Chapter 21
CUMULATIVE AND GROWTH-INDUCING IMPACTS

21.1 Introduction

This chapter presents California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) requirements for cumulative impact analysis. Specifically, it analyzes the potential for the recommended plan and its alternatives to have significant cumulative effects when combined with other past, present, and reasonably foreseeable future projects in each resource area's cumulative geographic scope. This chapter also presents the CEQA requirements for growth-inducing impacts. It analyzes the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. This includes ways in which the proposed project would remove obstacles to population growth or trigger the construction of new community services facilities that could cause significant effects (CEQA Guidelines, Section 15126.2).

Requirements related to cumulative impact analysis and a description of the related projects are discussed in Sections 21.1.1 and 21.1.3, respectively. Cumulative impacts are organized by resource topic and analyzed in Section 21.2. Requirements related to growth-inducing impact analysis are discussed in Section 21.1.2 and the analysis is presented in Section 21.3.

21.1.1 Requirements for Cumulative Impact Analysis

NEPA (40 Code of Federal Regulations [CFR] 1508.7 and 40 CFR 1508.25[a][2]) and the CEQA Guidelines (14 California Code of Regulations 15130) require a reasonable analysis of the significant cumulative impacts of a proposed project. Cumulative impacts are defined by CEQA as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines, Section 15355).

Cumulative impacts are further described as follows:

a) The individual effects may be changes resulting from a single project or a number of separate projects.

b) The cumulative impacts from several projects are the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (40 CFR 1508.7 and CEQA Guidelines, Section 15355[b]).

Furthermore, according to CEQA Guidelines Section 15130(a)(1):

> As defined in Section 15355, a *cumulative impact* consists of an impact that is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts. An EIR should not discuss impacts which do not result in part from the project evaluated in the EIR.

In addition, as stated in the CEQA Guidelines, Section 15064(i)(5):

> The mere existence of significant cumulative impacts caused by other projects alone shall not constitute substantial evidence that the proposed project's incremental effects are cumulatively considerable.

NEPA also requires analysis of cumulative impacts; 40 CFR Section 1508.7 states:

> Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

The United States (U.S.) Army Corps of Engineers (Corps), as part of its cumulative impact analysis, is required to identify:

- Areas in which the effects of the proposed action would occur
- Effects that are expected in those areas from the proposed action
- Past, present, and reasonably foreseeable future actions that have or that are expected to have impacts in the same area
- Impacts or expected impacts from these other actions
- Overall impacts that can be expected if the individual impacts are allowed to accumulate (*Fritiofson v. Alexander*, 772 F.2d 1225, 1245 [5th Cir. 1985])

Therefore, the following cumulative impact analysis focuses on whether the impacts of the recommended plan or its alternatives are cumulatively considerable within the context of impacts caused by other past, present, or reasonably foreseeable future projects. The cumulative impact scenario considers other projects proposed within the area defined for each resource that have the potential to contribute to cumulatively considerable impacts.

21.1.2 Requirements for Growth-Inducing Impact Analysis

The CEQA Guidelines require an environmental impact report (EIR) to discuss the ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. This includes ways in which the proposed project would remove obstacles to population growth or trigger the construction of new community services facilities that could cause significant effects (CEQA Guidelines, Section 15126.2). In addition, a project would directly induce growth if it would directly foster population growth or the construction of new housing in the surrounding environment (e.g., if it would remove an obstacle to growth by expanding existing infrastructure).

NEPA requires an environmental impact statement to examine the potential of the proposed project to significantly or adversely affect the environment; potential impacts could be either direct or indirect. Indirect effects (NEPA, 40 CFR 1508.8[b]) may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air, water, and other natural systems including ecosystems.

It should be noted that growth-inducing effects are not to be construed as necessarily beneficial, detrimental, or of little significance to the environment. This issue is presented to provide additional information in which this project could contribute to significant changes in the environment, beyond the direct consequences of developing the project examined in the preceding chapters of this environmental impact report/environmental impact statement (EIR/EIS). The analysis focuses on whether the project would directly or indirectly stimulate growth in the surrounding area.

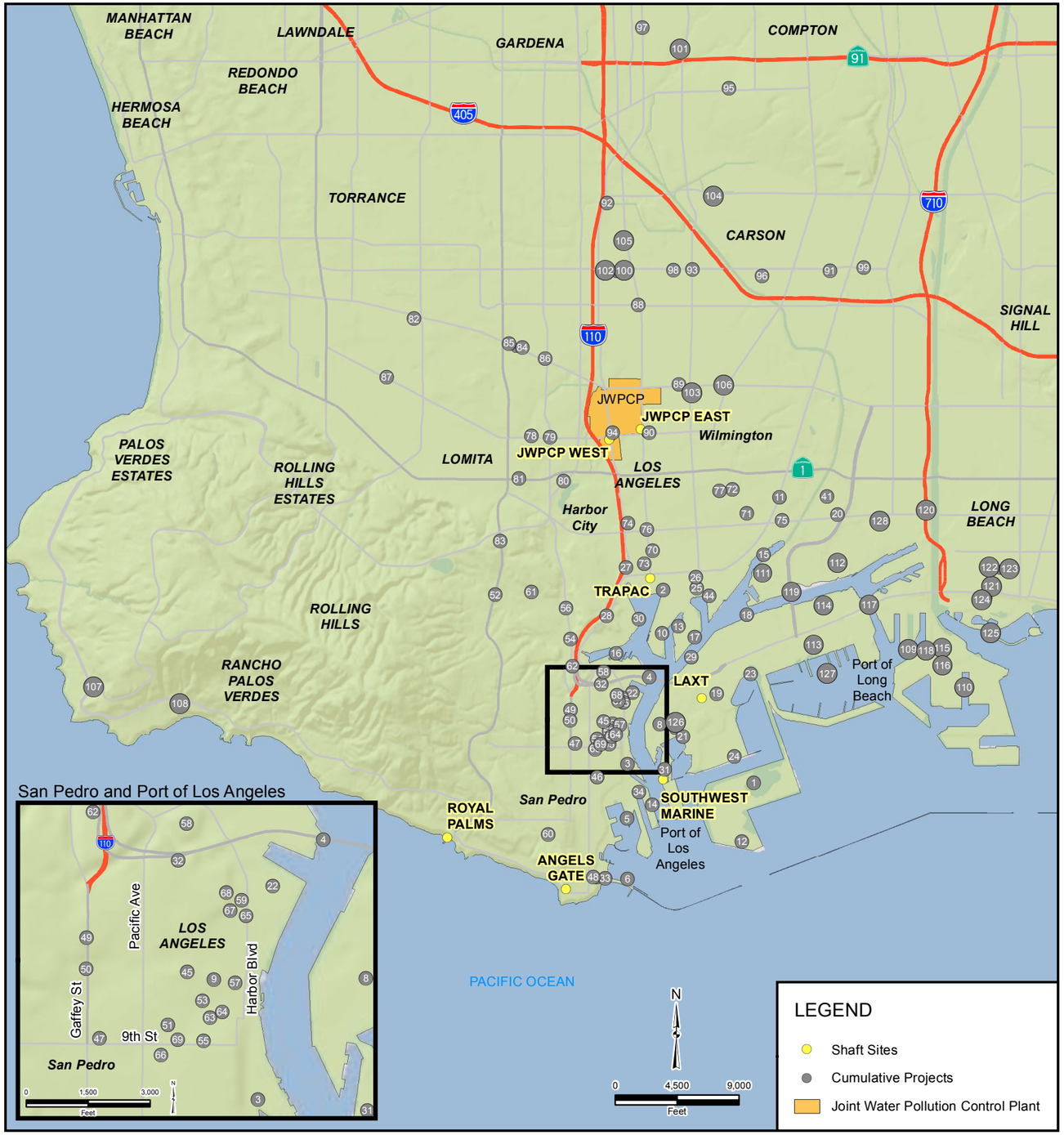
21.1.3 Cumulative and Growth-Inducing Methodology

For this EIR/EIS, related area projects with a potential to contribute to cumulative impacts were identified using one of two approaches: the list methodology or the projection methodology. A list approach relies on a list of past, present, and probable future projects producing related or cumulative impacts. These may include projects outside the lead agency's control. The projections approach relies on a summary of projections contained in adopted local, regional, or statewide plans, or related planning documents that describe or evaluate conditions that contribute to a cumulative effect. The program-level analysis relies on a projection methodology, and the project-level analysis uses a combined projection and list methodology. There are advantages and disadvantages to each approach. A list approach is usually considered more straightforward, but it can be criticized for being under inclusive. A summary of projections approach may be more comprehensive but can be problematic unless the projections in the plans are up-to-date (Gordon and Herson 2011). Depending on the resource evaluated, one method or a combination of both may best fit the needs of the analysis. For example, project-level air quality, noise, and traffic/circulation analyses use a projection or a combined list and projection approach as described herein. Cumulative analysis of air quality impacts uses projections from the South Coast Air Basin (SCAB) 2007 Air Quality Management Plan (AQMP). The traffic/circulation cumulative analysis uses annual regional growth, which is described in Chapter 18. The cumulative analysis of noise impacts relies on both the annual regional growth rates utilized for traffic (because traffic is an important contributor to noise impacts) and the list of related projects documented in Section 21.1.4. Most of the resource areas analyzed on the project level use a list of closely related projects that would be constructed in the cumulative geographic scope (which differs by resource and sometimes for impacts within a resource; cumulative regions of influence are documented in Section 21.2). The list of related projects is provided on Figure 21-1. The program analysis relies on relevant related plans for each topical area. Furthermore, as program elements become projects in their own right, they will be subject to subsequent CEQA review that will also include a cumulative impacts analysis.

For purposes of thresholds, the concept of cumulatively considerable effects is derived from the CEQA Guidelines, and this CEQA concept is adequately protective and encompassing of the NEPA concept of cumulatively significant effects. The significance criteria used for the cumulative resource analysis are the same as those analyzed in the respective resource chapter.

To address growth-inducing impacts, the potential growth-inducing effects are examined through the following considerations:

- Induction of substantial population growth in an area, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)



Port of Los Angeles Projects

1. Pier 400 Container Terminal and Transportation Corridor Project
2. Berths 136-147 Marine Terminal, West Basin
3. San Pedro Waterfront Project
4. Channel Deepening Project
5. Cabrillo Way Marina, Phase II
6. Artificial Reef, San Pedro Breakwater
7. Canners Steam Demolition
8. Berth 226-236 (Evergreen) Container Terminal Improvements Project
9. Port of Los Angeles Charter School and Port Police Headquarters, San Pedro
10. SSA Outer Harbor Fruit Facility Relocation
11. Crescent Warehouse Company Relocation
12. Plains All American (formerly Pacific Energy)
    Oil Marine Terminal, Pier 400
13. Ultramar Lease Renewal Project
14. Westway Decommissioning
15. Consolidated Slip Restoration Project
16. Berths 97-109, China Shipping Development Project
17. Berths 171-181, Pasha Marine Terminal Improvements Project
18. Berths 206-209 Interim Container Terminal Reuse Project
19. LAXT Dome and Site Demolition
20. Southern California International Gateway Project (SCIG)
21. Pan-Pacific Fisheries Cannery Buildings Demolition Project
22. San Pedro Waterfront Enhancements Project
23. Joint Container Inspection Facility
24. Berth 302-305 (APL) Container Terminal Improvements Project
25. South Wilmington Grade Separation
26. Wilmington Waterfront Master Plan (Avalon Blvd. Corridor Project)
27. "C" Street/Figueroa Street Interchange
28. Port Transportation Master Plan
29. Berths 212-224 (YTI) Container Terminal Improvements Project
30. Berths 121-131 (Yang Ming) Container Terminal Improvements Project
31. Southwest Marine Demolition Project
32. I-110 / SR 47 Connector Improvement Program
33. Inner Cabrillo Beach Water Quality Improvement Prog
34. Proposed Marina Research Area

Port of Los Angeles and/or Port of Long Beach Potential Port-Wide Operational Projects

35. Terminal Free Time*
36. Extended Terminal Gates (Pier Pass)*
37. Shuttle Train/Inland Container Yard*
38. Origin/Destination and Toll Study*
39. Virtual Container Yard*
40. Increased On-Dock Rail Usage*
41. Union Pacific Railroad ICTF Modernization Project
42. Optical Character Recognition*
43. Truck Driver Appointment System*
44. Port Police Wilmington Substation
45. Port Police New Station

Community of San Pedro Projects

46. 15th Street Elementary School
47. Pacific Corridors Redevelopment Project
48. Cabrillo Marine Aquarium Expansion
49. Gas station and mini-mart
50. Fast Food Restaurant w/drive-thru
51. Mixed use development, 407 Seventh Street
52. Condominiums, 28000 Western Ave
53. Pacific Trade Center
54. Single Family Homes (Gaffey Street)
55. Mixed-use development, 281 W 8th Street
56. Target (Gaffey Street)
57. Palos Verdes Urban Village
58. Temporary Little League Park
59. Condos, 319 N. Harbor Boulevard

Community of Wilmington Projects

60. LAUSD South Region High School #15 Private High School
61. Single Family Homes
62. Center Street Lofts - Residential Lofts and Specialty Retail
    La Salle Lofts – Condominiums
63. Ocean View Landing - Condominiums and Specialty Retail Condominiums
64. Toberman Village – Apartments
67 Harborside Terrace – Townhomes
68. Condominiums
69. E Street Cold Logistics – Warehouses
70. East Wilmington Greenbelt Community Center
    Distribution center and warehouse
72. Dana Strand Public Housing
73. Redevelopment Project
    Vermont Christian School Expansion
74. Retail
75. Bakery/Restaurant
76. Single Family Homes

Projects in Carson, Rancho Palos Verdes, Unincorporated Los Angeles County, and Community of Harbor City

78. 1437 Lomita Boulevard Condominiums
79. Harbor City Child Development Center
80. Kaiser Permanente South Bay Master Plan
81. Drive-through restaurant, Harbor City
82. K to 8th Private School
83. Ponte Vista
84. Warehouses, 1351 West Sepulveda Blvd
85. Sepulveda Industrial Park
86. Apartments
87. Office Building and Medical Office Building
88. Day Care Center
89. Office Building
90. Retail Self-Storage
91. Warehouse
92. Office Building Manufacturing Space
93. Carson City Center – Condominiums
94. Office Building
95. Boulevards at South Bay - Mixed Use Development
96. Mobile Home Estates
97. Automobile Dismantling Yard
98. Affordable Residential Housing - 65 units
99. Expansion of Church
100. Adult Day Care
101. Office/Warehouse/Equipment Storage
102. Sanctuary
103. Single Family Homes
104. Transit Center
105. Wholesale car auction
106. Gym
107. Animal Education Center
108. Commercial Agricultural Use

Port of Long Beach Projects

109. Middle Harbor Terminal Redevelopment
110. Piers G & J Terminal Redevelopment Project
111. Pier A West Remediation Project
112. Pier A East
113. Pier T, TTI formerly Hanjin Terminal, Phase III
114. Pier S Marine Terminal
115. Administration Building Replacement Project
116. San Pedro Bay Rail Study
117. Gerald Desmond Bridge Replacement Project
118. Chemoil Marine Terminal, Tank Installation

Alameda Corridor Transportation Authority and Caltrans Projects

119. Schuyler Heim Bridge Replacement and State Route (SR) 47 Terminal Island Expressway
120. I-710 (Long Beach Freeway) Major Corridor Study

City of Long Beach Projects

121. Renaissance Hotel Project
122. D'Orsay Hotel Project
123. City Place Development
124. The Pike at Rainbow Harbor
125. Queensway Bay Master Plan
126. Canners Steam Demolition
127. Port of Long Beach Installation Restoration Site (West Basin) Dredging Project
128. Edison Avenue Closure

*Project not shown on figure because it is not specific to a location, or the location has not been determined

FIGURE 21-1

Cumulative Projects Location Map

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

CLEARWATER Program

- Removal of obstacles to growth (e.g., the construction or extension of major infrastructure facilities that do not presently exist in the project area or through changes in existing regulations pertaining to land development).
- Expansion of requirements for one or more public services to maintain desired levels of service as a result of the project.
- Facilitation of economic effects that could result in other activities that would significantly affect the environment.
- Setting of a precedent that could encourage and facilitate other activities that could significantly affect the environment.

The growth-inducing analysis presented focuses on whether the alternatives would directly or indirectly stimulate or accommodate growth in the surrounding area.

21.1.4 Projects Considered in the Cumulative Analysis

History of Development in the Program and Project Area

This brief history of population growth and development in the program and project areas provides a context for the past, present, and future projects that are considered in this cumulative impact analysis. Southern California was inhabited by Native Americans for millennia; however, the area did not begin to develop until after settlement by Europeans. In 1781, El Pueblo de Nuestra Señora la Reina de Los Angeles de Porciunula was founded. During that time, Los Angeles began to grow and became the center of the settlements of the Spanish aristocracy. The surrounding land throughout the Los Angeles Basin was divided into Spanish and Mexican land grant ranchos. Many of the ranchos were later subdivided, and these subdivisions grew into communities that exist today.

The establishment of several industries in the Los Angeles region in the late 19th and early 20th century (most notably the oil, agriculture, and motion picture industries) has fueled the growth of the greater Los Angeles area into an extensively developed urban area (Jones & Stokes 1994:16-3). From 1870 to 1900, there was a period of intensive urbanization in the Los Angeles area. The area experienced unprecedented regional growth in industry, residential development, and commerce. The first railroad line connecting Los Angeles to the nation-wide railway system was the Southern Pacific, extending south from San Francisco. The Southern Pacific began regular train service in Los Angeles in January 1874. The Los Angeles and San Pedro Railroad operated between Los Angeles and Wilmington and represented the first reliable means of moving cargo from ships coming into San Pedro.

Southern California also experienced a population explosion during the 1880s, which increased the importance of the Port at San Pedro and also resulted in a local population eruption in the Wilmington and San Pedro area (Silka 1993:35). With improved rail transportation, thousands of people immigrated to Los Angeles, and the increased population brought a need for more construction and living supplies, much of which came from ships destined for the San Pedro and Wilmington areas. The demand for lumber, coal, and other goods from the Los Angeles Basin spurred an increase in merchant vessels in San Pedro Bay. This, in turn, created a demand for dock workers, carpenters, ship fitters, laborers, merchant mariners, railroad workers, and men working supporting businesses such as shipyards. With the completion of a sea-wall, after 1871, and the development of the railroad, two-way flow of passengers and merchandise was stimulated. In 1899, construction began on the 2-mile breakwater in San Pedro Bay.

The rapid population growth was due to the development and industrialization of the period. Following the first arrival of the Southern Pacific, connecting the city to the nation-wide rail system in 1876,

population increased 12-fold, reaching 12,000 people. In 1890, the city had grown to 50,100. In the following decade, the population increased to 102,500 (Swope 1997:4–5).

After 1900, Los Angeles saw continued steady growth of population and industry. The advent of the automobile began nation-wide cultural changes that prompted increased movement of goods and people. New industries, such as oil production and refining, aircraft manufacturing, and motion pictures, also developed in Los Angeles, requiring a larger work force. The population of Los Angeles, 102,500 in 1900, more than tripled to 319,000 in 1910. This number was nearly doubled again by 1920, when the population reached 577,000 individuals. Oil was discovered on nearby Rancho San Pedro in 1920, which led to a new era of prosperity. Despite the highly speculative real estate boom in 1923 that inflated property values, especially in commercial real estate, growth peaked between 1925 and 1929. Los Angeles continued to grow, even during the Great Depression, when the population increased to 1,504,277 people. Movie-making was an industry that boomed during the Depression in the 1930s, and Los Angeles became the hub for this activity.

Today, the Sanitation Districts serve over 5 million people within the dense urban area of Los Angeles County. Development primarily consists of residential, commercial, and industrial uses. The Ports of Los Angeles and Long Beach continue to be hubs of commerce and combined are the largest port complex in the nation.

Current and Future Projects

A total of 128 present or reasonably foreseeable future projects (approved or proposed) were identified within the general vicinity of the recommended plan area that could contribute to cumulative impacts (Figure 21-1). (As discussed in Section 21.1.2 and further in the resource-specific sections, some resource analyses use a projection approach encompassing a larger cumulative geographic scope; for these resources, a larger set of past, present, and reasonably foreseeable future projects was included for analysis of cumulative impacts.)

For the purposes of this EIR/EIS, the timeframe of current or reasonably anticipated projects extends from 2008 to 2050, and the vicinity is defined as the area over which effects of the recommended plan or its alternatives could contribute to cumulative effects. The cumulative regions of influence for individual resources are documented further in each of the resource-specific subsections in Section 21.2.

21.2 Cumulative Impact Analysis by Resource

The following sections analyze the cumulative impacts identified for each resource area. The timeline for impacts on resources that have occurred in the past would date back to pre-Los Angeles Basin development (approximately 1870) condition. Present impacts would be those that have occurred since the issuance of the notice of preparation in October 2008, and future effects would be those that would take place by 2050.

21.2.1 Aesthetic Resources

21.2.1.1 Scope of Analysis

The scope of analysis for aesthetic resources primarily encompasses the project area because program elements were all deemed to have less than significant impacts or no impacts as documented in the Preliminary Screening Analysis in Appendix 1-A. Program elements, with the exception of the conveyance system, would generally occur within the existing site of the facility. The conveyance system would not have aesthetic impacts because the facilities would be located underground. For the project, the tunnel alignments would be located underground and would not be visible at ground level. The Joint Water Pollution Control Plant (JWPCP) East and JWPCP West shaft sites are primarily surrounded by industrial, residential, and commercial land uses. The visual quality of these shaft sites and surroundings is low to moderate because these areas are highly developed with industrial uses. The Angels Gate and Royal Palms shaft sites are located in a coastal environment and are surrounded by recreational and residential land uses. The visual quality of these shaft sites and surroundings is moderate to high because these areas are developed with compatible uses and have coastal views. The Trans Pacific Container Service Corporation (TraPac), Los Angeles Export Terminal (LAXT), and Southwest Marine shaft sites are located in an industrial environment. All of these locations are subject to construction activities. Construction is a common visual element in the environs of the JWPCP shaft sites because the area is more developed and industrial activities are more common. The coastal areas are more static; construction activities from maintenance of existing infrastructure and infill and redevelopment projects are more likely than large development projects. Infill and redevelopment projects help minimize visual impacts in coastal areas because they tend to be smaller in scale and compatible with existing land uses, yet do result in visual impacts to a lesser degree.

21.2.1.2 Impacts of Past, Present, and Foreseeable Future Projects

Figure 21-1 identifies 128 projects in the vicinity of the project. However, only a few are in the vicinity of shaft sites where construction activity would occur. In the Port of Los Angeles, there are a number of projects near the TraPac, LAXT, and Southwest Marine shaft sites. However, this is a heavily industrialized area where construction activities are common and would not create a cumulative visual impact due to the nature of activities at the port, which involve very tall gantry cranes, stacking of containers, transportation projects that include intermodal interchanges, and large ships coming and going at the port. Many of the projects in the vicinity of these shaft sites involve container terminal improvements, which by their nature require large construction equipment. Projects near the Angels Gate shaft site include the Cabrillo Aquarium Expansion (Project 48), the Inner Cabrillo Beach Water Quality Improvement Program (Project 33), and creation of an artificial reef at the San Pedro Breakwater (Project 6). The closest project to the Royal Palms shaft site is the construction of Los Angeles Unified School District's South Region High School (Project 60), which was determined to be sufficiently far from the shaft site and because of intervening topography would not contribute to a cumulatively considerable visual impact. Cumulative visual impacts for Alternatives 3 and 4 are related to coastal resources and the visual sensitivity in the areas of the Angels Gate and Royal Palms shaft sites.

Alternative 1 Through Alternative 4

Alternatives 1 through 4 would result in significant temporary aesthetic impacts during project construction. Impacts associated with the noise barrier that would be in place during construction at the JWPCP East, Angels Gate, and Royal Palms shaft sites (depending on alternative) would be significant and unavoidable after mitigation. Additionally, no mitigation is feasible to reduce impacts from construction on the existing ocean outfalls.

Impacts associated with the JWPCP East shaft site would be localized. The construction site would have a relatively small footprint and scale when compared to the number of cumulative projects (including single- and multi-story developments) that will occur over a much larger area. Therefore, within the context of past, present, and future projects, and in consideration to the short duration of construction, the incremental effect would not be cumulatively considerable.

The combined incremental effect on the coastal viewshed for construction of Alternative 4, including the noise barrier that would be in place during construction at the Royal Palms shaft site and construction activities on the existing ocean outfalls, would be significant after mitigation. Therefore, the contribution is cumulatively considerable and construction of Alternative 4 would result in cumulative visual impacts under CEQA and NEPA.

Once operational, project elements would not result in significant visual impacts because construction would no longer be taking place, the noise barriers would be removed, and visual elements from shaft site access hatches, minimal aboveground equipment, and, potentially, a surge tower would be negligible within the landscape where they are located after mitigation. The incremental effect on cumulative visual impacts during operation of Alternatives 1 through 4 would be less than significant after mitigation. Therefore, the contribution is not cumulatively considerable, and operation of Alternatives 1 through 4 would not result in cumulative visual impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

The project would not occur under Alternatives 5 and 6, and as a consequence of taking no action, impacts on visual resources would be less than significant. Therefore, the contribution is not cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts on visual resources.

21.2.2 Air Quality

21.2.2.1 Scope of Analysis

The region of analysis for cumulative effects on air quality is the SCAB. The SCAB experiences chronic exceedance of state and federal ambient air quality standards. Therefore, exceedances of established South Coast Air Quality Management District (SCAQMD) thresholds must be considered an adverse consequence. The SCAB is currently in nonattainment for ozone, particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). These pollutant nonattainment conditions within the region are deemed to be cumulatively considerable.

21.2.2.2 Impacts of Past, Present, and Foreseeable Future Projects

Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. Therefore, the construction and operational impacts of related projects in areas surrounding the program and project activity areas would be cumulatively considerable, within the SCAB, if their combined construction or their combined operational emissions would exceed the SCAQMD daily emission thresholds for construction and operation, respectively. In the time period between the beginning and end of proposed program construction, project construction, and program operation, several large construction projects would occur in the surrounding areas (see Figure 21-1) that could overlap and contribute to cumulative construction and operational impacts.

Alternative 1 Through Alternative 4

The analysis that follows considers the potential cumulative effects, if any, that would result from construction and operation of the proposed program and project elements, combined with construction and operation of related projects, identified in Figure 21-1.

Activities for Which No Potentially Significant Cumulative Impacts Would Result. When considering the effects of past, present, and reasonably foreseeable future projects in combination with the anticipated effects of the program and project elements, the following impacts are not deemed to be cumulatively considerable:

- Construction and operation of program and project elements would not conflict with or obstruct implementation of the AQMP, as discussed in Chapter 5, and as such would not have incremental effects under CEQA and NEPA.
- Operational emissions would result from program elements only. Because operational project elements would consist of the use of a new or modified ocean discharge system to convey secondary effluent from the JWPCP to the ocean primarily by gravity, these activities would not emit pollutants. Additionally, in accordance with Section 1.4.2, the program elements are excluded from the NEPA scope of analysis. As presented in Chapter 5, emissions associated with operation of program elements would not have incremental air quality effects under CEQA.
- Localized impacts from program construction activities would not have an incremental localized air quality effect under CEQA prior to mitigation.
- Localized impacts from project construction activities would have an incremental localized air quality effect under CEQA and NEPA for nitrogen oxides (NO_X) prior to mitigation. Emissions would be reduced with the implementation of mitigation measures presented in Chapter 5 below the level of significance.
- Odors from fuel combustion during program and project construction and operation, as well as odors from wastewater treatment during program operation, would not have incremental effects under CEQA and NEPA, as presented in Chapter 5.
- Toxic air contaminants (TAC) would result from program operations only. As presented in Chapter 5, TAC emissions associated with operation of program elements would not have incremental air quality effects under CEQA prior to mitigation.
- Concurrent peak day emissions of PM_{10} and $PM_{2.5}$ (combined construction and operational impacts) would not exceed the SCAQMD daily emissions thresholds at any time, as described in Chapter 5.

Because the proposed elements would be less than significant following mitigation, they are not considered to have significant cumulative air quality impacts.

Activities for Which Potentially Significant Cumulative Impacts Would Result. When considering the effects of past, present, and reasonably foreseeable future projects in combination with the anticipated effects of the proposed program and project elements, the following impacts are deemed to be cumulatively considerable:

- Emissions associated with construction of program and project elements were deemed to have an incremental regional air quality effect under CEQA prior to mitigation. Emissions would be reduced with the implementation of mitigation measures presented in Chapter 5, but would continue to have an incremental regional air quality effect for NO_X under CEQA.

- Emissions associated with the construction of project elements were deemed to have an incremental regional air quality effect under NEPA prior to mitigation. Emissions would be reduced with the implementation of mitigation measures presented in Chapter 5, but would continue to have an incremental regional air quality effect for NO_X under NEPA.

Most of the air quality impacts from related projects would result from non-stationary sources, such as motor vehicles and construction equipment. The impacts, described above, represent additions to the non-stationary source emissions burden of the SCAB. Although, in the case of construction emissions, the impact would be temporary, NO_X is a precursor for ozone and, when considered with other related projects, could contribute cumulatively to the SCAB's ozone nonattainment status. Therefore, these exceedances would be considered a cumulative temporary impact.

The incremental effect on cumulative air quality impacts for NO_X during construction of Alternatives 1 through 4 would be significant and unavoidable. Therefore, the contribution is cumulatively considerable, and construction of Alternatives 1 through 4 would result in cumulative air quality impacts under CEQA and NEPA. Operation of Alternatives 1 through 4 would not make a cumulatively considerable contribution to cumulative air quality impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternative 5 is the No-Project Alternative, as required by CEQA. All program construction and operation impacts would be the same as for Alternatives 1 through 4, excluding impacts associated with process optimization at the water reclamation plants (WRPs). Alternative 5 (Program) would be subject to mitigation in accordance with the EIR prepared for the 2010 Plan (Jones & Stokes 1994). As discussed in Chapter 5, program impacts would be less than significant. Because the proposed program elements would be less than significant after mitigation, they are not considered to have significant cumulative construction air quality impacts. A new or modified ocean discharge system would not be constructed, and as a consequence of taking no action, there would be a greater potential during operation for emergency discharges of secondary effluent and/or sewer overflows into various water courses. However, past, present, and future foreseeable projects would not result in persistent odors in the areas of discharge, and a periodic emergency discharge would not result in a significant contribution to cumulative impacts.

Alternative 6 is the No-Federal Action Alternative, as required by NEPA. Although the program is not analyzed under Alternative 6, it is part of the cumulative scope of analysis because it is a foreseeable project. The combined effects from the No-Federal-Action Alternative and past, present, and foreseeable future projects would result in cumulatively considerable regional air quality impacts. However, the No-Federal-Action Alternative would not contribute to air quality impacts and, therefore, its incremental effect would not be cumulatively considerable.

In summary, the incremental effect on cumulative air quality impacts from Alternatives 5 and 6 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternative 5 under CEQA and operation of Alternative 6 under NEPA would not result in cumulative impacts on air quality resources.

21.2.3 Biological Resources (Terrestrial)

21.2.3.1 Scope of Analysis

The cumulative effects analysis examines the potential for cumulative impacts on terrestrial biological resources from the program and project when considered in addition to past, present, and foreseeable future projects within the cumulative effects analysis area. The focus of the analysis is on those resources that inhabit the vicinity of program and project elements. The cumulative effects analysis area is located within the Southern California coastal ecoregion. In the past, the vegetation of this region was dominated by chaparral and sage scrub habitats with pockets of woodlands, wetlands, and riparian habitats. A variety of wetlands and riparian vegetation was found along perennial and seasonal watercourses. Currently, these vegetation patterns persist in undeveloped areas. However, landscaped vegetation and impervious surfaces (roads, parking, buildings, etc.) dominate the current land cover condition. Watercourses are now heavily managed, and flood control facilities, including concrete-lined channels and detention/debris basins, have replaced biologically functioning riparian habitat along most of the length of the major streams and rivers. Within the cumulative effects area, critical habitat has been designated for two terrestrial species, California coastal gnatcatcher and Palos Verdes blue butterfly. Listed species under the Endangered Species Act (federal and state) that occur within the cumulative effects area include California coastal gnatcatcher in coastal scrub habitat, and least Bell's vireo in riparian habitat. Several species of concern may also inhabit habitat in the vicinity of program and project elements including yellow warbler, yellow-breasted chat, burrowing owl, and western pond turtle in riparian areas; and pocketed free-tailed bat near the JWPCP. Significant Ecological Areas have been designated along the coast of the Palos Verdes Peninsula, and in riparian habitat in the vicinity of the Whittier Narrows Water Reclamation Plant.

21.2.3.2 Impacts of Past, Present, and Foreseeable Future Projects

With regard to terrestrial biological resources, the significance of cumulative effects depends not only on the direct impacts of each individual project, but also the timing and proximity of the projects, the proximity of the projects to migration corridors and special habitats, and the overall character of the area that includes multiple projects. For program elements, construction would occur primarily within the existing site of the WRPs and would not encroach on natural areas or areas with sensitive habitat. The San Jose Creek Water Reclamation Plant (SJCWRP) is one exception as it is located in proximity to riparian habitat within the San Gabriel River that supports least Bell's vireo (federally and state-listed endangered), yellow breasted chat and yellow warbler (state species of special concern), and western pond turtle (state species of special concern). The Whittier Narrows Recreation Area is also located immediately downstream of the SJCWRP and is listed as a Sensitive Ecological Area (SEA-42) containing extensive lowland riparian and freshwater marsh habitat supporting a rich and diverse flora and fauna.

Operationally, WRP effluent management would occur within area water courses, and the water courses support habitat that is important to biological resources. As provided in Chapter 6, the analysis of effluent discharge from the various WRPs indicates that there is variability of water levels in the San Gabriel River, San Jose Creek, and the Rio Hondo seasonally and from year to year. Records show that at times WRP discharges are a principal source of flow in the downstream portion of the San Gabriel River and the Rio Hondo, and intermittent WRP discharges constitute one of the principal sources of flow supporting riparian vegetation and species that are dependent upon riparian vegetation. However, it is not clear that reduction or cessation of WRP discharges would necessarily result in a substantial reduction in stream flow because base flows in San Jose Creek (derived from urban runoff and upwelling

groundwater) have been observed to overflow each of the series of grade-control weirs on the San Gabriel River even when no WRP discharge is occurring. Because substantive changes in flow would only result from a specific major reuse project, a project-level and cumulative analysis would be conducted at the time such a project is proposed. Thus, the incremental effect on biological resources as a result of the Clearwater Program and the impacts of past, present, and foreseeable future projects are considered less than cumulatively considerable.

Figure 21-1 identifies 128 projects in the vicinity of the project. Only a few of the 128 projects are in the vicinity of shaft sites where construction activity would occur, and these are in previously developed areas. In addition, none would result in alterations in hydrology that would alter freshwater habitat, singly or in combination with operation of the Clearwater Program. As a result, the Clearwater Program would not make a cumulatively considerable contribution to cumulative impacts on biological resources.

Alternative 1 through Alternative 4

Of the 128 projects identified on Figure 21-1, two are in the vicinity of the Clearwater Program: the Port of Los Angeles Southwest Marine Demolition Project is located in the vicinity of the Southwest Marine shaft site, and an office building project would be located in the vicinity of the JWPCP West shaft site. Because no significant biological resources were identified at the Southwest Marine shaft site, there would be no incremental effect if construction were to occur concurrently with the Port of Los Angeles Southwest Marine Demolition Project. If construction of the JWPCP West shaft site were to occur concurrently with the nearby office building, it could potentially increase local noise, which could have an impact on nesting birds. However, construction would occur within the context of the site, which is subject to continuous road noise from Interstate 110 to the west, Figueroa Street to the east, and Lomita Boulevard to the north. Considering the context of the site, the potential impact on nesting birds would be less than significant.

Furthermore, mitigation has been identified to reduce temporary impacts on biological resources during construction of the Clearwater Program to less than significant, and there would be no significant impacts during operations. Because impacts would be less than significant following mitigation, and would generally be distant from the 128 other projects listed in Figure 21-1 either in time or space, the incremental effect on cumulative impacts during construction and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative impacts on biological resources under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 do not include a project, and a new or modified ocean discharge system would not be constructed. Therefore, there would be a greater potential for emergency discharges of secondary effluent and/or sewer overflows into various water courses. An emergency discharge or sewer overflow has the potential to direct secondary treated and untreated wastewater flows into the Wilmington Drain and ultimately Machado Lake as discussed in Chapter 11 and Chapter 20. Wastewater contaminants could have impacts on individual organisms present during emergency discharges. Although plants and wildlife downstream of the discharge would potentially be exposed to treated or untreated wastewater, these discharges would be temporary, would be most likely during periods of high precipitation runoff, and would not likely alter the vegetative communities downstream. Due to the low frequency and short duration of emergency discharges, this impact would not be cumulatively considerable. The Dominguez Channel is a saltwater environment, and discharges to this waterway would not have an impact on terrestrial and freshwater biological resources. Therefore, operation of Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts on biological resources.

21.2.4 Cultural Resources

21.2.4.1 Scope of Analysis

The geographic region of analysis for cumulative effects on cultural, archaeological, historical architectural, and paleontological resources related the Clearwater Program consists of the areas within the Los Angeles Basin, including at the Port of Los Angeles, the immediate vicinity of natural landforms along waterways and the coast, and in water where there may be submerged prehistoric remains or where there is evidence that historical maritime activity occurred. Thus, past, present, and reasonably foreseeable future development that would contribute to cumulative impacts on archaeological and paleontological resources under CEQA and NEPA includes projects that would have the potential for ground disturbance in this region of analysis. Those projects on land that have the potential to modify or demolish structures over 50 years of age have the potential under CEQA and NEPA to contribute to cumulative impacts on historical architectural resources. The study area was determined to be archaeological cultural resources and historical buildings within 0.5 mile of program and project elements.

21.2.4.2 Impacts of Past, Present, and Foreseeable Future Projects

The Los Angeles Basin is rich with cultural resources, from the prehistoric era and presence of the Gabrielino Native American tribe, through the growth of the city of Los Angeles in the 19th and 20th centuries. In addition, the remains of historic and modern vessels lie offshore on the Outer Continental Shelf in the shallow waters adjacent to the modern shoreline. This cumulative impact analysis focuses on three types of cultural resources: historical, archaeological, and paleontological. In determining impacts on the built environment, the study area for the program elements is limited to the WRP construction footprint and does not extend past the WRP property.

For the project, the study areas for archaeological impacts are the shaft site construction footprints, construction footprint for rehabilitation work at the existing outfalls, and riser/diffuser areas. There was only one instance of a historic district (Bethlehem Shipyard) within the study area that was proximate to a shaft site (Southwest Marine). For project impacts on archaeological resources, impacts at the shaft sites could be mitigated while archaeological resources were determined unlikely to be present at the tunnel depths. Because of the sensitivity of the region for paleontological resources and because these resources may be present at the tunnel boring depths, these resources could be individually and cumulatively impacted.

Alternative 1 Through Alternative 4

The surface-level younger alluvium in the Los Angeles Basin does not contain significant vertebrate fossils. However, the underlying Quaternary alluvium does contain significant paleontological resources and fossil deposits. Construction of the tunnel through subsurface sediments has the potential to destroy paleontological resources during tunnel boring, and there is no feasible mitigation to avoid or minimize these impacts. The incremental effect on cumulative impacts on unknown buried paleontological resources would be significant and unavoidable. Therefore, construction of Alternatives 1 through 4 could result in a potentially significant individual impact, but a less than cumulatively considerable contribution to cumulative impacts on paleontological resources under CEQA and NEPA.

There are no known archaeological resources within the project construction footprint, and archaeological resources were determined unlikely to be present at the tunnel depths. However, if unknown archaeological resources were encountered during construction at the WRPs, JWPCP, or shaft sites,

mitigation would reduce the incremental effect on cumulative impacts to less than significant. Because construction would not result in unmitigated destruction of archaeological resources, the contribution is not cumulatively considerable, and construction of Alternatives 1 through 4 would not result in cumulative impacts on archaeological resources under CEQA and NEPA.

A records search for historical resources near program and project elements revealed only three historic resources within proximity to a shaft site. These are the Bethlehem Shipyard near the Southwest Marine shaft site (Alternatives 1 and 2), and the Point Fermin Light House and a portion of the Upper Fort MacArthur Reservation near the Angels Gate shaft site (Alternative 3). Three shipwrecks are also within the vicinity of the existing ocean outfalls. However, the work on the outfalls would be limited to the area of potential effect, which is at most 23 feet wide (11.5 feet on either side of the largest outfall pipe), and construction activity is unlikely to affect any shipwrecks in the 20 to 50 feet of water where the new ballast rock is to be added. No buildings or structures more than 50 years of age within the CEQA study area would be affected by the Clearwater Program. Therefore, the contribution is not cumulatively considerable, and construction of Alternatives 1 through 4 would not result in cumulative impacts on historical resources under CEQA and NEPA.

As summarized, construction of the onshore and offshore tunnels for Alternatives 1 through 4 could destroy paleontological resources during tunnel boring, but would not result in cumulative impacts on cultural resources under CEQA and NEPA. Once operational, Alternatives 1 through 4 would have a less than significant incremental effect on cultural resources. Therefore, operation of Alternatives 1 through 4 would not result in cumulative cultural resource impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Because Alternatives 5 and 6 do not include a project, a new or modified ocean discharge system would not be constructed and significant cumulative impacts on paleontological resources would not occur. Furthermore, as a consequence of taking no action, impacts on archaeological and historical resources would not occur. The incremental effect on cumulative cultural resource impacts during operation of Alternatives 5 and 6 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts on cultural resources.

21.2.5 Geology, Soils, and Mineral Resources

21.2.5.1 Scope of Analysis

The scope of analysis for the cumulative impacts of geology, soils, and seismicity varies depending on the geologic issue. Geologic hazards, such as soil failures, settlement, shrink/swell, expansive soils, erosion, and earthquake-induced liquefaction risks affect the construction footprint of the program or project site and the area immediately adjacent to the construction footprint because these impacts are site-specific and relate primarily to construction techniques. The scope of the analysis with respect to landslides and mudflows would be confined to the program and project sites. Therefore, the scope of analysis for the assessment of cumulative impacts associated with these risks is within the construction footprint and the area within immediate proximity. However, the study area for seismicity and faulting could affect a broader region; therefore, the study area for the assessment of cumulative impacts associated with these risks is the regional area (i.e., county of Los Angeles).

Past, present, planned, and foreseeable future development that would have the potential to contribute to cumulative impacts on geologic resources are those that involve the addition of new land area,

infrastructure, and personnel that would be subject to earthquakes. The projects listed in Figure 21-1 are located in a region subject to severe seismically induced ground shaking due to an earthquake on a local or regional fault. Structural damage and risk of injury as a result of such an earthquake are possible for most cumulative projects listed in Figure 21-1.

21.2.5.2 Impacts of Past, Present, and Foreseeable Future Projects

Past, present, and reasonably foreseeable future projects would not change the risk of seismic ground shaking. However, past development has increased the amount of infrastructure, structural improvements, and the number of people working in the county of Los Angeles. This past development has placed commercial, industrial, and residential structures and their occupants in areas that are susceptible to seismic ground shaking and fault rupture. Therefore, these developments have increased the potential for seismic ground shaking and fault rupture to damage people and property, and impacts related to seismic ground shaking and fault rupture would be cumulatively considerable in association with past, present, and reasonably foreseeable future projects.

The cumulative geographic scope for unstable soils, expansive soils, shrink/swell, settling, liquefaction, and erosion is the same as the program and project sites because the effects of these geologic conditions are site-specific and related primarily to construction techniques. Therefore, because only past, present, and reasonably foreseeable future projects located on the program and project sites would contribute along with the Clearwater Program to a cumulative impact in these impact areas, and no such projects are identified, impacts from past, present, and reasonably foreseeable future projects would not be cumulatively considerable for these geologic hazards.

Alternative 1 Through Alternative 4

Most of the geologic impacts associated with Alternatives 1 through 4 would occur during construction. Geologic impacts associated with soil conditions such as unstable soils, expansive soils, shrink/swell potential, seismically induced liquefaction, mudslides, and landslides of all alternatives would be confined to the program and project sites. Furthermore, project design features and mitigation measures presented in Chapter 8 would reduce any significant geologic impact regarding these types of soil conditions to less than significant. Additionally, the offshore tunnel for Alternatives 1 and 2 and the onshore tunnel for Alternatives 3 and 4 would cross known fault lines and be subject to fault rupture. Impacts associated with fault rupture during construction of the tunnels were determined to be less than significant due to the infrequent occurrence of fault rupture and the relatively short duration of construction. For these reasons, the incremental effect on cumulative geologic impacts during construction of Alternatives 1 through 4 would be less than significant after mitigation. Therefore, the contribution is not cumulatively considerable, and construction of Alternatives 1 through 4 would not result in cumulative geologic impacts under CEQA and NEPA.

Project design features and mitigation measures presented in Chapter 8 would also reduce any significant geologic impact regarding unstable soil conditions during operations to less than significant and, therefore, incremental geologic impacts related to soil conditions of Alternatives 1 through 4 would not be cumulatively considerable during operation. Once operational, there would be few aboveground structures that could be affected, and impacts would be mitigated by site-specific design recommendations. As discussed in Chapter 8, the offshore tunnel for Alternatives 1 and 2 and the onshore tunnel for Alternatives 3 and 4 would incorporate mitigation such as technical design features into the tunnels; these measures would prevent exposure of the onshore or offshore tunnel structure to potentially adverse effects involving the rupture of a known earthquake fault during operations, reducing damage of underground pipelines to less than significant. Although impacts associated with seismic

shaking and fault rupture are deemed to be cumulatively considerable for the study area, the incremental geologic impacts during operation of Alternatives 1 through 4 would be less than significant after mitigation. Therefore, the contribution is not cumulatively considerable, and operation of Alternatives 1 through 4 would not result in cumulative geologic impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 do not include a project, and a new or modified ocean discharge system would not be constructed. Therefore, there would be a greater potential for emergency discharges of secondary effluent and/or sewer overflows into various water courses, including the Wilmington Drain. An emergency discharge during a wet-weather event would exceed the capacity of the Wilmington Drain. This exceedance could result in mudslides, ground failure, and unstable earth conditions in the unlined portions of the drain and possibly around Machado Lake. The Wilmington Drain and Machado Lake could be adversely modified during a wet-weather event and an emergency discharge. Therefore, impacts associated with these geologic resources would be significant and unavoidable. Present and future projects within the Wilmington Drain and Machado Lake could lessen the effect of an emergency discharge should it occur; however, the incremental effect on cumulative geologic impacts during operation of Alternatives 5 and 6 would be significant and unavoidable. Therefore, the contribution is cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would result in cumulative impacts on geologic resources.

21.2.6 Greenhouse Gases

21.2.6.1 Scope of Analysis

The region of analysis for cumulative effects on GHG is the state of California. The SCAB experiences chronic exceedance of state and federal ambient air quality standards. Therefore, exceedances of established SCAQMD thresholds must be considered an adverse consequence. The SCAB is currently in nonattainment for ozone, PM_{10}, and $PM_{2.5}$. These pollutant nonattainment conditions within the region are deemed to be cumulatively considerable.

21.2.6.2 Impacts of Past, Present, and Foreseeable Future Projects

Some global warming predictions indicate the long-term impacts from increasing GHG levels in the atmosphere include sea level rise, changes to weather patterns, changes to local and regional ecosystems including the potential loss of species, and significant reductions in winter snow packs. These and other effects would have environmental, economic, and social consequences on a global scale.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (CEC 2006a). In California alone, carbon dioxide (CO_2) emissions totaled approximately 478 million metric tons in year 2003 (CEC 2006a), which was an estimated 6.4 percent of global CO_2 emissions from fossil fuels. Based on this information, past, current, and future global GHG emissions, including emissions from projects in the Ports of Los Angeles and Long Beach (Figure 21-1) and elsewhere in California, are cumulatively considerable.

Alternative 1 Through Alternative 4

The challenge in assessing the significance of an individual project's contribution to global GHG emissions and associated global climate change impacts is to determine whether a project's GHG

emissions, which are at a micro-scale relative to global emissions, result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

As presented in Chapter 9, proposed program and project construction and program operation would produce higher GHG emissions within California borders in each analysis year, compared to SCAQMD's GHG emission thresholds under CEQA. Any concurrent emissions-generating activity that occurs globally would add additional air emission burdens to these significant levels, which could further exacerbate environmental effects.

In accordance with Council on Environmental Quality (CEQ) guidance, the Corps does not utilize the SCAQMD's interim CEQA significance threshold, propose a new GHG standard, or make a NEPA impact determination for GHG emissions estimated to occur from the program, project, or any of the alternatives. Rather, in compliance with the NEPA-implementing regulations and CEQ guidance, the anticipated emissions for each alternative are disclosed relative to the NEPA baseline without making a significance impact determination. The CEQ reference point of 25,000 metric tons per year CO_2 equivalents (CEQ 2010) used in this analysis serves as an indicator that the federal action's anticipated GHG emissions warrant detailed consideration in a NEPA review, as presented in Chapter 9. The reference point does not constitute an indicator of a level of GHG emissions that may significantly affect the quality of the human environment, but rather a minimum standard for reporting emissions under the Clean Air Act.

Activities for Which No Potentially Significant Cumulative Impacts Would Result. When considering the effects of past, present, and reasonably foreseeable future projects in combination with the anticipated effects of the program and project elements, the following impacts are not deemed to be cumulatively considerable:

- Both the federal government and the state of California have adopted laws and policies directed at regulating and reducing GHG emissions, as presented in Chapter 9. The 2007 AQMP prepared by the SCAQMD for the purpose of bringing the SCAB into attainment with the federal ozone standard will also have the concurrent benefit of reducing GHG emissions. Consequently, program and project construction and program operations would be consistent with the applicable plan for reducing GHG emissions and would, therefore, not result in a cumulatively considerable contribution to cumulative GHG impacts due to a conflict with any plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

Because the proposed elements would be less than significant following mitigation, they are not considered to have significant cumulative GHG impacts.

Activities for Which Potentially Significant Cumulative Impacts Would Result. When considering the effects of past, present, and reasonably foreseeable future projects in combination with the anticipated effects of the proposed program and project elements, the following impacts are deemed to be cumulatively considerable:

- Program and project construction activities would generate GHG emissions from construction equipment and mobile vehicles fuel exhaust, as discussed in Chapter 9. Program operation activities would generate GHG emissions from the increased combustion of digester gas, nitrification/denitrification at the SJCWRP, indirect electrical consumption at the WRPs, biosolids truck hauling from the JWPCP, and the emergency generator operation at the SJCWRP.

  The total contribution of GHG emissions from the proposed program and project (amortized construction plus operation at capacity) was compared to the baseline conditions. The

incremental emissions were then compared to SCAQMD's GHG emission thresholds and deemed to have an incremental GHG effect under CEQA prior to mitigation. Emissions would be reduced with the implementation of mitigation measures presented in Chapter 9, but would continue to have an incremental effect for GHG under CEQA. Any concurrent emissions-generating activity that occurs globally would add additional GHG emission burdens to these significant levels, which could further exacerbate environmental effects as discussed in this section and in Chapter 9.

The incremental effect on cumulative GHG impacts during construction and operation of Alternatives 1 through 4 would be significant and unavoidable. Therefore, the contribution is cumulatively considerable, and construction and operation of Alternatives 1 through 4 would result in cumulative GHG impacts under CEQA.

Alternative 5 and Alternative 6

Under Alternative 5, the No-Project Alternative, all program construction and operation elements, excluding process optimization at the WRPs, would occur. A new or modified ocean discharge system would not be constructed. Impacts from Alternative 5 would not result in incremental GHG effects under CEQA. Because the proposed elements would be less than significant, they are not deemed to be cumulatively considerable when viewed in connection with past, present, and probable future projects. Therefore, Alternative 5 would not make a cumulatively considerable contribution to cumulative GHG impacts.

Under Alternative 6, the No-Federal-Action Alternative, none of the project elements (i.e., onshore tunnel, shaft sites, rehabilitation of ocean outfalls, construction of riser and diffuser, etc.) would be constructed and the Sanitation Districts would continue to use the existing ocean outfalls. Therefore, the Corps would not make any significance determinations and would not issue any permits or discretionary approvals. As such, these elements would not be subject to NEPA. Although the program is not analyzed under Alternative 6, it is part of the cumulative scope of analysis because it is a foreseeable project. The combined effects from the No-Federal-Action Alternative and past, present, and foreseeable future projects would result in a cumulatively considerable contribution to cumulative GHG impacts. However, the No-Federal-Action Alternative would not contribute GHG emissions and, therefore, its incremental effect would not be cumulatively considerable.

21.2.7 Hazards and Hazardous Materials

21.2.7.1 Scope of Analysis

The scope of analysis for cumulative impacts associated with accidental spills, releases, or explosions of hazardous materials encompasses the area of the program and project sites and surrounding land uses. The impacts of a regional project diminish in magnitude with distance from the site because potential impacts associated with a hazardous material release, spill, or explosion diminish in magnitude with distance. Thus, past, present, and reasonably foreseeable future projects that could contribute to these cumulative impacts include those projects that transport hazardous materials in the vicinity of the program and project sites.

Past, present, planned, and foreseeable future development that would have the potential to contribute to cumulative impacts on hazards and hazardous materials are those that have involved, or would involve, the transport, storage, use, or handling of hazardous materials or are those that were or are currently located on designated hazardous materials sites.

21.2.7.2 Impacts of Past, Present, and Foreseeable Future Projects

Most of the past, present, and reasonably foreseeable future projects in the areas surrounding the program and project sites include industrial and commercial land uses that may use, handle, store, and/or transport hazardous materials. For example, the Port of Los Angeles is known to have many industrial land uses that handle hazardous materials and is known to have several contaminated sites. Furthermore, because the Port has industrial land uses, it has experienced and will likely continue to experience accidental releases or spills of hazardous materials in the future. However, past, present, and foreseeable future projects must comply with all existing hazardous material regulations in place through the local, state, and federal government. These regulations are in place to reduce the potential of accidental releases, spills, or explosions of hazardous materials and to minimize the environmental and public health impacts should one occur. Although projects cannot completely eliminate the probability associated with an accidental release, explosion, or spill, the existing regulations reduce the overall probability and minimize the impacts during a release. Therefore, past, present, and foreseeable future projects are not cumulatively considerable.

Alternative 1 Through Alternative 4

Some types of hazardous materials (e.g., diesel, oil, solvents, etc.) would be used during construction of Alternatives 1 through 4, and hazardous materials could be generated through the discovery of existing contaminated groundwater or soil. However, as discussed in Chapter 10, existing regulations would apply and would reduce the potential for an accidental release. Furthermore, if soil or groundwater contamination were discovered during construction of Alternatives 1 through 4, the contamination would be removed from the program or project site and would be treated and disposed of properly. Therefore, Alternatives 1 through 4 could result in an overall reduction of contamination that may be currently unknown and located in the soil and/or groundwater. Some additional hazardous materials would be used during operation of Alternatives 1 through 4 at the SJCWRP to disinfect the wastewater; however, as discussed in Chapter 10, use of these materials would be required to comply with existing regulations.

The incremental effect on cumulative hazards and hazardous materials impacts during construction and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative hazards and hazardous materials impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

The project would not occur under Alternatives 5 and 6, and as a consequence of taking no action, impacts would be less than significant. Emergency discharges and/or sewer overflows into various water courses would be considered a violation of the JWPCP National Pollutant Discharge Elimination System (NPDES) permit and of the Clean Water Act but would not result in significant hazard to the public or environment. The incremental effect on cumulative hazards and hazardous materials impacts during operation of Alternative 5 would be less than significant. Therefore, the contribution is not cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts associated with hazards and hazardous materials.

21.2.8 Hydrology, Water Quality, and Public Health

21.2.8.1 Scope of Analysis

The temporal scope for analysis of cumulative impacts on hydrology is the environmental baseline condition. Historic alteration of hydrologic processes has been so functionally and geographically

extensive that no surface water feature in the basin remains from historical time. The stream channels have been straightened, most are lined with concrete, and coastal shorelines have been altered by diking, dredging, and filling. Flow in all channels is controlled for flood hazard management, groundwater recharge, habitat maintenance, and other management objectives. Similarly, groundwater withdrawals have been extensive throughout the basin and existing groundwater supplies are largely maintained through engineered means including recharge at designated spreading grounds, injection pumping to establish saltwater intrusion barriers, and fully adjudicated groundwater extraction via wells. Accordingly, there is little remaining natural hydrology in the basin, apart from the Pacific Ocean itself, and surface and groundwater resources are fully managed in accordance with a complex set of existing laws, regulations, and policies.

The geographic scope for cumulative program impacts on hydrology includes the watersheds (Los Angeles River, San Gabriel River, and Dominguez Channel) and groundwater basins (San Gabriel Valley and Coastal Plain of Los Angeles) within which program elements would be located, as well as the adjacent coastal marine waters potentially affected by WRP discharges (the San Gabriel River Estuary) or stormwater discharges.

The geographic scope for cumulative project impacts on hydrology includes the watershed (Dominguez Channel, Machado Lake subwatershed) and groundwater basin (Coastal Plain of Los Angeles) within which project construction would occur, as well as the coastal marine waters potentially affected by construction of the riser and diffuser on the PV Shelf and the San Pedro Shelf (SP Shelf), and rehabilitation of the existing ocean outfalls.

The geographic scope with respect to tsunamis is the area of potential inundation due to a large tsunami, which could extend throughout the low-lying coastal areas of Los Angeles County. Past, present, and reasonably foreseeable future projects would not change the risk of tsunamis or seiches. However, past projects have resulted in the backfilling of natural drainages and creation of new low-lying land areas, which are subject to inundation by tsunamis or seiches in Los Angeles County.

21.2.8.2 Impacts of Past, Present, and Foreseeable Future Projects

Past, present, planned, and foreseeable future development that would have the potential to contribute to cumulative impacts on hydrology are those that have involved, or would involve, stormwater management, groundwater recharge or withdrawals, consumptive use of reclaimed water, effluent discharges, modifications of waterways, or in-water work. In addition, past development has increased the amount of infrastructure, structural improvements, and number of people working or living along the coast. This past development has placed structures and their occupants in areas that are susceptible to tsunamis and seiches. Thus, these developments have had the effect of increasing the potential for tsunamis and seiches to result in damage to people and property, and impacts would be cumulatively considerable associated with past, present, and reasonably foreseeable future projects.

Alternative 1 Through Alternative 4

Impacts on hydrology could arise via stormwater discharges during construction, or by altering flow or contaminant distributions in groundwater. As discussed in Chapter 11, impacts resulting from Alternatives 1 through 4 via these mechanisms would be less than significant.

Cumulative impacts on hydrology for Alternatives 1 through 4 were assessed by reference to the list of past, present, and reasonably foreseeable future projects contributing to cumulative impacts (Figure 21-1). The majority of these projects would have associated construction impacts with the potential to result in discharge of stormwater to surface waters, either directly or, more commonly, via a local stormwater

collection system. All or nearly all of these projects would disturb sufficient ground area to require preparation of a stormwater pollution prevention plan (SWPPP) and additional compliance with construction stormwater requirements of the local jurisdiction, including compliance with the general NPDES permit for construction stormwater discharges and in some cases with additional local regulations such as the Los Angeles County Municipal Separate Storm Sewer Systems permits. These regulatory constraints are intended to avoid significant construction-related impacts on water resources and are effective.

The projects shown in Figure 21-1 are not generally co-located with program and project elements. It is possible that conveyance construction projects could be located near some of the projects shown in Figure 21-1, but it is unlikely that these projects would also occur at the same time. If there were concurrent construction of Clearwater Program elements with other nearby projects, receiving waters could simultaneously be affected by stormwater discharge from more than one project. However, it is unlikely that such effects would arise as a result of simultaneous discharges from more than two projects, because only a few of the projects shown in Figure 21-1 are located near the construction sites of the alternatives, and compliance with regulations (e.g., SWPPP) would mitigate impacts. Thus stormwater effects resulting from construction of Alternatives 1 through 4 are unlikely to coincide in location with other projects generating construction stormwater, and there is a low potential for cumulative effects related to construction stormwater discharges.

Potential effects on groundwater flow and contaminant transport are detailed in Chapter 11, and the alternatives are shown to result in less than significant impacts. Projects 1–4, 6, 8–10, 12, 13, 17, 19, 21–24, 27–33, 45–70, 73, 74, 76, 78–81, 83, 90, 94, and 126, shown on Figure 21-1, are in the vicinity of proposed tunnels and/or shaft sites, and thus also have the potential to contribute to cumulative effects on groundwater. However, these projects are either located in marine areas or do not entail deep excavations that have the potential to affect groundwater movement. Accordingly, none of these projects in conjunction with Alternatives 1, 2, 3, or 4 has the potential to cause a cumulative effect on groundwater resources. Thus, there is a low potential for cumulative impacts on water resources as a consequence of altering flow or contaminant transport in groundwater.

Operation of program elements has the potential to contribute to cumulative hydrologic effects by affecting the production and use of reclaimed water or groundwater. However, none of the projects shown in Figure 21-1 have been identified as having the potential to substantially affect the production or use of reclaimed water or groundwater. Furthermore, operation of the program itself would have a less than significant impact on hydrologic resources; therefore, there is a low potential for operation of Alternatives 1 through 4 to contribute to cumulative impacts on groundwater.

Because the volume and temporal variability of discharges from the WRPs would not be changed substantially under the program, there is little potential for these changes to cause a regulatory standard to be violated. Similarly, existing discharge volumes from the WRPs constitute a minor component of discharges to the San Gabriel River Tidal Prism, which are dominated by discharges from the AES Alamitos and the Los Angeles Department of Water and Power (LADWP) Haynes electrical generating stations. These stations draw seawater for cooling purposes from Alamitos Bay and discharge the warmed seawater to the San Gabriel River. These stations have a combined maximum design cooling water flow of about 2,200 million gallons per day (MGD), enough volume to maintain a net outflow to the ocean except on extreme high tides. During a year-long biological survey in 2006, average flow rates for both facilities combined were approximately 1,400 MGD (MBC 2003:23). While these facilities may not be operated in this fashion in the near future, impacts from a cessation of ocean water cooling from these plants has been determined in other environmental documents to be less significant individually and cumulatively for water quality, sea turtles, eelgrass, Pacific groundfish, and coastal pelagics (LADWP

2010). Therefore, impacts on water quality would not make a cumulatively considerable contribution to cumulative hydrologic impacts.

As summarized, the incremental effect on cumulative hydrologic and water quality impacts during construction and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative hydrologic impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 do not include a project component. However, there is a significant cumulative impact associated with the emergency discharge of secondary effluent and/or a sewer overflow into various water courses. There would be cumulative effects related to siltation and erosion and water quality resulting from alteration of drainages during the emergency condition as well as the exceedance of the stormwater drainage system capacity and the exceedance of water quality parameters in areas such as Machado Lake and the Los Angeles Harbor, which are already impaired. The incremental effect on cumulative impacts would be significant and unavoidable. Therefore, the contribution is cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would result in cumulative impacts on hydrology.

21.2.9 Land Use and Planning

21.2.9.1 Scope of Analysis

Because the alternatives have the capacity to affect the environment within the program and project sites and the surrounding communities, the region of analysis for cumulative impacts includes the program and project sites and extends to adjacent areas including the surrounding communities, which are assessed in terms of their compatibility with existing program and project uses.

21.2.9.2 Impacts of Past, Present, and Foreseeable Future Projects

Past and present actions within the vicinity of the program and project sites have been subject to the land use/density designations stipulated in the general plans of the individual communities in which the program and project elements would be located. Furthermore, regional plans affecting Southern California communities stipulate various policies and procedures associated with land use. These plans and all past development projects have been approved pursuant to the adopted general plans, zoning codes, and other plans, ensuring compliance with the various plans and programs. Over the years, the communities have developed in accordance with their governing plans, ensuring consistency with land use/density designations to minimize impacts on surrounding areas. On occasion, the various plans have required amendments in order to accommodate specific projects, ensuring ongoing consistency with planning programs. Similarly, existing facilities within the program and project vicinity, and construction and operation associated with past and current projects have been modified as necessary to ensure proposed land use/density designations are consistent with the governing plans and policies; the same is expected of reasonably foreseeable future projects. Therefore, past, present, and reasonably foreseeable future projects would not result in cumulatively considerable contribution to cumulative impacts related to land use designations and inconsistencies.

Alternative 1 Through Alternative 4

Alternatives 1 and 2 would not result in impacts on land use designations, nor would they result in inconsistencies with land use designations or federal, state, regional, or local plans; therefore, impacts

would not be cumulatively considerable. Alternatives 3 and 4 would result in a land use designation and plan inconsistency through the location of the Angels Gate shaft site and Royal Palms shaft site, respectively. However, this inconsistency would not result in cumulatively considerable impacts because 1) no other past, present, or reasonably foreseeable future projects would occur around these two locations that would result in a land use inconsistency and 2) a general plan amendment would be processed as required to reduce this project-specific impact to less than significant. The incremental effect on cumulative land use impacts during construction and operation of Alternatives 1 through 4 would be less than significant after mitigation. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative impacts on land use under CEQA and NEPA.

Alternative 5 and Alternative 6

The project would not occur under Alternatives 5 and 6, and as a consequence of taking no action, there would be no land use designation inconsistency or plan inconsistency. Therefore, the contribution is not cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts on land use.

21.2.10 Marine Environment (Marine Hydrology, Water Quality, Biological Resources, Noise, and Public Health)

21.2.10.1 Scope of Analysis

The marine environment only applies to the project portion of all alternatives and does not apply to the program. The geographic region of analysis for biological resources differs by organism groups such as birds, fish, marine mammals, plankton, and benthic invertebrates. The mobility of species in these groups, their population distributions, and the normal movement range for individuals living in an area vary so that effects on biotic communities in one area can affect those communities in other nearby areas. For marine biological resources, excluding marine mammals, the geographic regions of analysis for benthic communities, water column communities (plankton and fish), and water-associated birds are the water areas around the riser and diffuser areas on the SP Shelf and PV Shelf, and the existing ocean outfalls. For marine mammals, the analysis area includes the Southern California Bight (SCB). The special-status bird species have differing population sizes and dynamics, distributional ranges, breeding locations, and life history characteristics. Because the bird species are not year-long residents but migrate to other areas where stresses unrelated to the project and other projects in the SCB area can occur, the area for cumulative analysis is limited to the Southern California coast between Royal Palms Beach and the Port of Long Beach and the alternative riser and diffuser areas. Sea turtles are expected to occur within proximity of the riser and diffuser areas and, therefore, the geographic region of analysis is within the SCB. Within the cumulative effects area, the California Department of Fish and Game has also identified critical habitat for black abalone near the existing outfalls on the PV Shelf.

Past and present projects operating within the SCB include oil platforms, fiber optic cables, wastewater outfalls, power point and other point source dischargers, stormwater and other nonpoint source discharges, and LA-2 and LA-3 (ocean dredge material disposal sites). In addition, the development of ports and marinas within the SCB, such as the Port of Los Angeles and the Port of Long Beach, and the increase in vessel traffic associated with port development would be considered past and present projects. Future projects would likely include liquefied natural gas projects within the SCB and any continuing development of the Port of Los Angeles and Port of Long Beach. Marine organisms could be affected by activities in the water such as dredging, filling, wharf demolition and construction, and vessel traffic. Runoff of pollutants from construction and operation activities on land reaching the SCB via storm drains

or sheet runoff also has the potential to affect marine biota, as does point source discharges such as ocean outfalls or power plants.

21.2.10.2 Impacts of Past, Present, and Foreseeable Future Projects

Construction of past, present, and reasonably foreseeable projects in the SCB involves in-water disturbances such as dredging and wharf construction that remove surface layers of soft bottom habitat as well as temporarily remove or permanently add hard substrate habitat (e.g., piles and rocky dikes). Furthermore, these activities generate turbidity as they disturb and suspend sediment in the water column. These disturbances alter the benthic habitats present at the location of the specific projects, but effects on benthic communities are localized and of short duration as invertebrates recolonize the affected habitats. Because these activities affect a small portion of the SCB at a time, and recovery has occurred or is in progress, biological communities in the SCB are not persistently subjected to construction and alteration. Therefore, past, present and reasonably foreseeable future projects would not result in cumulatively considerable impacts related to benthic habitats or water quality.

In-water construction activities, particularly pile driving, result in underwater sound pressure waves that could affect marine mammals. Marine mammals are expected to avoid areas where pile driving occurs, such as in the Los Angeles and Long Beach Harbors, marinas, or along the SCB coast, by moving to other areas; pile driving that occurs concurrently from more than one project would reduce the area available for marine mammals to avoid the disturbance. Overlapping construction activities often occur, especially within the Los Angeles and Long Beach Harbors, resulting in simultaneous pile driving in different areas. However, the area of sound impact on mammals is a maximum of 1.6 miles from the source of disturbance. The distance between the ports and the riser/diffuser area on the SP Shelf is approximately 9 miles. The distance between the ports and the PV Shelf is approximately 4 miles. Therefore, past, present and reasonably foreseeable future projects would not result in cumulatively considerable impacts related to pile driving.

Marine mammals migrate along the coast, and vessel traffic associated with the cumulative projects could interfere with their migration. However, because the area in which the marine mammals can migrate is large and the cargo vessels and cruise ships generally use designated travel lanes, the probability of interference with migrations is low, with the exception of vessel strikes. Historical data on whale strikes suggest that the vessel speed reduction would significantly reduce the potential for whale strikes because 80 percent of recorded strikes occurred with ships traveling faster than 12 knots. The Port of Los Angeles has implemented the Vessel Speed Reduction Program (VSRP), which lowers vessel speeds traveling to the port to 12 knots from Point Fermin, located 40 nautical miles from the port. Port records show there is currently over 90 percent participation in the VSRP, thereby reducing the potential for present and future increases in whale strikes due to vessels entering the Los Angeles and Long Beach Harbors. In addition, strikes can occur to sea turtles, dolphins, and other marine mammals. Operation of many of the past, present, and future projects would result in increased vessel trips to and from the Los Angeles and Long Beach Harbors; therefore, the related projects could potentially increase whale mortalities from vessel strikes, which is a cumulatively considerable impact.

Essential fish habitat (EFH) has been and would be lost due to past, present, and future landfill projects along the coast of the SCB and within the Los Angeles and Long Beach Harbors. EFH protection requirements began in 1996 and, therefore, only apply to projects since that time. The use of mitigation bank credits can offset the losses of EFH. Temporary disturbances within EFH also occur during in-water construction activities. These temporary disturbances, specifically within the Los Angeles and Long Beach Harbors, occur at locations that are scattered in space and time within the harbor. They would not likely reduce or permanently alter EFH within the Los Angeles and Long Beach Harbors and, therefore,

would not cause a significant cumulative impact on EFH. Construction and operation of ocean outfalls actually provide hard substrate within the coastal waters that contributes to EFH. Increased vessel traffic and runoff from on-land construction and operations resulting from the cumulative projects would not result in a loss of EFH nor would these activities cumulatively alter or reduce this habitat. Therefore, impacts from past, present, and reasonably foreseeable future projects would not be cumulatively considerable.

Dredging can adversely affect aquatic organisms present in sediments that are being removed if 1) toxic substances are present in sediments, 2) those sediments are suspended in the water column, displacing the organisms during dredge activities, or 3) the organisms are disposed of at a marine disposal site. Disposal of dredge spoils at designated ocean disposal sites LA-2 or LA-3 would be conducted only if the dredged material met the permitted volume and quality requirements for these sites. Dredge disposal at these sites was evaluated prior to approval of these sites and was determined to cause insignificant effects on the biological environment (EPA and Corps 2004). Therefore, impacts from past, present, and reasonably foreseeable future projects would not be cumulatively considerable.

Alternative 1 Through Alternative 4

Alternatives 1 through 3 involve the construction and operation of a riser and diffuser either on the SP Shelf or the PV Shelf and the rehabilitation of the existing ocean outfalls (see discussion of Alternative 4 for cumulative impacts associated with the rehabilitation). The construction impacts on benthic communities, water quality, and sediment quality would generally be localized around the riser and diffuser area on the SP Shelf or PV Shelf. The construction impacts associated with underwater sound, entanglement, and vessel collisions on marine mammals and turtles, other pelagic species such as fish, and EFH would occur in regions broader than the riser and diffuser area and would depend on the number of vessels used during construction and the period of construction and pile driving as described in Chapter 13. Furthermore, underwater sound and the use of vessels can affect the migration routes of certain species. These impacts would be considered significant prior to mitigation as discussed in Chapter 13; however, they would be reduced to less than significant with mitigation incorporated. These impacts would occur within the context of the larger SCB and Alternatives 1 through 3 would generally not be co-located with past, present, and reasonably foreseeable projects. As documented in Chapter 13, operation of Alternatives 1 through 3 would result in less than significant impacts on water quality, species habitat, and sediment quality. Because of these reasons, the incremental effect on cumulative impacts in the marine environment during construction (with mitigation) and operation of Alternatives 1 through 3 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 3 would not result in cumulative impacts on the marine environment under CEQA and NEPA.

Alternative 4 involves only the rehabilitation of the existing ocean outfalls and impacts on the marine environment would be far fewer than those identified for Alternatives 1 through 3. Specifically, there would be no noise impacts, fewer vessels required, and a lower probability of entanglement. It is possible that black abalone could be disturbed during the rehabilitation of the existing ocean outfalls; however, with the incorporation of mitigation, impacts would be less than significant. The incremental effect of rehabilitation of the existing ocean outfalls and their continued operation as currently exists would be less than significant with the mitigation incorporated. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternative 4 would not result in cumulative impacts on the marine environment under CEQA and NEPA.

Alternative 5 and Alternative 6

Under Alternatives 5 and 6, an emergency discharge into various water courses could occur. The water courses outlet into the Los Angeles and Long Beach Harbors. Discharges of secondary effluent and/or an overflow of untreated wastewater into the harbor waters could result in detrimental impacts on water quality and marine communities of the harbor. Complete flushing of the harbors is estimated at 90 tidal cycles, or 47 days. Although impacts associated with the introduction of secondary effluent or untreated wastewater into harbor waters would diminish with time prior to the full tidal exchange in the harbors, there is no feasible mitigation to reduce the significant impacts associated with an emergency release or overflow. The incremental effect on cumulative marine impacts during operation of Alternatives 5 and 6 would be significant and unavoidable. Therefore, the contribution is cumulatively considerable, and Alternative 5 under CEQA and Alternative 6 under NEPA would result in cumulative impacts on marine resources.

21.2.11 Noise and Vibrations (Terrestrial)

21.2.11.1 Scope of Analysis

The project area is located within Los Angeles County. Automobile, bus, and truck traffic are the major noise sources in the Joint Outfall System (JOS) service area. Industrial and commercial noise sources also contribute substantially to the ambient noise level in many areas. Freight loading from ships at the Port of Los Angeles is a major source of noise in the port and surrounding areas, including the communities of San Pedro and Wilmington.

Cumulative noise and vibration impacts on the marine environment are discussed in Section 21.2.10.

21.2.11.2 Impacts of Past, Present, and Foreseeable Future Projects

Virtually all of the cumulative projects in Figure 21-1 would include noise sources such as increased traffic, terminal operations, and neighborhood sources including parks and schools that would result in an increase in noise levels relative to the existing environment. Therefore, past, present, and foreseeable future projects would result in significant cumulative operational noise in the project area.

Alternative 1 Through Alternative 4

Alternatives 1 through 4 would result in significant temporary noise and vibrations impacts during program construction of plant expansion and process optimization at the SJCWRP. Project construction under Alternative 1 through Alternative 4 would also result in significant temporary increases in noise levels. Depending on alternative, significant impacts would occur in the vicinity of the JWPCP East, LAXT, Southwest Marine, Angels Gate, and Royal Palms shaft sites, and the onshore tunnel alignment along Figueroa and Gaffey to the PV Shelf, and Figueroa and Western to the PV Shelf. Noise from construction would be highly localized, intermittent, and would stop once construction is complete. In areas where significant impacts due to construction would occur, mitigation has been identified to reduce impacts to less than significant; therefore, the contribution is not cumulatively considerable, and construction of Alternatives 1 through 4 would not result in cumulative noise and vibration impacts under CEQA and NEPA.

Alternatives 1 through 4 would not result in significant impacts due to increases in noise during operation. Permanent noise sources such as plant expansion at the SJCWRP or biosolids management at the JWPCP are not predicted to result in a noticeable increase in noise levels. The onshore and offshore tunnels would not generate noise or vibrations during operations, and noise levels from operating shaft sites

would be well below standards established in local general plans or noise ordinances. The incremental effect on cumulative noise impacts during operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and operation of Alternatives 1 through 4 would not result in cumulative noise impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 do not include a project, and no cumulative project-level noise and vibration impacts would occur as a result of emergency discharges into various water courses. The incremental effect on cumulative noise impacts during operation of Alternatives 5 and 6 would be less than significant. Therefore, the contribution is not cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts on noise and vibrations.

21.2.12 Employment, Housing, Socioeconomics, and Environmental Justice

21.2.12.1 Scope of Analysis

The program and project elements under the alternatives have the capacity to affect the employment, housing, and socioeconomic conditions mainly in areas surrounding the program and project sites. However, in addition to the past, present, and future projects and the surrounding communities, the region of analysis for cumulative impacts includes the program and project sites and extends to the entire Los Angeles County reflecting the JOS service area, which is located within Los Angeles County.

21.2.12.2 Impacts of Past, Present, and Foreseeable Future Projects

Past projects within the Port of Los Angeles and the communities of Carson, Wilmington, San Pedro, and Rancho Palos Verdes have induced substantial population growth through the development of single- and multiple-family dwelling units as well as through the creation of a large employment base, particularly dependent upon and related to operations at the port. Although this growth has been accommodated through careful planning by local and regional authorities, environmental impacts have resulted.

Nearly all of the proposed present and future projects listed in Figure 21-1 would enhance the construction employment opportunities in Carson, Wilmington, San Pedro, and Rancho Palos Verdes, and possibly within the greater Los Angeles area.

However, cumulative impacts associated with past, present and reasonably foreseeable future projects regarding population and housing resources would not be cumulatively significant. Within the Port of Los Angeles and the surrounding communities, there has been a large amount of past industrial, commercial, and housing development. Present and future industrial and commercial projects planned for the port and surrounding area have significantly slowed down, contributing to one of the nation's highest unemployment rates. The project area is built out, and opportunities for large-scale housing developments are gone. Shipping through the port complex has also been down, mirroring the economic downturn of the past few years. Large infrastructure projects hold some promise for construction employment, but these projects are also significantly fewer than in the past or have taken longer to build based on a slow-down in state, federal, and local funding sources. Therefore, these developments have increased the potential for employment, housing, socioeconomics, and environmental justice impacts related to growth in the project area and would be cumulatively considerable associated with past, present, and reasonably foreseeable future projects.

Alternative 1 Through Alternative 4

Many of the current and foreseeable activities under the program and project involve construction or maintenance. These activities would increase the number of jobs in the construction industry. However, the effects of the additional construction jobs would be temporary and would last only in terms of the construction. Also, individual construction workers may be able to work on multiple construction projects within Los Angeles County. The incremental effect of construction employment from the construction activities under each alternative would be minimal given the estimated number of jobs that would be created as a result of the Clearwater Program and the number of jobs in the county. Additionally, the construction jobs created from the Clearwater Program are within regional and city employment projections. Therefore, approval of the proposed project would not induce substantial employment growth within the city or county. Other projects proposed in the area also have the potential to increase employment. However, through use of land use plans applicable to the project area and the Southern California Association of Government's regional plan, future growth is anticipated and planned. In addition, environmental documents prepared for the approved local land use plans and regional plans address the significant cumulative effects of future development and identify ways to mitigate those effects. The proposed project is consistent with local and regional land use plans. There is only one environmental justice impact at the JWPCP East shaft site under Alternatives 1 and 2, but in combination with other projects in the area, which are small (Projects 78, 79, 90, and 94), there would be no cumulatively considerable impacts related to low-income minority communities, employment, or population and housing for Alternatives 1 through 4.

As summarized, although impacts associated with employment, housing, and socioeconomics are deemed to be cumulatively considerable for the study area, the incremental effect on cumulative impacts during construction and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative impacts on employment, housing, and socioeconomics under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 do not include a project, and a new or modified ocean discharge system would not be constructed. Therefore, there would be a greater potential for emergency discharges of secondary effluent and/or sewer overflows into various water courses. This could result in significant and unavoidable impacts on water quality and recreation for the Los Angeles Harbor and neighboring beaches. Because these are regional resources, impacts would not result in disproportionately high and adverse effects on minority and low-income populations. The incremental effect on cumulative impacts on employment, housing, socioeconomics, and environmental justice during operation of Alternatives 5 and 6 would be less than significant. Therefore, the contribution is not cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts on employment, housing, socioeconomics, and environmental justice.

21.2.13 Public Services

21.2.13.1 Scope of Analysis

The geographic scope for cumulative construction impacts on public services is Los Angeles County and the cities of Los Angeles, Long Beach, Carson, and Pomona, specifically near areas where construction would occur. The resulting area for public services construction impact analysis generally encompasses the program and project area and the service areas for the primary and secondary responding units for

each service provider. The specific fire and police service providers are discussed in more detail in Chapter 16.

The geographic scope for cumulative operational impacts on public services is the county of Los Angeles because this would be the service area for the program and project.

21.2.13.2 Impacts of Past, Present, and Foreseeable Future Projects

Past, present, and foreseeable future development that would have the potential to contribute to cumulative impacts on public services are those that have involved, or would involve, construction and maintenance activities in roadways or public right-of-ways that are used by fire, police, and emergency response service providers as well as evacuation routes.

Many of the present and reasonably foreseeable future cumulative projects in Figure 21-1 involve construction of schools, apartments, homes, condominiums, warehousing, commercial, retail, and mixed-use development. Construction of these projects could impair the implementation of or physically interfere with an existing emergency response or emergency preparedness plan, or require the preparation of a new emergency response or preparedness plan. However, these projects would be required to coordinate with all law enforcement agencies during construction of all roadway improvements to establish emergency vehicular access, ensuring continuous law enforcement access to surrounding areas. Furthermore, police and fire stations are generally distributed to facilitate quick emergency response throughout the program and project area. Therefore, past, present, and reasonably foreseeable future projects would not result in a cumulatively considerable impact on the implementation of any emergency response, preparedness, or evacuation plan, nor would they require the preparation of a new emergency response or preparedness plan.

Alternative 1 Through Alternative 4

Alternatives 1 through 4 would result in less than significant cumulative impacts on public services. According to the returned service provider questionnaires (Appendix 16-A), only a few of the emergency response providers in the project area have plans for future construction of fire or police stations. The Los Angeles County Fire Department has been working with the city of Carson to address the need for an additional fire station on the west side of the city in the vicinity of Del Amo Boulevard and Main Street. This is within approximately 2 miles of the JWPCP. Furthermore, the Los Angeles County Fire Department's current 5-year facility plan has identified 20 new fire stations, all of which are planned to be built in the urban expansion areas of the county, which include Malibu, the Santa Monica Mountains, Santa Clarita, and the Antelope Valley. However, these areas are not near the WRPs or project areas and would not provide services to the project or cumulative projects. Also, actual station development is contingent upon, among other things, the pace of development in the vicinity of the planned station and the availability of sufficient funding for station development and ongoing staffing cost. The Los Angeles County Sherriff's Department Carson Station is schedule to be remodeled; however, there are no plans for construction of a new station. The Pomona Police Department is planning a possible new facility across the street from the main station. Finally, the Los Angeles Port Police completed a new Port Police headquarters, in November 2011, which located on the corner 5th Street and Center Street in San Pedro. The Long Beach Fire Department, Long Beach Police Department, and Los Angeles Fire Department do not have any plans to construct future stations in the project area. Although the Los Angeles Police Department did not provide a response to the questionnaire, an internet search was performed and did not reveal any plans for new stations in the South Bureau in the vicinity of the project.

Alternatives 1 through 4 construction activities would be contained within the boundaries of the various sites and would not result in additional permanent employees or changes in access at the various sites. Although project elements vary between Alternatives 1 through 4, all construction would take place within the boundaries of the shaft sites and underground tunnel alignments. As discussed in Chapter 16, Alternatives 1 through 4 would not substantially impair the implementation of or physically interfere with an existing emergency response or emergency preparedness plan, or require the preparation of a new emergency response or preparedness plan. All construction crews would be specifically trained to work within tunnels and would have standard operating procedures in case of a tunneling construction-related emergency. The Sanitation Districts' contractor would prepare and comply with the Confined Space Entry Program, as required by Title 29 of the CFR, addressing all potential physical and environmental hazards and containing procedures for safe entry into confined spaces. Contractors would also be required to operate and maintain their own safety equipment. Furthermore, the Sanitation Districts' contractor would adhere to all emergency response and evacuation regulations, ensuring compliance with existing emergency response plans.

As discussed in Chapter 16, operation of Alternatives 1 through 4 would be the same as the baseline conditions and would not interfere with the implementation of any emergency response, preparedness, or evacuation plan nor would it require the preparation of a new emergency response or preparedness plan.

The incremental effect on cumulative impacts during construction and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative impacts on public services under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 do not include any project elements and, as a consequence of taking no action, there would be a greater potential for emergency discharges into various water courses. This would be a temporary occurrence, and the Sanitation Districts would take immediate action to correct the situation. Therefore, it is not expected that any existing emergency response or emergency preparedness plan or emergency evacuation plan would be impaired. Therefore, the contribution is not cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts on public services.

21.2.14 Recreation

21.2.14.1 Scope of Analysis

The geographic scope for cumulative construction impacts on recreation is Los Angeles County and the cities of Los Angeles, Long Beach, and Pomona, specifically near areas where construction would occur. The geographic scope for cumulative operational impacts on recreation resources is the county and city of Los Angeles because these would be the service areas for the program and project, respectively.

21.2.14.2 Impacts of Past, Present, and Foreseeable Future Projects

Past, present, and foreseeable future development that would have the potential to contribute to cumulative impacts on recreation resources are those that have involved, or would involve, construction of or modifications to existing recreation resources, or construction of new recreation resources, in the general vicinity of the Clearwater Program.

Existing and proposed projects in the vicinity of the program and project area that would provide new open space and recreation resources for the public include the San Pedro Waterfront Enhancements Project (Project 22), Wilmington Waterfront Master Plan (Avalon Boulevard Corridor Project) (Project 26), Pacific Corridors Redevelopment Project (Project 47), Cabrillo Marine Aquarium Expansion (Project 48), East Wilmington Greenbelt Community Center (Project 71), and Queensway Bay Master Plan (Project 125). The addition of these projects would result in a significant increase in recreational opportunities in the area, and may benefit existing recreational resources in the vicinity of the program and project area by reducing the number of visitors to those recreational resources.

Construction activities that would affect on-land recreational opportunities within the vicinity of the program and project area include construction of schools, apartments, homes, condominiums, warehousing, and commercial, retail and mixed-use development. These activities could temporarily remove or degrade existing on-land recreational opportunities as well as increase the use of existing neighborhood and regional parks or other recreational facilities in the vicinity of the program and project area, but the impact would be short-term and not cumulatively considerable.

Alternative 1 Through Alternative 4

Alternatives 1 through 4 would result in less than significant cumulative impacts on recreation resources. There are a number of present and reasonably foreseeable future projects that would result in intensification of residential uses and, therefore, may increase population in the vicinity of the program and project area. These projects are growth-inducing, and their cumulative effect would likely result in intensification of use of existing recreational resources in the vicinity of the study area. However, these residential projects would be evaluated under a separate environmental process and would be required to comply with existing local and state regulations mandating recreational facilities that would specifically support these new projects.

Alternatives 1 through 4 at the project level would involve shaft site development and tunneling activities. These activities would remove or degrade existing on-land recreational opportunities within the vicinity of the program and project area for the duration of construction. Although construction activities would result in the temporary closure of portions of some recreation resources, it is expected that patrons would still utilize the sections that would remain in operation, as well as other recreational facilities including community centers, sports facilities, school playfields, swimming facilities, and fitness and senior centers in the surrounding vicinity. Construction activities would also expose patrons to excess noise levels at various recreation resource locations; however, these impacts would be temporary, minimized by noise barriers, and, in some cases, below or masked by the baseline noise levels, and would not significantly reduce recreational enjoyment of recreation resources. Additionally, construction activities would increase the amount of daily truck trips and limit the amount of parking at the Angels Gate and Royal Palms shaft sites; however, as discussed in Chapters 17 and 18, the carrying capacity and available onsite and on-street parking of the surrounding roadways can safely accommodate the addition of project-related construction truck trips and parking needs without significantly increasing congestion and limiting access. In the event that patrons do visit other facilities due to project construction activities, it is not expected that patrons would use facilities in a manner that would cause or accelerate substantial physical deterioration of those facilities. It is expected that the demand for alternative recreation resources would be distributed among the large number of parks and recreational facilities in the area and region, and would likely return to original recreation resources once construction activities cease.

Although construction of Alternatives 1 through 4 would result in a temporary loss or diminished quality of on-land recreational opportunities, these impacts would last during the construction period only and would return to levels comparable to that which existed prior to construction once construction is

complete. Mitigation such as noise barriers and noise-reducing construction practices would reduce diminishment of the recreational experience. Therefore, the incremental effect on cumulative recreation impacts during construction of Alternatives 1 through 4 would be less than significant after mitigation. Furthermore, operation of Alternatives 1 through 4 would not result in a significant impact on on-land recreational opportunities within the vicinity of the program and project area. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative recreation impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 would result in less than significant cumulative impacts on on-land recreation resources. Because Alternatives 5 and 6 do not include a project, a new or modified ocean discharge system would not be constructed. Therefore, there would be a greater potential for emergency discharges into the various water courses, such as the Wilmington Drain, which conveys flows to Machado Lake (also known as Harbor Lake) and ultimately to the Los Angeles Harbor. However, an emergency release entering Machado Lake would not substantially change the existing recreational conditions of the lake. Currently, swimming and boating are not allowed, and would likely not be allowed under either alternative. Although sport fishing is a permitted activity, officials recommend against eating any fish caught at Machado Lake. Recreational impacts resulting from emergency discharges of secondary treated effluent entering Machado Lake would be less than significant. Although operation of Alternatives 5 and 6 would result in diminished quality of recreational opportunities at Machado Lake, impacts would not cause significant impacts and would not be cumulatively considerable.

The Wilmington Drain has the capacity to handle a discharge from the JWPCP during normal flow or dry-weather flow events. However, during a storm event, the combined storm flow and discharge from the JWPCP could exceed the capacity of the Wilmington Drain. If sufficient capacity were not available in the Wilmington Drain, the sewers tributary to the JWPCP could overflow and untreated wastewater could enter various water courses, such as the Dominguez Channel and the Los Angeles River. Both the Dominguez Channel and the Los Angeles River discharge into the Los Angeles Harbor. Current recreational uses, including boating throughout the entire harbor and fishing around Cabrillo Beach and Cabrillo Pier, would be affected by a decrease in water quality as discussed in Chapters 11 and 13. The discharge of untreated wastewater into the Los Angeles Harbor would result in a significant impact on these recreational uses.

It is unlikely that an emergency discharge into the Wilmington Drain or a sewer overflow would be captured and treated subsequently. Therefore, the impact on water-related recreational resources around the Los Angeles Harbor would be significant and unavoidable. Although this would be a temporary impact for recreation resources because complete flushing of the harbor would occur in approximately 47 days (Maloney and Chan 1974:5–6), the incremental effect on cumulative impacts would be significant and unavoidable. Therefore, the contribution is cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would result in cumulative impacts on recreation.

21.2.15 Transportation and Traffic (Terrestrial)

21.2.15.1 Scope of Analysis

A description of past, present, and future transportation and traffic conditions is presented in Chapter 18. The transportation and traffic impact analysis presented in Chapter 18 assesses potential impacts against cumulative conditions at the peak of construction activities for the alternatives that were analyzed. Future traffic growth was projected by increasing existing traffic volumes using Congestion Management

Program for Los Angeles County-derived estimates of annual growth in the area and by adding traffic that would be generated by known pending development projects in the area. This approach to estimating future traffic volumes approximates traffic growth from development that is expected to occur under the general plan and other jurisdictional plans and growth projections. Consequently, the construction-period traffic analysis presented in Chapter 18 is a cumulative evaluation.

21.2.15.2 Impacts of Past, Present, and Foreseeable Future Projects

Potential cumulative construction effects from other past, present, and reasonably foreseeable future projects on roadway operations in the study area include the following:

- Temporary increases in traffic associated with construction worker commutes, delivery of construction materials, hauling of demolished and/or excavated materials, and general deliveries would increase travel demand on roadways.
- Temporary roadway lane closures or narrowings in areas directly abutting construction activities would reduce capacity of roadways.
- Temporary roadway closures associated with the construction of transportation infrastructure would reduce the capacity of the roadway system and/or require detours that increase travel times.
- Temporary lane or road closures could require route detours or reduced service for transit routes that run adjacent to construction activities.
- Reduced roadway capacity and an increase in construction-related congestion could result in temporary localized increases in traffic congestion that exceed applicable level of service standards.
- Construction activities could disrupt existing transit service in the proposed project vicinity. Impacts may include temporary route detours, reduced or no service to certain destinations, or service delays.
- During project construction, parking demand would increase from construction workers and from construction equipment that is not in use. In addition, parking spaces located adjacent to construction activities could be temporarily closed.
- Temporary sidewalk, lane, or roadway closures could occur adjacent to project elements that are under construction, which could interfere with bicycle or pedestrian traffic.

Without mitigation, the cumulative impact on transportation, due to construction-generated traffic and other construction activities, is considered significant during construction under CEQA and NEPA.

Operation of the proposed alternatives, in conjunction with traffic from other projects and general traffic growth, would have minimal traffic impacts. All traffic analysis completed for this EIR/EIS represent cumulative conditions.

Alternative 1 Through Alternative 4

Alternatives 1 through 4 would result in significant temporary transportation impacts during program construction of plant expansion at the SJCWRP; process optimization at the SJCWRP, Pomona Water Reclamation Plant, Los Coyotes Water Reclamation Plant , and Long Beach Water Reclamation Plant; and solids processing facilities at the JWPCP. Mitigation has been identified to reduce impacts for Alternatives 1 through 4 to less than significant. The contribution of Alternative 1 through Alternative 4 to cumulative transportation and traffic impacts would not be cumulatively considerable after mitigation.

No other significant cumulative impacts would occur under Alternative 1 through Alternative 4 during construction, and no additional mitigation measures would be necessary to address cumulative program or project construction impacts. In addition, the Sanitation Districts incorporate many standard practices and requirements into publicly bid construction contracts to minimize any traffic impacts during construction and follow local agency permitting requirements. These standard practices and bid requirements include preparation of a traffic management/traffic control plan, providing advance notice to affected parties, coordination with emergency service and public transportation providers, and identifying alternate pedestrian and bicycle access routes, where applicable. The traffic management plans will consider on-going construction and operational activities associated with other development or infrastructure projects in the immediate area. These practices, in combination with implementation of mitigation, would ensure that construction-related traffic and transportation impacts do not represent a significant contribution to cumulative traffic impacts.

Alternatives 1 through 4 would not result in significant impacts due to increases in traffic during operation, and all new facilities would be located below ground or within the existing plants. Operation of these alternatives would not significantly affect safety, emergency access, or non-motorized transportation facilities. Therefore, operation of Alternatives 1 through 4 would not make a significant contribution to cumulative transportation and traffic impacts.

As summarized, the incremental effect on cumulative transportation (terrestrial) impacts during construction (after mitigation) and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative transportation and traffic impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternative 5 is the No-Project Alternative, as required by CEQA. Alternative 5 would result in significant temporary transportation impacts during program construction of plant expansion at the SJCWRP and solids processing facilities at the JWPCP; however, Alternative 5 would be subject to mitigation in accordance with the EIR prepared for the 2010 Plan (Jones & Stokes 1994), which would reduce transportation impacts to less than significant. Alternative 5 does not include a project, and no cumulative project-level terrestrial transportation and traffic impacts would occur as a result of emergency discharges into various water courses. Furthermore, little if any additional traffic is anticipated under Alternative 5 during operations. Therefore, Alternative 5 would have a less than significant cumulative impact on the surrounding transportation system, and no changes to the existing roadway network, public rights-of-way, emergency access, or bicycle or pedestrian facilities or public transit stops accessible to the public would occur.

Alternative 6 is the No-Federal-Action Alternative, as required by NEPA. The cumulative impact analysis for Alternative 6 (Project) is the same as described for Alternative 5 (Project), and there would be no cumulative project-level impacts. Therefore, there would be no contribution from Alternative 6 to cumulative traffic and transportation impacts under NEPA.

As summarized, the incremental effect on cumulative traffic and transportation impacts during construction and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternative 5 under CEQA and operation of Alternative 6 under NEPA would not result in cumulative impacts on transportation and traffic (terrestrial).

21.2.16 Transportation and Traffic (Marine)

21.2.16.1 Scope of Analysis

The program does not include marine elements and, therefore, is not discussed in this cumulative analysis. The project elements would increase the number of vessels within the Port of Los Angeles, Main Channel, West Basin, Fish Harbor, and precautionary areas. It would also increase vessel traffic in the area surrounding the existing ocean outfalls, as well as in the marine vessel traffic lanes extending from the port to potential ocean disposal sites. Like all commercial vessels, these ships would follow designated traffic channels (also used by other vessels) when approaching and leaving the Port of Los Angeles/Long Beach complex. Marine-based construction activities include dredging near the riser and diffuser areas; transport of offshore tunnel excavated material from the LAXT shaft site and dredged material from the riser and diffuser areas to an Ocean Dredged Material Disposal Site; transport of the riser and diffuser; transport of workers from the Port of Los Angeles to the riser and diffuser construction locations; construction of the riser and diffuser; and rehabilitation of the existing ocean outfalls. Operational activities include marine traffic generated by maintenance of the riser and diffuser on the SP Shelf. Because the project elements have the capacity to affect vessel transportation within these port channels and surrounding vessel traffic lanes, the region of analysis for cumulative marine transportation impacts includes the vessel traffic channels that ships use to access berths within the Port of Los Angeles, Main Channel, West Basin, Fish Harbor, precautionary areas, and surrounding vessel traffic lanes.

The cumulative impacts include those impacts from past, present, and reasonably foreseeable future projects that will also increase the number and size of vessels using these shipping lanes, as well as increased use of the port areas.

21.2.16.2 Impacts of Past, Present, and Foreseeable Future Projects

Past actions within the project vicinity have resulted in deepening navigation channels and upgrading existing wharf infrastructure to accommodate modern container ships. Incremental port development has resulted in water-dependent developments that have been necessary to accommodate the needs of foreign and domestic waterborne commerce. In response to past actions, several measures have been implemented to ensure the safety of vessel navigation in the harbor area. Restricted navigation areas and routes have been designated to ensure safe vessel navigation, and are regulated by various agencies and organizations to ensure navigational safety.

Present and reasonably foreseeable port projects, including the Clearwater Program, could result in marine vessel safety impacts if they introduce construction equipment to the harbor, Main Channel, and/or precautionary areas; and/or interfere with United States Coast Guard (USCG) -designated vessel traffic lanes. In-water construction activities are in concurrence with many of the port projects shown in Figure 21-1. These projects include the Pier 400 Container Terminal and Transportation Corridor (Project 1), Berths 136-147 Terminal (Project 2), Channel Deepening (Project 4), Cabrillo Way Marina, Phase II (Project 5), San Pedro Breakwater Artificial Reef (Project 6), Berth 226–236 (Evergreen) Container Terminal Improvements (Project 8), SSA Outer Harbor Fruit Facility Relocation (Project 10), Westway Decommissioning (Project 14), Berths 97–109 China Shipping Development (Project 16), Berths 171–181 Pasha Marine Terminal Improvements (Project 17), San Pedro Waterfront (Project 22), Berth 302–305 (APL) Container Terminal Improvements (Project 24), Wilmington Waterfront Master Plan (Avalon Boulevard Corridor Project) (Project 25), Berths 212–224 (YTI) Container Terminal Improvements (Project 29), and the Berths 121–131 (Yang Ming) Container Terminal Improvements (Project 30). Construction activities would introduce construction equipment into the Main Channel. The

port utilizes standard safety precautions in piloting these vessels through harbor waters and standard measures including compliance with the Los Angeles Harbor Department (LAHD) standards for construction and dredging safety. Corps permit requirements would also apply.

Proposed improvements associated with other projects would improve the overall conditions in the port by creating berth depths sized to accommodate the modern, deeper-draft class of vessels. The deeper draft berths would improve the efficiencies of shipping and port operations by reducing the relative number of vessels and vessel trips required to accommodate projected container throughput at the port. While overall vessel traffic would increase from past, present, and foreseeable future projects, this increase would not create significant cumulative impacts.

Alternative 1 Through Alternative 4

Alternatives 1 through 4 would result in less than significant cumulative impacts on marine transportation and traffic. As discussed in Chapter 19, vessel traffic levels are highly regulated by the USCG Captain of the Port (COTP) and the Marine Exchange of Southern California via the Vessel Traffic Service (VTS) to ensure the total number of vessels transiting the port does not exceed the design capacity of the federal channel limits. Mariners are required to report their position to the COTP and the VTS prior to transiting through the port; the VTS monitors the positions of all inbound/outbound vessels within the precautionary area and the approach corridor traffic lanes. In the event that scheduling conflicts occur and/or vessel occupancy within the port is operating at capacity, vessels are required to anchor at the anchorages outside the breakwater until mariners receive COTP authorization to initiate transit into the port.

The construction phase of Alternatives 1 through 4 would involve the use of construction vessels and equipment to conduct riser assembly, installation, and maintenance. These vessels would transport all necessary supplies and construction crew within the port, precautionary areas, and surrounding vessel traffic lanes. Alternatives 1 through 4 would slightly increase marine traffic due to these activities. The cumulative increase in port vessel volume, in combination with increased recreational and cargo volume (i.e., containers and twenty-foot equivalent units) from other reasonably foreseeable future port projects would result in additional vessel traffic within the harbor, Main Channel, precautionary areas, and surrounding marine vessel traffic lanes. The increased vessel volumes would in turn increase the risk of in-water vessel traffic hazards. However, these types of activities are routinely conducted in the port, and contractors performing in-water construction activities are subject to applicable rules and regulations stipulated in all LAHD contracts. The port would utilize standard safety precautions, as well as other applicable compliance standards (e.g., the LAHD standards for construction and dredging safety), in piloting these vessels through harbor waters. Furthermore, vessels that would be utilized in project construction activities outside the port boundaries would adhere to all safety protocols, including USCG regulations, speed limit regulations, traffic separation schemes, limited visibility guidelines, and VTS monitoring requirements. Therefore, the short-term presence of supply barges/support boats in the harbor, Main Channel, West Basin, Fish Harbor, precautionary areas, and area surrounding the existing ocean outfalls, as well as marine vessel traffic lanes from the port to potential ocean disposal sites, would not reduce the existing level of safety for vessel navigation in and surrounding the port. These practices and procedures ensure safe transit of vessels operating within, as well as to and from, the project area. Given the continued use of standard practices and implementation of COTP uniform procedures, the projected cumulative increase in construction-related vessel calls would not significantly decrease the margin of safety for marine vessels or interfere with the operation of designated vessel traffic lanes entering and exiting the port within the cumulative area impacted by Alternatives 1 through 4. Therefore, construction of Alternatives 1 through 4, considered together with other present and reasonably foreseeable future projects, would result in less than significant cumulative impacts.

During operation, Alternatives 1 through 4 would slightly increase marine traffic due to vessel trips generated by maintenance of the riser and diffuser on the SP Shelf. The cumulative increase in port vessel volume, in combination with increased recreational and cargo volume (i.e., containers and twenty-foot equivalent units) from other reasonably foreseeable future port projects would result in additional vessel traffic within the harbor, Main Channel, precautionary areas, and surrounding marine vessel traffic lanes. The increased vessel volumes would in turn increase the risk of in-water vessel traffic hazards. However, as discussed in Chapter 19, the rate of vessel accidents (i.e., collisions, collisions with stationary objects or structures, and groundings) in the port is relatively low compared to vessel traffic volumes within the port. Standard practices and procedures ensure safe transit of vessels operating within, as well as to and from, the project area. Given the continued use of standard practices and implementation of COTP uniform procedures, the projected cumulative increase in vessel calls would not significantly decrease the margin of safety for marine vessels or interfere with the operation of designated vessel traffic lanes entering and exiting the port within the cumulative area impacted by Alternatives 1 through 4. Therefore, operations of Alternatives 1 through 4, considered together with other present and reasonably foreseeable future projects, would result in a less than significant contribution to cumulative impacts.

As summarized, the incremental effect on cumulative transportation and traffic (marine) impacts during construction and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative transportation and traffic (marine) impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 would not contribute to cumulative impacts. Alternatives 5 and 6 do 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. However, the emergency discharges would not have a significant cumulative impact on marine transportation. Therefore, the contribution is not cumulatively considerable, and Alternative 5 under CEQA and Alternative 6 under NEPA would not result in cumulative impacts on transportation and traffic (marine).

21.2.17 Utilities, Service Systems, and Energy

21.2.17.1 Scope of Analysis

Cumulative impacts on utilities can result from the combined demand of the program and project elements with past, present, and reasonably foreseeable future projects on any of the utilities for which the proposed project may have impacts. The geographic scope of the cumulative effect analysis of utilities depends on the service area of the individual utility providers and the jurisdiction over which increased demand for utility services from the program and project elements, as well as related projects, could reduce the availability of such utility services. Because the program and project elements have the capacity to affect the environment within the JOS service area, the region of analysis for cumulative impacts includes the city and county of Los Angeles and surrounding communities as identified in Figure 21-1. For stormwater, the geographic scope includes the WRPs, areas along the onshore tunnel alignments, shaft sites, and immediately adjacent lands because these represent the drainage areas that would be influenced by the program and project elements. The service areas of the Los Angeles County Department of Public Works (LACDPW) (stormwater), the Metropolitan Water District (MWD) (water supply), and Southern California Edison (SCE) and LADWP (energy) encompass the city and county of Los Angeles. The analysis region for cumulative utilities impacts focuses on the JOS service area because the infrastructure immediately serving the program and project area is located within this service

area. Service subareas of utility providers are sufficiently separated such that increased service demands from the program and project alternatives would not threaten such provisions in other areas.

21.2.17.2 Impacts of Past, Present, and Foreseeable Future Projects

Construction and operation of past projects have created a demand for storm drain, potable water, and energy infrastructure that is currently accommodated by existing utility lines. Storm drains are maintained by the LACDPW in the program and project area. Water supply is provided by the MWD in the program area and by CalWater and the LADWP in the project area. Energy demands are met by SCE and the LADWP within the program area and mainly LADWP in the project area.

The LACDPW is responsible for the design, construction, operation, and maintenance of flood control facilities within the county. Flood control districts, the California Department of Transportation, and local agencies generally have maintenance responsibility for storm drain systems within cities, and the LACDPW coordinates responsibilities with multiple cities and jurisdictions under the NPDES permit program for stormwater/urban runoff discharges. Two major storm drains in the county are the Wilmington Drain and Dominguez Channel, and are expected to have sufficient capacity to accommodate normal demands as discussed in Chapter 11 and Chapter 20. Some of the projects identified in Figure 21-1 involve relocation and, in some cases, expansion of existing facilities within the Ports of Los Angeles and Long Beach. Additionally, many of the projects involve new or expanded land uses that may result in additional demand on utilities and service systems. These projects include the Pier 400 Container Terminal and Transportation Corridor Project (Project 1), Berths 226-236 (Evergreen) Container Terminal Improvements Project (Project 8), Berths 97–109 China Shipping Terminal Development Project (Project 16), Berths 171–181 Pasha Marine Terminal Improvements (Project 17), Berths 302–305 APL Container Terminal Expansion (Project 24), Berths 121–131 Yang Ming Container Terminal (Project 30), Dana Strand Public Housing Redevelopment Project (Project 73), Ponte Vista (Project 83), and Middle Harbor Terminal Redevelopment, Port of Long Beach (Project 109). The related projects would likely require construction and/or expansion of stormwater utility systems on their respective sites, and may have to connect with nearby supply utility lines (usually in streets and other public rights-of-way). The construction of various utility lines would be carried out as part of the individual projects. However, because the storm drain and utility lines have adequate capacity, past, present and reasonably foreseeable future projects would not result in significant cumulative impacts on stormwater utility systems.

Water supplies for the MWD are detailed in various annual and planning reports using the supply provided during the single driest year and the multiple dry year hydrology scenarios. Water demand in the MWD service area would be met throughout 2030 through the use of State Water Project and Colorado River Aqueduct water supplies, as well as existing and planned conservation measures as discussed in Chapter 20. CalWater provides water supply services to the JWPCP through the Rancho Dominguez District. Water demand for the Rancho Dominquez District is forecasted in CalWater's urban water management plan and is expected to be sufficient throughout 2025. The LADWP provides water service to the city of Los Angeles, as well as to portions of Culver City, South Pasadena, West Hollywood, the Port of Los Angeles, and the community of San Pedro. According to the water demand and supply calculations in its 2005 urban water management plan, LADWP expects to be able to meet future demand with a combination of existing supplies, planned supplies, and MWD purchases (LADWP 2005). Many of the projects identified in Figure 21-1 are Port of Los Angeles and Port of Long Beach redevelopment projects, and some may require expansion of facilities. Additionally, some of the projects identified in Figure 21-1 involve new or expanded land uses that my result in additional utility demands. These projects include the Pier 400 Container Terminal and Transportation Corridor Project (Project 1),

Berths 136–147 Marine Terminal, West Basin (Project 2), Berth 226-236 (Evergreen) Container Terminal Improvements Project (Project 8), Berths 171–181 Pasha Marine Terminal Improvements Project (Project 17), Berths 302–305 (APL) Container Terminal Improvements Project (Project 24), Berths 121-131 (Yang Ming) Container Project (Project 30), Dana Strand Public Housing Redevelopment Project (Project 73), Ponte Vista (Project 83), and the Middle Harbor Terminal Redevelopment (Project 109). The number of related projects would increase the demands for water supply. However, based on the sufficient water supplies reported by the MWD, CalWater, and LADWP throughout 2025, the past, present, and reasonably foreseeable future projects would not result in a significant cumulative impact on the provision of water.

SCE is the main energy provider in the county with LADWP servicing the demands in the city of Los Angeles. SCE is projected to have adequate supply to provide for projected demands in the region. SCE has planned major infrastructure and replacement projects, including a proposed investment of $20 billion during the coming years to update the region's distribution and transmission grids to provide for the growth of electricity demand in the region and renewable energy supply requirements, as discussed in Chapter 20. The completion of these projects, along with the projected power supply, is expected to aid in the provision of electricity for the region's increased demand through 2030 and beyond. The LADWP recently approved its 2007 Power System Integrated Resource Plan for the entire service area. This energy resource planning document provides a framework for assuring that the future energy needs of the service area are met (LADWP 2007a). The LADWP maintains various generating and distribution substations throughout the greater Los Angeles area, including generating and distribution centers in and near the Port of Los Angeles, and is expected to have supplies sufficient to meet demands throughout 2027. Many of the projects identified in Figure 21-1 are Port of Los Angeles and Port of Long Beach redevelopment projects, and some may require expansion of facilities. Furthermore, several of the projects identified in Figure 21-1 involve new or expanded land uses that may result in additional demand on electricity. These projects include those mentioned previously for stormwater and water supply demand. These related projects would place an additional demand on electricity; however, based on the sufficient supply of electricity, the electricity demand of the past, present, and reasonably foreseeable future projects would not result in the need to construct new unplanned infrastructure and would not create a cumulatively considerable impact.

Alternative 1 Through Alternative 4

Alternatives 1 through 4 would result in less than significant cumulative impacts on utilities, service systems, and energy. Alternatives 1 through 4 would not require expansion or construction of new stormwater drainage facilities. Implementation of the program and project elements would alter drainage patterns by changing the location of stormwater discharge and stormwater runoff velocities at each of the proposed WRPs and shaft sites. However, the Sanitation Districts would be required to adhere to the grading and erosion control measures of Appendix J of the Los Angeles County Municipal Code, Chapter IX of the City of Los Angeles Municipal Code, the development construction control measures of Chapter 8 of the City of Carson Municipal Code, the stormwater management control measures of Section 18 of the City of Pomona Municipal Code, the stormwater and urban runoff prevention and control measures of Chapter 6.32 of the City of Cerritos Municipal Code, and Chapter 18.95 of the City of Long Beach Municipal Code, as well as comply with the requirements of the SWPPP. The Sanitation Districts would comply with all applicable city and county municipal codes regarding stormwater control. Compliance with the NPDES would require a SWPPP to be developed and implemented prior to construction if the site includes 1 acre or more of disturbed area. The SWPPP would identify applicable water quality best management practices to effectively control construction-related pollutants and stormwater generation, including alteration of the drainage patterns and changes in volume and velocity of flow. Therefore, Alternatives 1 through 4 would not result in a cumulative considerable impact requiring the construction of new stormwater drainage facilities or expansion of existing facilities.

Furthermore, Alternatives 1 through 4 would not result in increased water demands requiring new or expanded entitlements of water supply. Implementation of the program and project elements would result in an increase in potable water demand during construction activities only and, therefore, would be temporary and limited. Alternatives 1 through 4 would require a maximum of 206 acre-feet per year (AFY), with a maximum of 69 AFY provided by CalWater and 137 AFY provided by the LADWP for a maximum duration of 8 years. This equates to a maximum of approximately 0.2 percent of the projected future supply of CalWater for 2025 and approximately 0.01 percent of the projected future supply of the LADWP for 2030. Therefore, both the LADWP and CalWater are projected to have sufficient projected supplies to support the demand associated with construction. Not only would the projected water supply exceed the estimated demand for potable water during construction, the demand on the potable water supply would be temporary and would be limited to the duration of construction. As a result, Alternatives 1 through 4 would not create a significant cumulative impact or make a considerable contribution to a significant cumulative impact related to water supply.

Finally, Alternatives 1 through 4 would not result in increased energy demands requiring new or expanded energy supply and distribution infrastructure that are not anticipated by adopted plans or programs. Implementation of the program and project elements would result in increased demands for electricity during construction activities only and, therefore, would be temporary and limited. The maximum power requirement for Alternatives 1 through 4 would be 49,000 kilovolt-amperes for a maximum duration of 8 years as described in Chapter 20. The amount of energy required for the construction of Alternatives 1 through 4 would be greater than the existing demand for energy in the JOS service area; however, the estimated energy demand for construction is well within the estimated future projected supply for energy provided by SCE and the LADWP. Additionally, the demand on the energy supply would be temporary and would be limited to the duration of construction. Therefore, Alternatives 1 through 4 would not result in a significant increase in demands for electricity or make a considerable contribution to a significant cumulative impact.

In summary, the incremental effect on cumulative utilities, service systems, and energy impacts during construction and operation of Alternatives 1 through 4 would be less than significant. Therefore, the contribution is not cumulatively considerable, and construction and operation of Alternatives 1 through 4 would not result in cumulative utilities, service systems, and energy impacts under CEQA and NEPA.

Alternative 5 and Alternative 6

Alternatives 5 and 6 do not include a project, and 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 an emergency discharge of secondary effluent into various water courses, such as the Wilmington Drain, as described in Section 3.4.1.5. Discharges into the Wilmington Drain would flow into Machado Lake (also known as Harbor Lake) in Ken Malloy Harbor Regional Park. The temporary release of secondary treated effluent to Machado Lake would be considered a violation of the JWPCP's NPDES permit.

The Wilmington Drain has the capacity to handle a discharge from the JWPCP during normal flow or dry-weather flow events. However, during a storm event, the combined storm flow and discharge from the JWPCP could exceed the capacity of the Wilmington Drain. If sufficient capacity were not available in the Wilmington Drain, the sewers tributary to the JWPCP could overflow and untreated wastewater could enter various water courses. Untreated wastewater overflowing out of the sewers would likely enter the adjacent storm drains tributary to the Dominguez Channel and the Los Angeles River. Although the existing capacities could be exceeded, no new stormwater drains or expansion of stormwater drains would be constructed because the Sanitation Districts cannot legally discharge into the Wilmington Drain or allow an overflow to enter stormwater drainage systems. Therefore, Alternatives 5 and 6 would not require or result in the expansion of existing stormwater drainage facilities.

However, a discharge of secondary effluent into the Wilmington Drain or a sewer overflow would both result in exceeding wastewater treatment requirements of the Regional Water Quality Control Board. In the case of a sewer overflow, there could be disruptions to utilities, such as wastewater and stormwater conveyance systems, due to the increased flow demands. Additionally, sewer overflow that is not captured by storm drains could result in intrusion and contamination of entrenched utilities, groundwater, and local fresh water production wells. Therefore, various utilities could be significantly impacted.

It is unlikely that an emergency discharge into the Wilmington Drain or a sewer overflow would be captured and treated subsequently. Therefore, the contribution is cumulatively considerable, and operation of Alternative 5 under CEQA and Alternative 6 under NEPA would result in cumulative impacts on utilities, service systems, and energy.

21.2.18 Cumulative Impact Summary

A summary of significant cumulative impacts for all alternatives is provided in Table 21-1.

Table 21-1. Summary of Significant Cumulative Impacts by Alternative (Program and Project)

	Alternative											
	1		2		3		4[a]		5[b]		6	
Environmental Resource Area	**C**	**O**	**C**	**O**	**C**	**O**	**C**	**O**	**C[c]**	**O**	**O**	
Aesthetic Resources							X					
Air Quality	X		X		X		X					
Biological Resources (Terrestrial)												
Cultural Resources												
Geology, Soils, and Mineral Resources										X	X	
Greenhouse Gases[d]	X		X		X		X					
Hazards and Hazardous Materials												
Hydrology, Water Quality, and Public Health										X	X	
Land Use and Planning												
Marine Environment (Marine Hydrology, Water Quality, Biological Resources, Noise, and Public Health)										X	X	
Noise and Vibrations (Terrestrial)												
Employment, Housing, Socioeconomics, and Environmental Justice												
Public Services												
Recreation										X	X	
Transportation and Traffic (Terrestrial)												
Transportation and Traffic (Marine)												
Utilities, Service Systems, and Energy										X	X	

[a] Recommended alternative.

[b] Significance findings from the 2010 Plan, as relevant, apply in addition to any determinations shown in this table.

[C] Cumulative construction impacts for program elements are the same as for Alternatives 1 through 4, excluding process optimization at the WRPs.

[d] Applies to CEQA only.

C = construction

O = operation

X = significant cumulative impact

21.3 Growth-Inducing Impact Analysis

As stated in Chapter 1, the overall objective of the proposed Clearwater Program Master Facilities Plan is to ensure adequate JOS wastewater system capacity and reliability through the year 2050 by:

- Providing adequate system capacity to meet the needs of the growing population
- Providing for overall system reliability by allowing for the inspection, maintenance, repair, and replacement of aging infrastructure
- Providing support for emerging recycled water reuse and biosolids beneficial use opportunities
- Providing a long-term solution for meeting water quality requirements set forth by regulatory agencies

21.3.1 Direct Population-Generating Uses

None of the alternatives include the development of new housing or population-generating uses that would directly induce population growth. Furthermore, the alternatives are located in a highly urbanized region which has experienced significant development over the past century. Many of the communities within the service area of the JOS are established communities and are primarily built out. Therefore, the alternatives would not directly trigger new residential development in the area served by the JOS.

21.3.2 Growth Accommodation

The population of the area served by the JOS is projected to increase to a level that cannot be accommodated by the existing JOS. The population of the area served by the JOS was approximately 5.1 million in 2008 and is projected to increase to approximately 6.3 million by 2050. The wastewater flows from the projected 2050 population would be approximately 612 MGD, resulting in a JOS shortfall of approximately 20 MGD by 2050. This population would increase regardless of whether Alternatives 1 through 4 were implemented. Therefore, Alternatives 1 through 4 are not growth-inducing but, rather, growth-accommodating.

The fact that Alternatives 1 through 4 are growth-accommodating rather than growth-inducing is evident in the timeline of implementation. Much of Alternatives 1 through 4 would be implemented as necessary based on future flows. Therefore, the chosen alternative would accommodate the increased demand due to population growth as needed rather than creating excess capacity that could induce population growth.

21.3.3 Expansion of Public Services or Utilities

Because the alternatives involve improvements to the JOS wastewater system, they inherently involve the expansion of a public utility. However, the improvements would be growth-accommodating rather than growth-inducing, as described in Section 21.3.2. The construction and operation of the chosen alternative would generate increased demand for potable water and/or electricity. However, the demand for water and electricity would be adequately served by existing utilities, and the chosen alternative would not require new unplanned supplies, facilities, or expansion of existing facilities that provide these services. (See the Preliminary Screening Analysis [Appendix 1-A] and Chapter 20 for in-depth discussion of this topic.)

21.3.4 Economic Effects

As discussed in Section 21.3.1, none of the alternatives would include development of new housing. The service area for the JOS includes established communities that are primarily built out. Alternatives 1 through 4 are growth-accommodating, responding to the increased demand of population growth that would occur regardless of whether any of the alternatives were implemented. Because these alternatives would not trigger substantial increased population, they would also not result in the need for new utilities, infrastructure, or public services that could cause an economic impact within the service area.

21.3.5 Precedent Setting

Alternatives 1 through 4 would not set a precedent that could encourage and facilitate other activities that could significantly affect the environment. The Sanitation Districts have an existing ocean discharge system that is currently being used and the project is proposed in response to growth in the region as well as the need to increase infrastructure reliability. The Clearwater Program includes a long-range master facilities plan addressing needs through year 2050 and would not, therefore, set a precedent to develop similar projects or programs.

21.4 Summary of Growth-Inducing Impacts

The alternatives do not involve the construction or operation of direct growth-inducing uses such as housing. Although the chosen alternative would involve improvements to JOS wastewater system capacity, these would be implemented to accommodate the increased flows caused by a growing population in the service area with the goal of preventing a shortfall in the JOS capacity. The improvements would keep pace with flow increases as predicted by population increases in the JOS and would not create excess wastewater capacity that could stimulate population growth. Therefore, the chosen alternative would not induce population growth but, rather, accommodate growth that would occur independent of implementation.