study area, as reported in the U.S. Census 2000, was 5,162 persons. Of the total population, Asian persons composed the largest racial group, at 42.3 percent. Persons identified as White composed the next largest group at 27.6 percent. The remaining 30.1 percent (in order of descending proportions) were “Some Other Race,” Multi-racial, Black or African American, American Indian and Alaska Native, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 34.7 percent identified themselves as Hispanic or Latino. For the study area, 25.5 percent of the population was under 18 years of age in 2000, while 11.6 percent was over 65 years of age. Demographic data from the SCAG 2008 RTP indicate that the study area is projected to have a population of 6,760 residents in 2035, an increase of approximately 31.0 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

As shown in Table 15-8, the total number of housing units within the JWPCP East and JWPCP West shaft sites study area was 3,306 of which 76.1 percent comprised single-family units, 20.5 percent comprised multi-family units, and the remaining 3.4 percent was classified as other. Of the total housing units in the study area, 96.4 percent were occupied and 3.6 percent were vacant. Of the total occupied housing units, 67.9 percent were owner-occupied and 32.1 percent were rented. The proportion for owner-occupied units in the study area is higher than that of the county (Table 15-4 and Table 15-8). The number of households in 2035 for the study area is projected to be 3,977 households, an increase of approximately 24.8 percent over 2000.

Employment

As summarized in Table 15-9, the JWPCP East and JWPCP West shaft sites study area had 4,776 jobs and an unemployment rate of 8.0 percent in 2000. According to the SCAG 2008 RTP, the employment for the study area is projected to increase to 1,539 by 2035, an increase of 9.2 percent from 2005 projections. A majority of the employed workers in the study area are working in the service sector (36.8 percent), followed by the manufacturing (22.2 percent), retail trade (10.2 percent), and utilities (8.6 percent) sectors.

Income and Poverty Status

Per capita income for the JWPCP East and JWPCP West shaft sites study area (\$15,319) was less than the county’s per capita income (\$20,683) (Table 15-6). The percentage of persons below the poverty threshold for the JWPCP East and JWPCP West shaft sites study area (16.0 percent) was lower than that for Los Angeles County (17.9 percent) or the JOS service area (16.9 percent) (Table 15-6 and Table 15-10).

TraPac

The study area for the Trans Pacific Container Service Corporation (TraPac) shaft site consists of census tract 2949.00 (see Figure 15-4).

Population and Housing

As shown in Table 15-7, the total population of the TraPac shaft site study area, as reported in the U.S. Census 2000, was 3,262 persons. Of the total population, persons identified as “Some Other Race” composed the largest racial group, at 51.7 percent. Persons identified as White composed the next largest group at 31.9 percent. The remaining 16.4 percent (in order of descending proportions) were Black or African American, Multi-racial, Asian, American Indian and Alaska Native, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 86.6 percent identified themselves as Hispanic or Latino. For the study area, 41.9 percent of the population was under 18 years of age in 2000, while 5.0 percent was over 65 years of age. Demographic data from the SCAG 2008 RTP indicate that the study area is projected to have a population of 3,907 residents in 2035, an increase of approximately 19.8 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

As shown in Table 15-8, the total number of housing units within the TraPac shaft site study area was 839, of which 39.1 percent comprised single-family units, and the remaining 60.9 percent comprised multi-family units. Of the total housing units in the study area, 97.1 percent were occupied and 2.9 percent were vacant. Of the total occupied housing units, 24.9 percent were owner-occupied and 75.1 percent were rented. The proportion for owner-occupied units in the study area is substantially lower than that of the county (Table 15-4 and Table 15-8). The number of households in 2035 for the study area is projected to be 1,022 households, an increase of approximately 25.3 percent over 2000.

Employment

As summarized in Table 15-9, the TraPac shaft site study area had 909 jobs and an unemployment rate of 15.5 percent in 2000. According to the SCAG 2008 RTP, the employment for the study area is projected to increase to 4,771 by 2035, an increase of 7.2 percent from 2005 projections. A majority of the employed workers in the study area are working in the service sector (40.2 percent), followed by the manufacturing (31.6 percent), retail trade (8.4 percent), and construction (9.7 percent) sectors.

Income and Poverty Status

Per capita income for the TraPac shaft site study area (\$8,087) was substantially less than the county’s per capita income (\$20,683) (Table 15-6). The percentage of persons below the poverty threshold for the study area (41.2 percent) was substantially higher than that for Los Angeles County (17.9 percent) or the JOS service area (16.9 percent) (Table 15-6 and Table 15-10).

LAXT and Southwest Marine Shaft Sites

Because the Los Angeles Export Terminal (LAXT) shaft site and the Southwest Marine shaft site are in the same census tract, the population and housing study area for the two shaft sites is same. The study area for the LAXT and Southwest Marine shaft sites consists of census tract 2961.00 (see Figure 15-4).

Population and Housing

As shown in Table 15-7, the total population of the LAXT and Southwest Marine shaft sites study area, as reported in the U.S. Census 2000, was 1,434 persons. Of the total population, White persons composed the largest racial group, at 45.9 percent. Persons identified as Black or African American composed the next largest group at 23.9 percent. The remaining 30.2 percent (in order of descending proportions) were “Some Other Race,” Multi-racial, Asian, American Indian and Alaska Native, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 37.9 percent identified themselves as Hispanic or Latino. For the LAXT and Southwest Marine shaft sites study area, 5.2 percent of the population was under 18 years of age in 2000, while 4.0 percent was over 65 years of age. Demographic data from the SCAG 2008 RTP indicate that the study area is projected to have a population of 1,528 residents in 2035, an increase of approximately 6.6 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

As shown in Table 15-8, the total number of housing units within the LAXT and Southwest Marine shaft sites study area was 159 of which 28.3 percent comprised single-family units, 16.0 percent comprised multi-family units, and the remaining 55.7 percent was classified as other. Of the total housing units in the LAXT and Southwest Marine shaft sites study area, 62.8 percent were occupied and 37.2 percent were vacant. Of the total occupied housing units, 60.4 percent were owner-occupied and 39.6 percent were rented. The proportion for owner-occupied units in the study area is higher than that of the county (Table 15-4 and Table 15-8). The number of households in 2035 for the study area is projected to be 132 households, a decrease of approximately 20.4 percent over 2000.

Employment

As summarized in Table 15-9, the LAXT and Southwest Marine shaft sites study area had 56 jobs and an unemployment rate of 21.1 percent in 2000. According to the SCAG 2008 RTP, the employment for the study area is projected to increase to 738 by 2035, an increase of 17.0 percent from 2005 projections. A majority of the employed workers in the study area are working in the service and finance, insurance, and real estate sectors (33.9 percent respectively), followed closely by the retail trade sector (32.1 percent).

Income and Poverty Status

Per capita income for the LAXT and Southwest Marine shaft sites study area (\$7,639) was substantially less than the county's per capita income (\$20,683) (Table 15-6). The percentage of persons below the poverty threshold for the study area (31.0 percent) was substantially higher than that of Los Angeles County (17.9 percent) or the JOS service area (16.9 percent) (Table 15-6 and Table 15-10).

Angels Gate

The study area for the Angels Gate shaft site consists of census tract 2975.00 (see Figure 15-4).

Population and Housing

As shown in Table 15-7, the total population of the Angels Gate shaft site study area, as reported in the U.S. Census 2000, was 3,324 persons. Of the total population, White persons composed the largest racial group, at 79.8 percent. Persons identified as "Some Other Race" composed the next largest group at 5.8 percent. The remaining 14.4 percent (in order of descending proportions) were Multi-racial, Asian, American Indian and Alaska Native, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 17.5 percent identified themselves as Hispanic or Latino. For the study area, 19.8 percent of the population was under 18 years of age in 2000, while 18.2 percent was over 65 years of age. Demographic data from the SCAG 2008 RTP indicate that the study area is projected to have a population of 3,948 residents in 2035, an increase of approximately 18.8 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

As shown in Table 15-8, the total number of housing units within the Angels Gate shaft site study area was 1,436 of which 68.2 percent comprised single-family units, and the remaining 31.8 percent comprised multi-family units. Of the total housing units in the study area, 96.2 percent were occupied and 3.8 percent were vacant. Of the total occupied housing units, 63.5 percent were owner-occupied and 36.5 percent were rented. The proportion for owner-occupied units in the Angels Gate shaft site study area is higher than that of the county (Table 15-4 and Table 15-8). The number of households in 2035 for the study area is projected to be 1,682 households, an increase of approximately 21.7 percent over 2000.

Employment

As summarized in Table 15-9, the Angels Gate shaft site study area had 1,715 jobs and an unemployment rate of 5.3 percent in 2000. According to the SCAG 2008 RTP, the employment for the study area is projected to increase to 933 by 2035, an increase of 9.1 percent from 2005 projections. A majority of the

employed workers in the study area are working in the service sector (46.2 percent), followed by the utilities (12.7 percent), manufacturing (8.4 percent), and retail trade (8.0 percent) sectors.

Income and Poverty Status

Per capita income for the Angels Gate shaft site study area (\$32,307) was substantially higher than the county's per capita income (\$20,683) (Table 15-6). The percentage of persons below the poverty threshold for the study area (7.1 percent) was substantially lower than that for Los Angeles County (17.9 percent) or the JOS service area (16.9 percent) (Table 15-6 and Table 15-10).

Royal Palms

The study area for the Royal Palms shaft site consists of census tracts 2973.00 and 2974.00 (see Figure 15-4).

Population and Housing

As shown in Table 15-7, the total population of the Royal Palms shaft site study area, as reported in the U.S. Census 2000, was 6,501 persons. Of the total population, White persons composed the largest racial group, at 85.1 percent. Persons identified as Asian composed the next largest group at 4.1 percent. The remaining 10.8 percent (in order of descending proportions) were Multi-racial, "Some Other Race," Black or African American, American Indian and Alaska Native, and Native Hawaiian and Other Pacific Islander. Of these racial groups, 12.5 percent identified themselves as Hispanic or Latino. For the study area, 19.9 percent of the population was under 18 years of age in 2000, while 22.7 percent was over 65 years of age. Demographic data from the SCAG 2008 RTP indicate that the study area is projected to have a population of 7,869 residents in 2035, an increase of approximately 21.0 percent from 2000. The intermediary growth trends for the county are summarized in Table 15-3.

As shown in Table 15-8, the total number of housing units within the Royal Palms shaft site study area was 2,737 of which 77.0 percent comprised single-family units, 14.4 percent comprised multi-family units, and the remaining 8.6 percent was classified as other. Of the total housing units in the study area, 96.7 percent were occupied and 3.3 percent were vacant. Of the total occupied housing units, 78.0 percent were owner-occupied and 22.0 percent were rented. The proportion for owner-occupied units in the study area is higher than that of the county (Table 15-4 and Table 15-8). The number of households in 2035 for the study area is projected to be 3,264 households, an increase of approximately 23.3 percent over 2000.

Employment

As summarized in Table 15-9, the Royal Palms shaft site study area had 3,189 jobs and an unemployment rate of 3.0 percent in 2000. According to the SCAG 2008 RTP, the employment for the study area is projected to increase to 974 by 2035, an increase of 33.6 percent from 2005 projections. A majority of the employed workers in the study area are working in the service sector (42.9 percent), followed by the utilities (14.3 percent), manufacturing (8.1 percent), and retail trade (8.0 percent) sectors.

Income and Poverty Status

Per capita income for the Royal Palms shaft site study area (\$35,058) was substantially higher than the county's per capita income (\$20,683) (Table 15-6). The proportion of persons below the poverty threshold for the study area (4.0 percent) was substantially lower than that for Los Angeles County (17.9 percent) or the JOS service area (16.9 percent) (Table 15-6 and Table 15-10).

15.2.3.3 Riser/Diffuser Area

The study area for the riser/diffuser areas would correspond to the study areas for the Royal Palms and Angels Gate shaft sites (see Figure 15-4) during construction because construction activities would be visible from these study areas. During the operation phase, no existing population or housing would be affected by the riser and diffuser or the existing ocean outfalls, because the riser/diffuser areas would be located on the seafloor.

15.3 Regulatory Setting

15.3.1 Federal

15.3.1.1 Executive Order 12898

In 1994, in response to growing concern that minority and/or low-income populations bear a disproportionate amount of adverse health and environmental effects, President Clinton issued Executive Order 12898 on Environmental Justice, formally focusing federal agency attention on these issues. The Executive Order contains a general directive that states that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

The order authorized the creation of an Interagency Working Group (IWG) on Environmental Justice, overseen by the U.S. Environmental Protection Agency (EPA), to implement the Executive Order’s requirements. The IWG includes representatives of a number of executive agencies and offices and has developed guidance for terms contained in the Executive Order. The EPA provides the following definitions:

Environmental Justice. The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. (EPA 2004:Section 2.2.)

Fair Treatment. No group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. (EPA 2004:Section 2.2.)

Meaningful Involvement.

1. Potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health.
2. The public’s contribution can influence the regulatory agency’s decision.
3. The concerns of all participants involved will be considered in the decision making process.
4. The decision makers seek out and facilitate the involvement of those potentially affected. (EPA 2004:Section 2.2.)

Disproportionately High and Adverse Effect. An adverse effect or impact that: (1) is predominately borne by any segment of the population, including, for example, a minority

population and/or a low-income population; or (2) will be suffered by a minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect or impact that will be suffered by a non-minority population and/or non-low-income population. (EPA 2004:Section 3.1.)

15.3.1.2 Council on Environmental Quality: Environmental Justice—Guidance under the National Environmental Policy Act

While the EPA has lead responsibility for implementation of Executive Order 12898 as chair of the IWG on environmental justice, the Council on Environmental Quality (CEQ) has oversight of the federal government's compliance with this Executive Order and NEPA. The CEQ, in consultation with the EPA and other agencies, has prepared guidance to assist federal agencies in NEPA compliance in its Environmental Justice: Guidance under the National Environmental Policy Act (CEQ Guidance) (CEQ 1997). The CEQ Guidance provides an overview of Executive Order 12898; summarizes its relationship to NEPA; recommends methods for the integration of environmental justice analysis into NEPA documents; and incorporates as an appendix the IWG's definitions of key terms and concepts contained in the executive order.

- Agencies are permitted to supplement the CEQ Guidance with their own, more specific guidance tailored to their programs or activities or departments, insofar as is permitted by law.
- Neither the executive order nor the CEQ Guidance proscribes to a specific format for environmental justice assessments in the context of NEPA documents. However, the CEQ Guidance identifies the following six general principles intended to guide the integration of environmental justice assessment into NEPA compliance, and which are applicable to the Clearwater Program:
 - Agencies should consider the composition of the affected area to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action and, if so, whether there may be disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, or Indian tribes.
 - Agencies should consider relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards, to the extent such information is reasonably available. For example, data may suggest there are disproportionately high and adverse human health or environmental effects on a minority population, low-income population, or Indian tribe from the agency action. Agencies should consider these multiple, or cumulative effects, even if certain effects are not within the control or subject to the discretion of the agency proposing the action.
 - Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental effects of the agency's proposed action. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed action; and the nature and degree of impact on the physical and social structure of the community.
 - Agencies should develop effective public participation strategies. Agencies should, as appropriate, acknowledge and seek to overcome linguistic, cultural, institutional, geographic,

and other barriers to meaningful participation, and should incorporate active outreach to affected groups.

- Agencies should assure meaningful community representation in the process. Agencies should be aware of the diverse constituencies within any particular community when they seek community representation and should endeavor to have complete representation of the community as a whole. Agencies also should be aware that community participation must occur as early as possible if it is to be meaningful.
- Agencies should seek tribal representation in the process in a manner that is consistent with the government-to-government relationship between the United States and tribal governments, the federal government's trust responsibility to federally-recognized tribes, and any treaty rights.

The CEQ Guidance states that the identification of a disproportionately high and adverse human health or environmental effect on a low-income or minority population does not preclude a proposed agency action from going forward or compel a finding that a proposed project is environmentally unacceptable. Instead, the identification of such effects is expected to encourage agency consideration of alternatives, mitigation measures, and preferences expressed by the affected community or population.

15.3.2 State

15.3.2.1 Public Resource Codes Sections 71110–71116

Environmental justice is defined by California state law as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.”

Public Resource Code (PRC) Section 71113 states that the mission of California Environmental Protection Agency (CalEPA) includes ensuring that it conducts any activities that substantially affect human health or the environment in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority and low-income populations of the state.

As part of its mission, CalEPA was required to develop a model environmental justice mission statement for its boards, departments, and offices. CalEPA was tasked to develop a Working Group on Environmental Justice to assist it in identifying any policy gaps or obstacles impeding the achievement of environmental justice. An advisory committee including representatives of numerous state agencies was established to assist the Working Group pursuant to the development of a CalEPA intra-agency strategy for addressing environmental justice. PRC Sections 71110–71116 charge the CalEPA with the following responsibilities:

- Conduct programs, policies, and activities that substantially affect human health or the environment in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state.
- Promote enforcement of all health and environmental statutes within CalEPA's jurisdiction in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority populations and low-income populations of the state.
- Ensure greater public participation in the agency's development, adoption, and implementation of environmental regulations and policies.

- Improve research and data collection for programs within the agency relating to the health and environment of minority populations and low-income populations of the state.
- Coordinate efforts and share information with the EPA.
- Identify differential patterns of consumption of natural resources among people of different socio-economic classifications for programs within the agency.
- Consult with and review any information received from the Working Group on Environmental Justice pursuant to developing an agency-wide strategy for CalEPA.
- Develop a model environmental justice mission statement for CalEPA's boards, departments, and offices.
- Consult with, review, and evaluate any information received from the Working Group on Environmental Justice pursuant to the development of its model environmental justice mission statement.
- Develop an agency-wide strategy to identify and address any gaps in existing programs, policies, or activities that may impede the achievement of environmental justice.
- Make recommendations on other matters needed to assist the agency in developing an intra-agency environmental justice strategy.

15.3.2.2 California Government Code Sections 65040–65040.12

California Government Code Sections 65040–65040.12 identify the Governor's Office of Planning and Research (OPR) as the comprehensive state agency responsible for long-range planning and development. Among its responsibilities, OPR is tasked with serving as the coordinating agency in state government for environmental justice issues. Specifically, OPR is required to consult with CalEPA, the state Resources Agency, the Working Group on Environmental Justice, and other state agencies as appropriate, and share information with the CEQ, EPA, and other federal agencies as appropriate to ensure consistency.

CalEPA released its final Intra-Agency Environmental Justice Strategy in August 2004. The document sets forth the agency's broad vision for integrating environmental justice into the programs, policies, and activities of its departments. It contains a series of goals, including the integration of environmental justice into the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.

15.3.2.3 California State Lands Commission Environmental Justice Policy

The California State Lands Commission (CSLC) adopted an Environmental Justice Policy on October 1, 2002 (CSLC 2002), wherein the CSLC pledges to continue and enhance its processes, decisions, and programs with environmental justice as an essential consideration by, among other actions, "identifying relevant populations that might be adversely affected by commission programs or by projects submitted by outside parties for its consideration." The policy also cites the definition of environmental justice in state law and points out that this definition is consistent with the Public Trust Doctrine principle that the management of trust lands is for the benefit of all of the people. To date, the CSLC has not issued any guidance to implement the policy, although environmental justice is addressed in CSLC environmental documents.

15.3.2.4 California Planning and Zoning Law

California Planning and Zoning Law (Government Code Section 65000 et seq.) requires each city and county to adopt a general plan for the physical development of the land housing stock within its planning

area. The general plan must contain land use, housing, circulation, open space, conservation, noise, and safety elements, as well as any other elements that the city or county may wish to adopt.

15.3.3 Regional

15.3.3.1 Southern California Association of Governments

SCAG's Regional Comprehensive Plan and Guide and Regional Housing Needs Assessment (RHNA) are tools for coordinating regional planning and housing development strategies in Southern California. State housing law mandates that local governments, through councils of governments, identify existing and future housing needs in a RHNA. The RHNA provides recommendations and guidelines to identify housing needs within cities. It does not impose requirements as to housing development in cities.

15.3.3.2 South Coast Air Quality Management District

In 1997, the South Coast Air Quality Management District (SCAQMD) adopted a set of guiding principles on environmental justice, addressing the rights of area citizens to clean air, the expectation of government safeguards for public health, and access to scientific findings concerning public health. Subsequent follow-up plans and initiatives led to the SCAQMD Board's approval of the 2003–2004 Environmental Justice Workplan. SCAQMD intends to update this as needed to reflect ongoing and new initiatives.

SCAQMD's environmental justice program is intended to "ensure that everyone has the right to equal protection from air pollution and fair access to the decision making process that works to improve the quality of air within their communities." Environmental justice is defined by SCAQMD as "...equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

15.3.4 Local

15.3.4.1 General Plan of the City of Los Angeles

Housing Element

A housing element sets forth a city's 5-year strategy to preserve and enhance the community's character and expand housing opportunities for all economic segments; it also provides guidance for local government decision-making in all matters related to housing.

The city is required by state housing law to provide a detailed program to address the housing needs of its current and future residents. Specifically, the law requires the following:

- The housing element shall consist of an identification and analysis of existing and projected housing needs and a statement of goals, policies, and quantified objectives and scheduled programs for the preservation, improvement, and development of housing. The housing element shall identify adequate sites for housing, including rental housing, factory-built housing, and mobile homes, and shall make adequate provision for the existing and projected needs of all economic segments of the community.

The City of Los Angeles General Plan Housing Element consists of the following major components:

- Needs Assessment—an analysis of the demographic, household, and housing characteristics and trends.
- Constraints to Residential Development—a review of potential and actual market, governmental, environmental, and other constraints to meeting the identified housing needs.
- Issues, Goals, Objectives and Policies—a set of objectives and policies to address the housing needs of the city.
- Implementation Programs—a review of the strategies contained within the housing element that will assist the city in meeting the housing needs and goals.

Environmental Justice

The City of Los Angeles General Plan has adopted environmental justice policies as outlined in its framework and transportation elements; these policies are summarized in this section. The framework element is a “strategy for long-term growth which sets a citywide context to guide the update of the community plan and citywide elements.”

The framework element includes a policy to “assure the fair treatment of people of all races, cultures, incomes and education levels with respect to the development, implementation and enforcement of environmental laws, regulations and policies, including affirmative efforts to inform and involve environmental groups, especially environmental justice groups, in early planning stages through notification and two-way communication.”

The transportation element includes a policy to “assure the fair and equitable treatment of people of all races, cultures, incomes and education levels with respect to the development and implementation of citywide transportation policies and programs, including affirmative efforts to inform and involve environmental groups, especially environmental justice groups, in the planning and monitoring process through notification and two-way communication.”

The city of Los Angeles also has committed to a Compact for Environmental Justice, which was adopted by the City’s Environmental Affairs Department as the City’s foundation for a sustainable urban environment. Statements relevant to the proposed project include the following:

- All people in Los Angeles are entitled to equal access to public open space and recreation, clean water, and uncontaminated neighborhoods.
- All planning and regulatory processes must involve residents and community representatives in decision making from start to finish.

15.4 Environmental Impacts and Mitigation Measures

15.4.1 Methodology and Assumptions

15.4.1.1 Environmental Justice

The following methodology and assessment addresses the potential for the project to cause disproportionately high and adverse human health and environmental effects on minority and/or low-income populations. It is provided in compliance with federal Executive Order 12898, Federal

Actions to Address Environmental Justice in Minority and Low-Income Populations, and in accordance with the CEQ Guidance (CEQ 1997), which are both described in Section 15.3.1.

The CEQ Guidance defines minority persons as “individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black (not of Hispanic origin); or Hispanic” (CEQ 1997:25). Hispanic or Latino refers to an ethnicity whereas American Indian, Alaskan Native, Asian, Pacific Islander, and Black or African-American (as well as White or European-American) refer to racial categories; thus, for census purposes, individuals classify themselves into racial categories as well as ethnic categories, where ethnic categories include Hispanic or Latino and non-Hispanic or Latino. The U.S. Census 2000 allowed individuals to choose more than one race. For this analysis, consistent with guidance from CEQ (1997) as well as the EPA (1998, 1999), minority refers to people who are Hispanic or Latino of any race, as well as those who are non-Hispanic or Latino of a race other than White or European-American.

The same CEQ Guidance suggests low-income populations be identified using the national poverty thresholds from the U.S. Census Bureau; guidance from the EPA (1998, 1999) also suggests using other regional low-income definitions as appropriate. To establish context for this environmental justice analysis, race and ethnicity (i.e., minority) and income characteristics of the population residing in the vicinity of the project were reviewed. The review concluded that there is presence of minority or low-income populations in project vicinity. If the percentage of population below the poverty line in the study area is more than the county’s percentage, the population was considered low income.

For this assessment, the area of potential effect was determined in accordance the CEQ Guidance for identifying the affected community, which requires consideration of the nature of likely project impacts and identification of a corresponding unit of geographic analysis. The area of potential project effect for purposes of environmental justice corresponds to the areas of effect associated with the specific environmental issues analyzed in this EIR/EIS. Areas of potential effect differ somewhat for each environmental issue. The affected community corresponds with the study area for each alignment and shaft site. The county of Los Angeles forms part of the reference community. The reference community is used to determine whether a disproportionately high and adverse human health or environmental impact would be borne by minority and/or low-income populations in the affected community when compared to the general population in and around the project.

The methodology for conducting the impact analysis for environmental justice included reviewing impact conclusions for each of the resources in Chapters 4 through 20. If the EIR/EIS identified impacts considered significant and adverse, an evaluation was conducted to determine if these impacts would result in disproportionately high and adverse effects on minority populations or low-income populations for the affected community.

The L.A. CEQA Thresholds (City of Los Angeles 2006) does not identify significance thresholds for environmental justice or for disproportionately high and adverse effects on minority and low-income populations. In the absence of local thresholds for the project, federal guidance provided by CEQ has been utilized as the basis for determining whether the project would result in environmental justice effects. CEQ has oversight of the federal government’s compliance with Executive Order 12898 and NEPA and has published the CEQ Guidance (CEQ 1997) as described in Section 15.3.1.2. The CEQ Guidance identifies three factors to be considered to the extent practicable when determining whether environmental effects are disproportionately high and adverse (CEQ 1997: 26–27):

- Whether there is or would be an impact on the natural or physical environment that significantly and adversely affects a minority population, or low-income population. Such effects may include

ecological, cultural, human health, economic, or social impacts on minority communities, low-income communities, or Indian tribes when those impacts are interrelated to impacts on the natural or physical environment.

- Whether the environmental effects are significant and are or may be having an adverse impact on minority populations, or low-income populations, that appreciably exceeds or is likely to appreciably exceed those on the general population or other appropriate comparison group.
- Whether the environmental effects occur or would occur in a minority population or low-income population affected by cumulative or multiple adverse exposures from environmental hazards.

Findings for project-level impacts were reviewed to determine which impacts would be significant and would, therefore, require environmental justice analysis.

- For impacts that were classified as less than significant or as no impact, no additional evaluation was needed because those impacts would not result in disproportionate effects on minority and low income populations.
- Findings of significant impacts were reviewed to determine whether those impacts could cause substantial effects on human populations (i.e., the public), as opposed to primarily affecting the natural or physical environment and/or resulting in limited public exposure. Significant impacts that would not be associated with substantial effects on human populations would not result in disproportionately high and adverse effects on minority and low-income populations
- For findings of significant impacts that would affect the public, mitigation measures were considered to determine whether adverse effects would still be significant (as defined by CEQA) after mitigation measures are implemented. If the mitigated impact would have a less than significant impact on minority and/or low-income populations, a detailed analysis was not conducted.
- If the impact would be significant and unavoidable, the impact was further evaluated to determine whether it would result in disproportionately high and adverse human health or environmental effects on minority and low-income populations. If the specific location of the impact was identified, the population demographics of the affected area were estimated using data from the U.S. Census 2000. In cases where the boundaries of the impacted area were not known, conclusions were drawn based on available information. In cases where data limitations did not allow a full evaluation, this fact was identified.
- In cases where the minority and low-income characteristics of populations in the impacted area could be estimated, the impact area characteristics were compared to data for the general population (i.e., Los Angeles County). If the minority population in the adversely affected area is greater than 50 percent or if either the minority percentage or the low-income percentage of the population in the adversely affected area is meaningfully greater than that of the general population, disproportionate effects on minority or low-income populations could occur. (Meaningfully greater is not defined in CEQ or EPA guidance; for this analysis, meaningfully greater is interpreted to mean simply greater, which provides for a conservative analysis.) In addition, disproportionate effects could also occur in cases where impacts are predominantly borne by minority or low-income populations.
- Proposed project benefits were also considered to determine whether adverse effects would still be appreciably more severe or of greater magnitude after these other elements are considered. In addition, if significant unavoidable impacts were determined to be disproportionate, the identified mitigation measures were reviewed to determine whether they would be effective in avoiding or

reducing the impacts on minority and low-income populations. If necessary, additional mitigation measures were considered.

15.4.1.2 Population, Housing, and Employment

Impacts on population, housing, and employment are evaluated by determining if a substantial change in local employment or the labor force, or a substantial increase in housing, would occur in the project areas. The analysis is based on future employment (construction and operations) generated from implementation of the project relative to census tract level employment forecasts developed by SCAG under the RTP (SCAG 2008). As a regional planning agency, SCAG is responsible for developing the forecasts, programs, measures, and strategies portions of the South Coast Air Quality Management Plan.

15.4.1.3 Baseline

CEQA Baseline

The CEQA baseline includes the population, housing, and employment information for U.S. Census 2000 provided at the locations where project elements would be constructed and operated.

NEPA No-Federal-Action Baseline

The NEPA no-federal-action baseline is the same as the CEQA baseline for the project elements for population, housing, and employment.

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.

15.4.2 Thresholds of Significance

The project would pose a significant impact if it exceeds any of the following thresholds for employment, housing, socioeconomics, or environmental justice (SOC):

SOC-1. Results in displacement of a large number of people necessitating the construction of replacement housing elsewhere.

SOC-2. Results in displacement of substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere.

SOC-3. Results in environmental impacts that are disproportionately high and adverse on minority and low-income populations.

SOC-4. Causes a substantial change in local employment or the labor force.

SOC-5. Causes a substantial decrease in property values in the project area.

Program and project elements were analyzed by threshold in the Preliminary Screening Analysis (Appendix 1-A) to identify potentially significant impacts on employment, housing, socioeconomics, and environmental justice before mitigation. Table 15-11 identifies which elements were brought forward for further analysis by threshold in this EIR/EIS for Alternatives 1 through 4. If applicable, Table 15-11 also identifies thresholds evaluated in this EIR/EIS if an emergency discharge into various water courses were to occur under the No-Project or No-Federal Action Alternatives, as described in Sections 3.4.1.5 and 3.4.1.6.

Table 15-11. Thresholds Evaluated

Project Element	Alt.	Threshold				
		SOC-1	SOC-2	SOC-3 ^b	SOC-4	SOC-5
Wilmington to SP Shelf (onshore tunnel) ^a	1,2			X	X	
Wilmington to SP Shelf (offshore tunnel)	1				X	
Wilmington to PV Shelf (onshore tunnel) ^a	1,2			X	X	
Wilmington to PV Shelf (offshore tunnel)	2				X	
Figueroa/Gaffey to PV Shelf (onshore tunnel)	3			X	X	
Figueroa/Gaffey to PV Shelf (offshore tunnel)	3				X	
Figueroa/Western to Royal Palms (onshore tunnel)	4			X	X	
JWPCP East Shaft Site	1,2			X	X	
TraPac Shaft Site	1,2			X	X	
LAXT Shaft Site	1,2			X	X	
Southwest Marine Shaft Site	1,2			X	X	
JWPCP West Shaft Site	3,4			X	X	
Angels Gate Shaft Site	3			X	X	
Royal Palms Shaft Site	4			X	X	
SP Shelf Riser/Diffuser Area	1				X	
PV Shelf Riser/Diffuser Area	2,3				X	
Existing Ocean Outfalls Riser/Diffuser Area	1-4			X	X	
Emergency Discharge	6			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 Only project elements with an impact determination of significant and unavoidable were brought forward for analysis under SOC-3 (i.e., environmental justice) (see Table 15-12).

Alt. = alternative

Less than significant impacts would have no potential to have a disproportionately high and adverse effect on minority and low-income populations; therefore, only impacts that were determined to be significant and unavoidable in the EIR/EIS are analyzed under Impact SOC-3 and summarized in Table 15-12. It should be noted that Impact SOC-3 analyzes disproportionately high and adverse impacts on minority and low-income populations as required under NEPA; therefore, there is no CEQA analysis provided under Impact SOC-3.

Table 15-12. Significant and Unavoidable Impacts Analyzed for Impact SOC-3

Project Element	Alt.	Threshold											
		AES-1	AES-3	AQ-4	CUL-3	GEO-5	HYD-1	HYD-5	HYD-7	MAR-6	MAR-7	REC-1	UTL-1
Wilmington to SP Shelf (onshore tunnel) ^a	1,2				X (C)								
Wilmington to PV Shelf (onshore tunnel) ^a	1,2				X (C)								
Figuroa/Gaffey to PV Shelf (onshore tunnel)	3				X (C)								
Figuroa/Western to Royal Palms (onshore tunnel)	4				X (C)								
JWPCP East Shaft Site	1,2		X (C)		X (C)								
TraPac Shaft Site	1,2				X (C)								
LAXT Shaft Site	1,2				X (C)								
Southwest Marine Shaft Site	1,2				X (C)								
JWPCP West Shaft Site	3,4				X (C)								
Angels Gate Shaft Site	3	X (C)	X (C)		X (C)								
Royal Palms Shaft Site	4	X (C)	X (C)		X (C)								
Existing Ocean Outfalls Riser/Diffuser Area	1-4	X (C)	X (C)										
Emergency Discharge	6					X (O)	X (O)	X (O)	X (O)	X (O)	X (O)	X (O)	X (O)

^a The onshore tunnel alignment for the Wilmington to SP Shelf is the same as the onshore tunnel alignment for the Wilmington to PV Shelf.

Alt. = alternative

C = construction

O = operation

AES-1 = Would the project conflict with adopted goals or policies that protect visual quality of a designated scenic vista or scenic resource, resulting in an adverse aesthetic impact such as obstruction of view or degradation of visual character?

AES-3 = Would the project substantially degrade the existing visual character or quality of the site or its surroundings?

CUL-3 = Would the project result in disturbance or destruction of a unique paleontological resource or site or unique geologic feature?

GEO-5 = Would the project substantially accelerate natural processes of wind and water erosion and sedimentation, resulting in sediment runoff or deposition, which would not be contained or controlled on site?

HYD-1 = Would the project create pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code or cause regulatory standards to be violated, as defined in the applicable NPDES stormwater permit or water quality control plan for the receiving waterbody?

HYD-5 = Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on site or off site?

HYD-7 = Would the project create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

MAR-6 = Would the project result in a public health hazard due to the release of treated effluent?

MAR-7 = Would the project impair beneficial uses designated in the California Ocean Plan?

REC-1 = Would the project result in a substantial loss or diminished quality of recreational, educational, or visitor-oriented opportunities, facilities, or resources?

UTL-1 = Would the project exceed wastewater treatment requirements of the applicable regional water quality control board?

Note that significant and unavoidable air quality impacts would occur as a result of NO_x emissions during construction of the Clearwater Program. Because emissions are analyzed on a regional level and would occur throughout the study area, the impacts on the reference community (Los Angeles County) and affected community would be same. Air quality impacts would not result in disproportionately high and adverse effects on minority and low-income populations, and are not discussed under Impact SOC-3. Additionally, in accordance with the CEQ Guidance, a NEPA impact determination is not required for

greenhouse gas (GHG) emissions. Therefore, GHG emissions also are not discussed under Impact SOC-3.

In the alternatives analysis that follows, if a project element is common to more than one alternative, a detailed discussion is presented only in the first alternative in which it appears. Additionally, in subsequent alternatives where no new elements are introduced under a specific threshold, that threshold is not repeated.

15.4.3 Alternative 1

15.4.3.1 Program

Alternative 1 (Program) would result in no impacts or less than significant impacts on employment and housing. A detailed discussion on the determinations can be found in the Preliminary Screening Analysis (Appendix 1-A). Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis.

15.4.3.2 Project

Impact SOC-3 analyzes disproportionately high and adverse impacts on minority and low-income populations as required under NEPA; therefore, there is no CEQA analysis provided under Impact SOC-3.

Impact SOC-3. Would Alternative 1 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low-income populations?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore)

The affected community for the Wilmington to SP Shelf onshore tunnel alignment is considered to be the population residing within the Wilmington tunnel alignment study area, which extends from the JWPCP East shaft site to the Southwest Marine shaft site. Note that impacts on environmental justice would not occur from activities on the segment of the tunnel alignment that extends into the ocean because populations do not live in the ocean. However, the offshore tunnel alignment between the TraPac and Southwest Marine shaft sites occurs on land and may affect the public. Therefore, for purposes of environmental justice, the Wilmington to SP Shelf onshore tunnel alignment extends to the Southwest Marine shaft site (see Figure 15-1).

Based on a review of the population and income characteristics of the Wilmington tunnel alignment study area, there is a presence of minority populations (see Table 15-7) with 65.1 percent of the population identifying their ethnicity as Hispanic or Latino and 57.8 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of the study area (\$12,731) is much less than that of the county, and the proportion of population below poverty thresholds (21.5 percent) is much higher in the study area when compared to the county (see Table 15-6 and Table 15-10). Thus, the study area has a greater presence of minority and low-income populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts for the Wilmington to SP Shelf onshore tunnel would be mitigated; however, construction would result in significant and unavoidable impacts on cultural resources. These impacts are further evaluated to determine if they would be disproportionately borne by low-income and minority populations.

Cultural Resources. The geologic formations for the Wilmington to SP Shelf onshore tunnel are Lakewood Formation, San Pedro Sand, and Timms Point Silt. The construction of the Wilmington to SP Shelf onshore tunnel may result in impacts associated with unknown buried paleontological resources that would be significant and could not be mitigated. However, these impacts would occur subsurface on paleontological resources. Because the impacts on paleontological resources would not affect human populations, this would not constitute a disproportionately high and adverse effect on minority or low-income populations. Environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – JWPCP East

The affected community for the JWPCP East shaft site is considered to be the population residing within the JWPCP East and JWPCP West shaft sites study area. Based on a review of the population and income characteristics of the study area, there is a presence of minority populations (see Table 15-7) with 34.7 percent of the population identifying their ethnicity as Hispanic or Latino and 72.7 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of the study area (\$15,319) is lower than that of the county, and the proportion of population below poverty thresholds (16.0 percent) in the study area is similar to the county (see Table 15-6 and Table 15-10). Thus, the study area has a greater presence of minority and low-income populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts at the JWPCP East shaft site would be mitigated; however, construction would result in significant and unavoidable impacts on aesthetic and cultural resources. These impacts are further evaluated to determine if they would be disproportionately borne by low-income and minority populations.

Aesthetic Resources. Residents located immediately across Lomita Boulevard from the site would be the most directly affected by a change in their views from an approximately 12-foot-tall block wall to an approximately 20-foot-tall noise barrier behind the existing wall, within the bounds of the shaft site. The sensitivity of these residents to such impacts would be high, and they are likely to regard the construction of the noise barrier as a negative visual intrusion. Although the 12-foot-tall wall would limit background views, the noise barrier would block large portions of the sky and be perceived as an imposing vertical structure. Such a feature would detract from the existing visual character of the site and its surroundings, until operations ceased and the noise barrier were removed. Impacts on these residents are considered adverse because residents would experience a notable change in the visual character of available views during construction of the project. Mitigation Measure (MM) AES-3a would reduce these impacts but not to a less than significant level. The significant and unavoidable aesthetic impacts would be

disproportionately high and adverse on minority and low-income populations living in the JWPCP East shaft site study area.

Cultural Resources. Excavation at the JWPCP East shaft site has the potential to encounter significant buried paleontological resources within the Lakewood Formation. MM CUL-3 would be implemented but would not completely prevent the potential destruction of unknown significant paleontological resources during construction, and impacts would remain significant. However, these impacts would occur subsurface on paleontological resources. Because the impacts on paleontological resources would not affect human populations, this would not constitute a disproportionately high and adverse effect on minority or low-income populations. Environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – TraPac

The affected community for the TraPac shaft site is considered to be the population residing within the TraPac shaft site study area. Based on a review of the population and income characteristics of the study area, there is a presence of minority populations (see Table 15-7) with 86.6 percent of the population identifying their ethnicity as Hispanic or Latino and 68.1 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of the study area (\$8,087) is lower than that of the county, and the proportion of population below poverty thresholds (41.2 percent) in the study area is much higher in comparison to the county (see Table 15-6 and Table 15-10). Thus, the study area has a greater presence of minority and low-income populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts at the TraPac shaft site would be mitigated; however, construction would result in significant and unavoidable impacts on cultural resources. These impacts are further evaluated to determine if they would be disproportionately borne by low-income and minority populations.

Cultural Resources. Excavation at the TraPac shaft site has the potential to encounter significant buried paleontological resources within the Lakewood Formation. MM CUL-3 would be implemented but would not completely prevent the potential destruction of unknown significant paleontological resources during construction, and impacts would remain significant. However, these impacts would occur subsurface on paleontological resources. Because the impacts on paleontological resources would not affect human populations, this would not constitute a disproportionately high and adverse effect on minority or low-income populations. Environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Sites – LAXT and Southwest Marine

The affected community for the LAXT and Southwest Marine shaft sites is considered to be the population residing within the LAXT and Southwest Marine shaft sites study area. Based on a review of the population and income characteristics of the study area, there is a presence of minority populations (see Table 15-7) with 37.9 percent of the population identifying their ethnicity as Hispanic or Latino and 54.1 percent of the population identifying themselves as belonging to a race other than White or

European-American. In terms of low-income population, the per capita income of the study area (\$7,639) is lower than that of the county, and the proportion of population below poverty thresholds (31.0 percent) in the study area is much higher in comparison to the county (see Table 15-6 and Table 15-10). Thus, the study area has a greater presence of minority and low-income populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts for the LAXT and Southwest Marine shaft sites would be mitigated; however, construction would result in significant and unavoidable impacts on cultural resources. These impacts are further evaluated to determine if they would be disproportionately borne by low-income and minority populations.

Cultural Resources. Excavation at the LAXT and Southwest Marine shaft sites has the potential to encounter significant buried paleontological resources within the Lakewood Formation. MM CUL-3 would be implemented but would not completely prevent the potential destruction of unknown significant paleontological resources during construction, and impacts would remain significant. However, these impacts would occur subsurface on paleontological resources. Because the impacts on paleontological resources would not affect human populations, this would not constitute a disproportionately high and adverse effect on minority or low-income populations. Environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Riser/Diffuser Area – Existing Ocean Outfalls

Aesthetics was the only resource area that would result in a significant and unavoidable impact associated with the existing ocean outfalls. The study area that was identified for the Royal Palms shaft site, which is evaluated under Alternative 4, consists of the population within the viewshed of the existing ocean outfalls. Consequently, the Royal Palms shaft site study area is also applicable to the evaluation of impacts on minority and low-income populations due to activities on the existing ocean outfalls.

Based on a review of the population and income characteristics of the Royal Palms shaft site study area, there is a limited presence of minority populations (see Table 15-7) with 12.5 percent of the population identifying their ethnicity as Hispanic or Latino and 14.9 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of Royal Palms shaft site (\$35,056) is much higher than that of the county, and the proportion of population below poverty thresholds (4.0 percent) in the study area is much lower in comparison to the county (see Table 15-6 and Table 15-10). Thus, the study area does not have a greater presence of minority and low-income population in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts for the existing ocean outfalls would be mitigated; however, construction would result in significant and unavoidable impacts on aesthetic resources (see Table 15-12). Because of the limited minority and low-income populations in the study area, any impacts that would be significant and unavoidable would not be disproportionately higher for

minority and low-income populations. Therefore, environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

NEPA Impact Determination

Construction at the JWPCP East shaft site for Alternative 1 (Project) would result in environmental impacts that are disproportionately high and adverse on minority and low-income populations. Impacts under NEPA would be significant before mitigation with respect to the No-Federal-Action Alternative (see Section 3.4.1.6).

Mitigation

MM AES-3a. Implement visual measures to improve the aesthetic quality of the noise barrier to ensure the design blends with the surrounding environment. A mural or similar aesthetic treatment will be applied to the sections of the noise barrier prominently visible to nearby residents and/or recreationists. Appropriate paint type and surfacing materials will be selected to ensure durability of the painted or treated surfaces until the barrier is removed. Barriers will have low-sheen and non-reflective surface materials to reduce the potential for glare. The paint color or aesthetic treatment will be maintained and any graffiti will be removed in a timely manner. During the final design process, the input of residents and/or recreationists that will be affected by the placement of the noise barriers will be accepted. Their comments will be evaluated for inclusion in the design to ensure the final treatment meets expectations to the greatest extent feasible.

Residual Impacts

Although MM AES-3a would reduce impacts by improving visual quality of the noise barrier at the JWPCP East shaft site, visual effects associated with the presence of the noise barrier and crane would remain significant during construction. While impacts would affect all individuals within the viewshed, a disproportionately high number of minority and low-income populations would be adversely affected. Residual impacts would be significant and unavoidable.

Impact SOC-4. Would Alternative 1 (Project) cause a substantial change in local employment or the labor force?

Tunnel Alignment – Wilmington to San Pedro Shelf (Onshore)

Construction

CEQA Analysis

The construction of the onshore portion of the Wilmington to SP Shelf tunnel alignment would generate about 320 construction jobs¹ (see Table 18-13). These construction jobs would further result in 640 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). However, construction of the tunnel is expected to take place over 6.5 years, through 2022. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw.

¹ Number of construction workers was calculated using the assumptions provided in Table 18-13. It was assumed that half of the construction workers on the TraPac shaft site and the Southwest Marine shaft site are working on onshore tunneling and the other half are working on offshore tunneling.

Construction of the onshore tunnel along with the construction of the riser and diffuser would also require specialized construction workers nationally and internationally to relocate to the JOS service area. There would likely be fewer than 100 of these highly specialized workers present during the entire construction period of the project for the various project elements. Direct, indirect, and specialized workers comprise only 0.022 percent of the county's projected employment for 2020 by SCAG. The relocation of these 100 workers may result in the addition of 298 people in the county through 2021.² This number comprises only 0.003 percent of the county's projected population for 2020 by SCAG. Thus, the onshore tunnel construction would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Tunnel Alignment – Wilmington to San Pedro Shelf (Offshore)

Construction

CEQA Analysis

The construction of the offshore portion of the Wilmington to SP Shelf tunnel alignment would generate about 200 construction jobs³ (see Table 18-13). These construction jobs would further result in 400 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). However, construction of the tunnel is expected to take place over 6.5 years, through 2022. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Construction of the offshore tunnel along with the construction of the riser and diffuser would require specialized construction workers nationally and internationally to relocate to the JOS service area. There would likely be fewer than 100 of these highly specialized workers present during the entire construction period of the project for the various project elements. Direct, indirect, and specialized workers comprise only 0.015 percent of the county's projected employment for 2020 by SCAG. The relocation of these 100 workers may result in the addition of 298 people in the county through 2021⁴. This number comprises only 0.003 percent of the county's projected population for 2020 by SCAG. Thus, the offshore tunnel construction would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

² Assuming average household size of 2.98 for county of Los Angeles in U.S. Census 2000 (see Table 15-4).

³ Number of construction workers was calculated using the assumptions provided in Table 18-13. It was assumed that half of the construction workers on the TraPac shaft site and the Southwest Marine shaft site are working on onshore tunneling and the other half are working on offshore tunneling.

⁴ Assuming average household size of 2.98 for county of Los Angeles in U.S. Census 2000 (see Table 15-4).

Shaft Site – JWPCP East

Construction

CEQA Analysis

The construction at the JWPCP East shaft site would generate about 20 construction jobs (see Table 18-13). These construction jobs would further result in 40 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). Construction of the shaft itself would last just 10 to 12 months and another 2 to 5 months to demobilize the site after tunnel construction; however, construction and staging activities related to construction of the tunnel would last from 4 to 8 years at the shaft site. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Thus, construction at the JWPCP East shaft site would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – TraPac

Construction

CEQA Analysis

The construction at the TraPac shaft site would generate about 20 construction jobs (see Table 18-13). These construction jobs would further result in 40 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis.) Construction of the shaft itself would last just 10 to 11 months and another 2 to 5 months to demobilize the site after tunnel construction; however, construction and staging activities related to construction of the tunnel would last from 4 to 8 years at the shaft site. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Thus, construction at the TraPac shaft site would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – LAXT

Construction

CEQA Analysis

The construction at the LAXT shaft site would generate about 20 construction jobs (see Table 18-13). These construction jobs would further result in 40 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). Construction of the shaft itself would

last just 12 to 15 months and another 2 to 5 months to demobilize the site after tunnel construction; however, construction and staging activities related to construction of the tunnel would last from 4 to 8 years at the shaft site. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Thus, construction at the LAXT shaft site would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – Southwest Marine

Construction

CEQA Analysis

The construction at the Southwest Marine shaft site would generate about 20 construction jobs (see Table 18-13). These construction jobs would further result in 40 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). Construction of the shaft itself would last just 10 to 11 months and another 2 to 5 months to demobilize the site after tunnel construction; however, construction and staging activities related to construction of the tunnel would last from 4 to 8 years at the shaft site. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Thus, construction at the Southwest Marine shaft site would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Riser/Diffuser Area – San Pedro Shelf

Construction

CEQA Analysis

The construction of the riser and diffuser on the SP Shelf would generate about 15 construction jobs (see Table 18-13). These construction jobs would further result in 30 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). Construction of the riser would last 24 months and another 6 to 12 months to construct the diffuser. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Construction of the riser and diffuser along with tunnel construction would require specialized construction workers nationally and internationally to relocate to the JOS service area. There would likely be fewer than 100 of these highly specialized workers present during the entire construction period of the project for the various project elements. Direct, indirect, and specialized workers comprise only 0.003 percent of the county's projected

employment for 2020 by SCAG. The relocation of these 100 workers may result in an addition of 298 people in the county through 2021⁵. This number comprises only 0.003 percent of the county's projected population for 2020 by SCAG. Thus, construction of the riser and diffuser on the SP Shelf would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Riser/Diffuser Area – Existing Ocean Outfalls

Construction

CEQA Analysis

The rehabilitation of the existing ocean outfalls would generate about 10 construction jobs (see Table 18-13). These construction jobs would further result in 20 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). All of the construction work including mobilization, construction, and demobilization would take approximately 9 months. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Construction on the existing ocean outfalls along with tunnel construction would require specialized construction workers nationally and internationally to relocate to the JOS service area. There would likely be fewer than 100 of these highly specialized workers present during the entire construction period of the project for the various project elements. Direct, indirect, and specialized workers comprise only 0.003 percent of the county's projected employment for 2020 by SCAG. The relocation of these 100 workers may result in the addition of 298 people in the county through 2021.⁶ This number comprises only 0.003 percent of the county's projected population for 2020 by SCAG. Thus, construction on the existing ocean outfalls would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

CEQA Impact Determination

Construction of Alternative 1 (Project) would not cause a substantial change in local employment or the labor force. Impacts under CEQA would be less than significant.

Mitigation

No mitigation is required.

Residual Impacts

Impacts would be less than significant.

⁵ Assuming average household size of 2.98 for county of Los Angeles in U.S. Census 2000 (see Table 15-4).

⁶ Assuming average household size of 2.98 for county of Los Angeles in U.S. Census 2000 (see Table 15-4).

NEPA Impact Determination

Construction of Alternative 1 (Project) would not cause a substantial change in local employment or the labor force. 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.

15.4.3.3 Impact Summary – Alternative 1

As determined in the Preliminary Screening Analysis, all program elements would result in no impacts or less than significant impacts on employment and housing. Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis. Therefore, the program is not evaluated in this EIR/EIS. Impacts on employment, housing, socioeconomics, and environmental justice analyzed in this EIR/EIS for Alternative 1 (Project) are summarized in Table 15-13. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 15-13. Impact Summary – Alternative 1 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact SOC-3. Would Alternative 1 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low income populations?				
Tunnel Alignment				
Wilmington to SP Shelf (Onshore)	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction	N/A Indirect	N/A No mitigation is required.	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction
Shaft Site				
JWPCP East	CEQA N/A During Construction NEPA Significant Impact During Construction	N/A Indirect	N/A MM AES-3a. Implement visual measures to improve the aesthetic quality of the noise barrier to ensure the design blends with the surrounding environment. A mural or similar aesthetic treatment will be applied to the sections of the noise barrier prominently visible to nearby residents and/or recreationists. Appropriate paint type and surfacing materials will be selected to ensure durability of the painted or treated surfaces until the barrier is removed. Barriers will have low-sheen and non-reflective surface materials to reduce the potential for glare. The paint color or aesthetic treatment will be maintained and any graffiti will be removed in a timely	CEQA N/A During Construction NEPA Significant and Unavoidable Impact During Construction

Table 15-13 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
			manner. During the final design process, the input of residents and/or recreationists that will be affected by the placement of the noise barriers will be accepted. Their comments will be evaluated for inclusion in the design to ensure the final treatment meets expectations to the greatest extent feasible.	
TraPac	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
LAXT	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Southwest Marine	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Impact SOC-4. Would Alternative 1 (Project) cause a substantial change in local employment or the labor force?				
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
Wilmington to SP Shelf (Offshore)	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction

Table 15-13 (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
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
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
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
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
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

15.4.4 Alternative 2

15.4.4.1 Program

Alternative 2 (Program) is the same as Alternative 1 (Program); program elements would result in no impacts or less than significant impacts on employment and housing. A detailed discussion on the determinations can be found in the Preliminary Screening Analysis (Appendix 1-A). Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis.

15.4.4.2 Project

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

Impact SOC-4. Would Alternative 2 (Project) cause a substantial change in local employment or the labor force?

Tunnel Alignment – Wilmington to Palos Verdes Shelf (Offshore)

Construction

CEQA Analysis

The construction jobs and indirect jobs generated for the construction of the Wilmington to PV Shelf (offshore) tunnel alignment would be the same as for the Wilmington to SP Shelf (offshore) tunnel alignment, as discussed under Alternative 1. The offshore tunnel construction is not anticipated to result in changes in local employment or the labor force. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Riser/Diffuser Area – Palos Verdes Shelf

Construction

CEQA Analysis

The construction jobs and indirect jobs generated for the construction of the riser and diffuser on the PV Shelf would be the same as for the riser and diffuser on the SP Shelf, as discussed under Alternative 1. The construction of the riser and diffuser on the PV Shelf is not anticipated to result in changes in local employment or the labor force. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

CEQA Impact Determination

Construction of Alternative 2 (Project) would not cause a substantial change in local employment or the labor force. 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 (Project) would not cause a substantial change in local employment or the labor force. 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.

15.4.4.3 Impact Summary – Alternative 2

As determined in the Preliminary Screening Analysis, all program elements would result in no impacts or less than significant impacts on employment and housing. Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis. Therefore, the program is not evaluated in this EIR/EIS. Impacts on employment, housing, socioeconomics, and environmental justice analyzed in this EIR/EIS for Alternative 2 (Project) are summarized in Table 15-14. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 15-14. Impact Summary – Alternative 2 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact SOC-3. Would Alternative 2 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low income populations?				
Tunnel Alignment				
Wilmington to PV Shelf (Onshore)	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction	N/A Indirect	N/A No mitigation is required.	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction

Table 15-14 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Shaft Site				
JWPCP East	CEQA N/A During Construction NEPA Significant Impact During Construction	N/A Indirect	N/A MM AES-3a. Implement visual measures to improve the aesthetic quality of the noise barrier to ensure the design blends with the surrounding environment. A mural or similar aesthetic treatment will be applied to the sections of the noise barrier prominently visible to nearby residents and/or recreationists. Appropriate paint type and surfacing materials will be selected to ensure durability of the painted or treated surfaces until the barrier is removed. Barriers will have low-sheen and non-reflective surface materials to reduce the potential for glare. The paint color or aesthetic treatment will be maintained and any graffiti will be removed in a timely manner. During the final design process, the input of residents and/or recreationists that will be affected by the placement of the noise barriers will be accepted. Their comments will be evaluated for inclusion in the design to ensure the final treatment meets expectations to the greatest extent feasible.	CEQA N/A During Construction NEPA Significant and Unavoidable Impact During Construction
TraPac	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction	N/A Indirect	N/A No mitigation is required.	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction
LAXT	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction	N/A Indirect	N/A No mitigation is required.	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction
Southwest Marine	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction	N/A Indirect	N/A No mitigation is required.	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction	N/A Direct	N/A No mitigation is required.	CEQA N/A During Construction NEPA Less Than Significant Impact During Construction

Table 15-14 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact SOC-4. Would Alternative 2 (Project) cause a substantial change in local employment or the labor force?				
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
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
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
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
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
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

Table 15-14 (Continued)

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

15.4.5 Alternative 3

15.4.5.1 Program

Alternative 3 (Program) is the same as Alternative 1 (Program); program elements would result in no impacts or less than significant impacts on employment and housing. A detailed discussion on the determinations can be found in the Preliminary Screening Analysis (Appendix 1-A). Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis.

15.4.5.2 Project

The impacts for the riser and diffuser area on the PV Shelf for Alternative 3 (Project) would be the same as for Alternative 2 (Project). The impacts for the existing ocean outfalls would be the same as for Alternative 1 (Project). Note that Impact SOC-3 analyzes disproportionately high and adverse impacts on minority and low-income populations as required under NEPA; therefore, there is no CEQA analysis provided under Impact SOC-3.

Impact SOC-3. Would Alternative 3 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low-income populations?

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

The affected community for the Figueroa/Gaffey to PV Shelf onshore tunnel alignment is considered to be the population residing within the Figueroa/Gaffey to PV Shelf tunnel alignment study area. Based on a review of the population and income characteristics of the study area, there is a presence of minority populations (see Table 15-7) with 47.0 percent of the population identifying their ethnicity as Hispanic or Latino and 42.0 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of the study area (\$20,356) is similar to the county, and the proportion of population below poverty thresholds

(17.5 percent) is slightly lower in the study area when compared to the county (see Table 15-6 and Table 15-10). Thus, the study area has a greater presence of minority populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts for the Figueroa/Gaffey to PV Shelf onshore tunnel would be mitigated; however, construction would result in significant and unavoidable impacts on cultural resources. These impacts are further evaluated to determine if they would be disproportionately borne by minority populations.

Cultural Resources. The construction of the Figueroa/Gaffey to PV Shelf onshore tunnel may result in impacts associated with unknown buried paleontological resources that would be significant and could not be mitigated. However, these impacts would occur subsurface on paleontological resources. Because the impacts on paleontological resources would not affect human populations, this would not constitute a disproportionately high and adverse effect on minority populations. Environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – JWPCP West

The affected community for the JWPCP West shaft site is considered to be the population residing within the JWPCP East and JWPCP West shaft sites study area. Based on a review of the population and income characteristics of the study area, there is a presence of minority populations (see Table 15-7) with 34.7 percent of the population identifying their ethnicity as Hispanic or Latino and 72.7 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of the study area (\$15,319) is lower than that of the county, and the proportion of population below poverty thresholds (16.0 percent) in the JWPCP East and JWPCP West shaft sites study area is similar to the county (see Table 15-6 and Table 15-10). Thus, the study area has a greater presence of minority and low-income populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts at the JWPCP West shaft site would be mitigated; however, construction would result in significant and unavoidable impacts on cultural resources. These impacts are further evaluated to determine if they would be disproportionately borne by low-income and minority populations.

Cultural Resources. Excavation at the JWPCP West shaft site has the potential to encounter significant buried paleontological resources within the Lakewood Formation. MM CUL-3 would be implemented but would not completely prevent the potential destruction of unknown significant paleontological resources during construction, and impacts would remain significant. However, these impacts would occur subsurface on paleontological resources. Because the impacts on paleontological resources would not affect human populations, this impact would not constitute a disproportionately high and adverse effect on minority or low-income populations. Environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – Angels Gate

The affected community for the Angels Gate shaft site is considered to be the population residing within the Angels Gate shaft site study area. Based on a review of the population and income characteristics of the study area, there is a limited presence of minority populations (see Table 15-7) with only 17.5 percent of the population identifying their ethnicity as Hispanic or Latino and only 20.2 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of the study area (\$32,307) is much higher than that of the county, and the proportion of population below poverty thresholds (7.1 percent) in Angels Gate shaft site study area is much lower in comparison to the county (see Table 15-6 and Table 15-10). Thus, the study area does not have a greater presence of minority and low-income populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts at the Angels Gate shaft site would be mitigated; however, construction would result in significant and unavoidable impacts on aesthetics and cultural resources (see Table 15-12). Because of the limited minority and low-income populations in the study area, any impacts that would be significant and unavoidable would not be disproportionately higher for minority and low-income populations. Therefore, environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

NEPA Impact Determination

Construction and operation of Alternative 3 (Project) would not result in environmental impacts that are disproportionately high and adverse on minority and low-income populations. 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 SOC-4. Would Alternative 3 (Project) cause a substantial change in local employment or the labor force?**Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Onshore)****Construction****CEQA Analysis**

The construction of the onshore portion of the Figueroa/Gaffey to PV Shelf tunnel alignment would generate about 160 construction jobs⁷ (see Table 18-23). These construction jobs would further result in 320 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). However, construction of the tunnel is expected to take place over 5 years. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Construction of the onshore tunnel along with the construction of riser and diffuser would also require specialized construction workers nationally and internationally to relocate to the JOS service area. There would likely be fewer than 100 of these highly specialized workers present during the entire construction period of the project for the various project elements. Direct, indirect, and specialized workers comprise only 0.015 percent of the county's projected employment for 2020 by SCAG. The relocation of these 100 workers may result in the addition of 298 people in the county through 2021⁸. This number comprises only 0.003 percent of the county's projected population for 2020 by SCAG. Thus, the onshore tunnel construction would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Tunnel Alignment – Figueroa/Gaffey to Palos Verdes Shelf (Offshore)**Construction****CEQA Analysis**

The construction of the offshore portion of the Figueroa/Gaffey to PV Shelf tunnel alignment would generate about 160 construction jobs⁹ (see Table 18-23). These construction jobs would further result in 320 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). However, construction of the tunnel is expected to take place over 5 years. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Construction of the

⁷ Number of construction workers was calculated using the assumptions provided in Table 18-23. It was assumed that half of the construction workers on the Angels Gate shaft site are working on onshore tunneling and the other half are working on offshore tunneling.

⁸ Assuming average household size of 2.98 for county of Los Angeles in U.S. Census 2000 (see Table 15-4).

⁹ Number of construction workers was calculated using the assumptions provided in Table 18-23. It was assumed that half of the construction workers on the Angels Gate shaft site are working on onshore tunneling and the other half are working on offshore tunneling.

offshore tunnel along with the construction of the riser and diffuser would require specialized construction workers nationally and internationally to relocate to the JOS service area. There would likely be fewer than 100 of these highly specialized workers present during the entire construction period of the project for the various project elements. Direct, indirect, and specialized workers comprise only 0.015 percent of the county's projected employment for 2020 by SCAG. The relocation of these 100 workers may result in an addition of 298 people in the county through 2021¹⁰. This number comprises only 0.003 percent of the county's projected population for 2020 by SCAG. Thus, the offshore tunnel construction would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – JWPCP West

Construction

CEQA Analysis

The construction at the JWPCP West shaft site would generate about 20 construction jobs (see Table 18-23). These construction jobs would further result in 40 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). Construction of the shaft itself would last just 10 to 12 months and another 2 to 5 months to demobilize the site after tunnel construction; however, construction and staging activities related to construction of the tunnel would last from 4 to 6.5 years at the shaft site. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Thus, construction at the JWPCP West shaft site would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – Angels Gate

Construction

CEQA Analysis

The construction at the Angels Gate shaft site would generate about 20 construction jobs (see Table 18-23). These construction jobs would further result in 40 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). Construction of the shaft itself would last just 8 to 9 months and another 2 to 5 months to demobilize the site after tunnel construction; however, construction and staging activities related to construction of the tunnel would last from 4 to 6.5 years at the shaft site. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor

¹⁰ Assuming average household size of 2.98 for county of Los Angeles in U.S. Census 2000 (see Table 15-4).

(5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Thus, construction at the Angels Gate shaft site would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

CEQA Impact Determination

Construction of Alternative 3 (Project) would not cause a substantial change in local employment or the labor force. 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 (Project) would not cause a substantial change in local employment or the labor force. 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.

15.4.5.3 Impact Summary – Alternative 3

As determined in the Preliminary Screening Analysis, all program elements would result in no impacts or less than significant impacts on employment and housing. Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis. Therefore, the program is not evaluated in this EIR/EIS. Impacts on employment, housing, socioeconomics, and environmental justice analyzed in this EIR/EIS for Alternative 3 (Project) are summarized in Table 15-15. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 15-15. Impact Summary – Alternative 3 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact SOC-3. Would Alternative 3 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low-income populations?				
Tunnel Alignment				
Figueroa/ Gaffey to PV Shelf (Onshore)	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Shaft Site				
JWPCP West	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Angels Gate	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Impact SOC-4. Would Alternative 3 (Project) cause a substantial change in local employment or the labor force?				
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
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

Table 15-15 (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
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
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
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

15.4.6 Alternative 4 – Recommended Alternative

15.4.6.1 Program

Alternative 4 (Program) is the same as Alternative 1 (Program); program elements would result in no impacts or less than significant impacts on employment and housing. A detailed discussion on the determinations can be found in the Preliminary Screening Analysis (Appendix 1-A). Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis.

15.4.6.2 Project

The impacts for the JWPCP West shaft site for Alternative 4 (Project) would be the same as for Alternative 3 (Project), except tunnel construction would occur over a period of 4 years instead of 5 years. The construction impacts for the rehabilitation of the existing ocean outfalls for Alternative 4 (Project) would be the same as for Alternative 1 (Project). Note that Impact SOC-3 analyzes disproportionately

high and adverse impacts on minority and low-income populations as required under NEPA; therefore, there is no CEQA analysis provided under Impact SOC-3.

Impact SOC-3. Would Alternative 4 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low-income populations?

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

The affected community for the Figueroa/Western to Royal Palms onshore tunnel alignment is considered to be the population residing within the Figueroa/Western to Royal Palms tunnel alignment study area. Based on a review of the population and income characteristics of the study area, there is a limited presence of minority populations (see Table 15-7) with 33.7 percent of population identifying their ethnicity as Hispanic or Latino and 31.4 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of the study area (\$26,537) is higher than that of the county, and the proportion of population below poverty thresholds (10.4 percent) is lower in the study area when compared to the county (see Table 15-6 and Table 15-10). Thus, the study area does not have a greater presence of minority or low-income populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts for the Figueroa/Western to Royal Palms onshore tunnel would be mitigated; however, construction would result in significant and unavoidable impacts on cultural resources. Because of the limited minority and low-income populations in the study area, any impacts that would be significant and unavoidable would not be disproportionately higher for minority and low-income populations. Therefore, environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

Shaft Site – Royal Palms

The affected community for the Royal Palms shaft site is considered to be the population residing within the Royal Palms shaft site study area. Based on a review of the population and income characteristics in the study area, there is a limited presence of minority populations (see Table 15-7) with 12.5 percent of population identifying their ethnicity as Hispanic or Latino and only 14.9 percent of the population identifying themselves as belonging to a race other than White or European-American. In terms of low-income population, the per capita income of the study area (\$35,056) is much higher than that of the county, and the proportion of population below poverty thresholds (4.0 percent) in the study area is much lower in comparison to the county (see Table 15-6 and Table 15-10). Thus, the study area does not have a greater presence of minority or low-income populations in comparison to the reference community.

Construction

NEPA Analysis

The EIR/EIS determined that most of the construction impacts at the Royal Palms shaft site would be mitigated; however, construction would result in significant and unavoidable impacts on aesthetics and cultural resources (see Table 15-12). Because of the limited minority and low-income populations in the

study area, any impacts that would be significant and unavoidable would not be disproportionately higher for minority and low-income populations. Therefore, environmental justice impacts would be less than significant.

Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

NEPA Impact Determination

Construction and operation of Alternative 4 (Project) would not result in environmental impacts that are disproportionately high and adverse on minority and low-income populations. 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 SOC-4. Would Alternative 4 (Project) cause a substantial change in local employment or the labor force?

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

Construction

CEQA Analysis

The construction of the Figueroa/Western to Royal Palms onshore tunnel would generate about 120 construction jobs¹¹ (see Table 18-30). These construction jobs would further result in 240 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). However, construction of the tunnel is expected to take place over 4 years. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Construction of the tunnel alignment would also require specialized construction workers nationally and internationally to relocate to the JOS service area. There would likely be fewer than 100 of these highly specialized present during the entire construction period of the project for the various project elements. Direct, indirect, and specialized workers comprise only 0.001 percent of the county's projected employment for 2020 by SCAG. The relocation of these 100 workers may result in an addition of 298 people in the county through 2021¹². This number comprises only 0.003 percent of the county's projected population for 2020 by SCAG. Thus, the onshore tunnel construction would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

¹¹ Number of construction workers was calculated using the assumptions provided in Table 18-30.

¹² Assuming average household size of 2.98 for county of Los Angeles in U.S. Census 2000 (see Table 15-4).

Shaft Site – Royal Palms

Construction

CEQA Analysis

The construction at the Royal Palms shaft site would generate about 30 construction jobs (see Table 18-30). These construction jobs would further result in 60 indirect jobs (2 jobs for every construction job based on RIMS II model output of U.S. Bureau of Economic Analysis). Construction of the shaft itself would last just 6 to 9 months and another 2 to 5 months to demobilize the site after tunnel construction; however, construction and staging activities related to construction of the tunnel would last from 4 to 5 years at the shaft site. The number of construction workers employed and working on site would vary over the course of the construction period. The county has a large pool of construction labor (5.1 percent of employed people were in the construction industry in 2000; see Table 15-5) from which to draw. Thus, construction at the Royal Palms shaft site would not result in a substantial change in the local labor force and employment. Impacts would be less than significant.

NEPA Analysis

Analysis under NEPA would be the same as described for the CEQA analysis. Environmental justice impacts would be considered indirect impacts with respect to the Corps' NEPA scope of analysis described in Section 3.5.

CEQA Impact Determination

Construction of Alternative 4 (Project) would not cause a substantial change in local employment or the labor force. 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 (Project) would not cause a substantial change in local employment or the labor force. 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.

15.4.6.3 Impact Summary – Alternative 4

As determined in the Preliminary Screening Analysis, all program elements would result in no impacts or less than significant impacts on employment and housing. Additionally, an evaluation of socioeconomics and environmental justice is not required for the program, which is outside the NEPA scope of analysis. Therefore, the program is not evaluated in this EIR/EIS. Impacts on employment, housing, socioeconomics, and environmental justice analyzed in this EIR/EIS for Alternative 4 (Project) are

summarized in Table 15-16. The proposed mitigation, where feasible, and the significance of the impact before and following mitigation are also listed in the table.

Table 15-16. Impact Summary – Alternative 4 (Project)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Impact SOC-3. Would Alternative 4 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low-income populations?				
Tunnel Alignment				
Figueroa/ Western to Royal Palms (Onshore)	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Shaft Site				
JWPCP West	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Royal Palms	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Riser/Diffuser Area				
Existing Ocean Outfalls	CEQA N/A During Construction	N/A	N/A	CEQA N/A During Construction
	NEPA Less Than Significant Impact During Construction	Direct	No mitigation is required.	NEPA Less Than Significant Impact During Construction
Impact SOC-4. Would Alternative 4 (Project) cause a substantial change in local employment or the labor force?				
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
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

Table 15-16 (Continued)

Project Element	Impact Determination Before Mitigation	NEPA Direct or Indirect	Mitigation	Residual Impact After Mitigation
Royal Palms	CEQA Less Than Significant Impact During Construction	N/A	No mitigation is required.	CEQA Less Than Significant Impact During Construction
	NEPA Less Than Significant Impact During Construction	Indirect	No mitigation is required.	NEPA Less Than Significant Impact During Construction
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

15.4.7 Alternative 5 (No-Project Alternative)

Pursuant to CEQA, an environmental impact report (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 in accordance with the JOS 2010 Master Facilities Plan (2010 Plan) (Sanitation Districts 1994), which includes all program elements proposed under the Clearwater Program, excluding process optimization at the water reclamation plants (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.

15.4.7.1 Program

Alternative 5 (Program) would consist of the implementation of the 2010 Plan. The impacts for the conveyance system, plant expansion at the San Jose Creek Water Reclamation Plant (SJCWRP), WRP effluent management, JWPCP solids processing, and JWPCP biosolids management for Alternative 5 (Program) would be the same as for Alternative 1 (Program) and would be subject to mitigation in accordance with the EIR prepared for the 2010 Plan (Jones & Stokes 1994). Program elements would result in no impacts or less than significant impacts on employment and housing. A detailed discussion on the determinations can be found in the Preliminary Screening Analysis (Appendix 1-A). Because the program is outside the NEPA scope of analysis, an evaluation of socioeconomic and environmental justice impacts is not required for Alternative 5 (Program).

15.4.7.2 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. Impacts on employment and housing would not occur under Alternative 5 (Project). Because Alternative 5 is the CEQA no-project alternative, an evaluation of socioeconomic and environmental justice impacts is not required for Alternative 5 (Project).

15.4.7.3 Impact Summary – Alternative 5

Alternative 5 would result in no impacts on employment and housing. As discussed in the Preliminary Screening Analysis, the program would result in no impacts or less than significant impacts on employment and housing; therefore, the program is not evaluated in this EIR/EIS. Additionally, there would be no significant impacts on employment and housing for Alternative 5 (Project). Because Alternative 5 is the CEQA no-project alternative, an evaluation of socioeconomic and environmental justice impacts is not required for Alternative 5.

15.4.8 Alternative 6 (No-Federal-Action Alternative)

Pursuant to NEPA, an 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 Section 3.4.1.6. 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.

15.4.8.1 Program

The program elements are outside the NEPA scope of analysis.

15.4.8.2 Project

The impacts for Alternative 6 (Project) would be the same as for Alternative 5 (Project) for employment and housing, and there would be no impacts. 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 under Alternative 6. As a consequence, there would be a greater potential for emergency discharges or sewer overflows into various water courses. Socioeconomics and environmental justice are evaluated under NEPA for greater potential for emergency discharges or sewer overflows into various water courses.

The human impacts of Alternative 6 in case of emergency discharge into the Wilmington Drain or a sewer overflow entering various water courses, such as the Dominguez Channel and the Los Angeles River, would result in temporary limitations on recreational use of the Los Angeles Harbor and neighboring beaches due to significant and unavoidable impacts on five resource areas.

- Geology, soils, and mineral resources. Mudslides, ground failure, and unstable earth conditions in unlined portions of the Wilmington Drain, Machado Lake, and the various areas along the JOS where overflows may occur would reduce recreation opportunities in receiving waters including the Los Angeles River, Los Angeles Harbor, and surrounding waters, such as Cabrillo Beach.
- Hydrology. Emergency discharge of secondary effluent would likely result in violations of total maximum daily loads (TMDL) at Los Angeles Harbor and Machado Lake, toxic pollutants violation at the Los Angeles and Long Beach Harbors, and Los Angeles County Municipal Separate Storm Sewer Systems permit violations. The emergency discharge could also affect the existing drainage pattern resulting in substantial erosion or siltation and water quality impacts on receiving waters. A sewer overflow would likely result in a violation of the JWPCP's NPDES permit, as well as TMDLs for the Wilmington Drain, the Dominguez Channel, and the Los Angeles and Long Beach Harbors.
- Marine environment. Emergency discharge of secondary effluent or a sewer overflow would be considered a violation of the JWPCP's NPDES permit and, therefore, would affect the beneficial uses of the Wilmington Drain, Dominguez Channel, and the Los Angeles River, all of which discharge into the Los Angeles Harbor and surrounding waters, such as Cabrillo Beach.
- Recreation. There would be a substantial loss or diminished quality of recreational opportunities due to impacts on water quality. Impacts could include the closure of facilities, such as Cabrillo Beach and Cabrillo Pier, resulting in loss of recreational uses such as swimming, wind surfing, and other water-based activities.
- Utilities, service systems, and energy. A discharge of secondary effluent into the Wilmington Drain or a sewer overflow would result in exceeding wastewater treatment requirements of the RWQCB and, therefore, would affect the beneficial uses of the Wilmington Drain, Dominguez Channel, and the Los Angeles River, all of which discharge into the Los Angeles Harbor and surrounding waters, such as Cabrillo Beach.

Although significant and unavoidable impacts on recreational use of the Los Angeles Harbor and neighboring beaches would occur, these are regional resources, and impacts would not be disproportionately high and adverse on minority and low-income populations. Impacts on the reference community (the Los Angeles County study area) and affected community would be same; therefore, environmental justice impacts would be less than significant.

15.4.8.3 Impact Summary – Alternative 6

The program is not analyzed under Alternative 6. As discussed in Section 15.4.8.2, there would be no impacts for Alternative 6 (Project) on employment and housing, and impacts on environmental justice would be less than significant. Therefore, there would be no significant impacts on employment, housing, socioeconomics, and environmental justice for Alternative 6.

15.4.9 Comparison of Significant Impacts and Mitigation for All Alternatives

A summary of significant impacts on employment, housing, socioeconomics, and environmental justice resulting from the construction and/or operation of program and/or project elements is provided in Table 15-17. 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 15-17. Comparison of Significant Impacts and Mitigation for Employment, Housing, Socioeconomics, and Environmental Justice

Element	Impact Before Mitigation	Mitigation Measure	Residual Impact After Mitigation
Alternative 1 (Project)			
Impact SOC-3. Would Alternative 1 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low income populations?			
Shaft Site – JWPCP East	CEQA N/A During Construction NEPA Significant Impact (Indirect) During Construction	N/A MM AES-3a. Implement visual measures to improve the aesthetic quality of the noise barrier to ensure the design blends with the surrounding environment. A mural or similar aesthetic treatment will be applied to the sections of the noise barrier prominently visible to nearby residents and/or recreationists. Appropriate paint type and surfacing materials will be selected to ensure durability of the painted or treated surfaces until the barrier is removed. Barriers will have low-sheen and non-reflective surface materials to reduce the potential for glare. The paint color or aesthetic treatment will be maintained and any graffiti will be removed in a timely manner. During the final design process, the input of residents and/or recreationists that will be affected by the placement of the noise barriers will be accepted. Their comments will be evaluated for inclusion in the design to ensure the final treatment meets expectations to the greatest extent feasible.	CEQA N/A During Construction NEPA Significant and Unavoidable Impact (Indirect) During Construction
Alternative 2 (Project)			
Impact SOC-3. Would Alternative 2 (Project) result in environmental impacts that are disproportionately high and adverse on minority and low income populations?			
Shaft Site – JWPCP East	CEQA N/A During Construction NEPA Significant Impact (Indirect) During Construction	N/A MM AES-3a	CEQA N/A During Construction NEPA Significant and Unavoidable Impact (Indirect) During Construction