

# Chapter 22

## COMPARISON OF ALTERNATIVES

### 22.1 Introduction

This chapter compares the alternatives summarized in Section 3.4 and evaluated in Chapters 4 through 20. Both the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA) require analysis of a reasonable range of alternatives. Accordingly, this environmental impact report/environmental impact statement (EIR/EIS) co-equally analyzes four alternatives that feasibly meet the objectives of the Clearwater Program, along with the No-Project Alternative (CEQA) and the No-Federal-Action Alternative (NEPA). This level of analysis is included to provide sufficient information and meaningful detail about the environmental effects of each alternative so that informed decision-making can occur.

As described in Chapter 3, the Clearwater Program Master Facilities Plan (MFP) identifies improvements throughout the Joint Outfall System (JOS) at both the program and project level. The program and project were combined into six alternatives that were carried through the analysis of impacts in Chapters 4 through 20. The six alternatives are:

- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4 (Recommended Alternative)
- Alternative 5 (No-Project Alternative)
- Alternative 6 (No-Federal-Action Alternative)

Other alternatives that were considered but eliminated during the alternatives screening process are summarized in Section 3.2 and discussed in detail in Chapter 6 of the Clearwater Program MFP.

### 22.2 CEQA Evaluation of Alternatives

#### 22.2.1 CEQA Requirements

The CEQA requirements for the evaluation of alternatives in an environmental impact report (EIR) are described in Section 1.2.1. The CEQA Guidelines (14 California Code of Regulations [CCR] Section 15126.6) require that an EIR present a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic project objectives but would avoid or substantially lessen any significant effects of the project. Section 15126.6 of the CEQA Guidelines also requires an evaluation of the comparative merits of the alternatives. An EIR is not required to consider alternatives that are infeasible.

## 22.2.2 CEQA Alternatives Comparison

The results of the CEQA significance analysis for each resource area, and the alternatives that would result in significant unavoidable impacts under CEQA, as discussed in Chapters 4 through 20 are summarized in Table 22-1. The CEQA scope of analysis includes both program and project elements. As detailed in Chapter 3, Alternatives 1 through 4 (Program) are the same. Project elements were assembled into a range of four alternatives, Alternatives 1 through 4 (Project), that propose a new ocean discharge system and/or a modified ocean discharge system. The program and project were assembled into four system-wide alternatives for the JOS, Alternatives 1 through 4. The CEQA alternatives comparison includes these alternatives in addition to Alternative 5, which is the CEQA No-Project Alternative. Under Alternative 5, there would be neither federal nor local approval of the project or program. Without the program, the Sanitation Districts would continue to expand, upgrade, and operate the JOS in accordance with the 2010 Joint Outfall System Master Facilities Plan (2010 Plan). Without the project, there is an increased potential for emergency discharges and/or sewer overflows into various water courses as described in Section 3.4.1.5.

**Table 22-1. Summary of CEQA Significance Analysis by Alternative (Program and Project)**

Environmental Resource Area	Alternative 1	Alternative 2	Alternative 3	Alternative 4 <sup>a</sup>	Alternative 5 <sup>b</sup>
Aesthetic Resources	S	S	S	S	N
Air Quality	S	S	S	S	L
Biological Resources (Terrestrial)	M	M	M	M	N
Cultural Resources	S	S	S	S	M
Geology, Soils, and Mineral Resources	M	M	M	M	S
Greenhouse Gases	S	S	S	S	L
Hazards and Hazardous Materials	L	L	L	L	L
Hydrology, Water Quality, and Public Health	M	M	M	M	S
Land Use and Planning	N	N	M	M	N
Marine Environment (Marine Hydrology, Water Quality, Biological Resources, Noise, and Public Health)	M	M	M	M	S
Noise and Vibrations (Terrestrial)	M	M	M	M	M
Employment, Housing, Socioeconomics, and Environmental Justice	L	L	L	L	L
Public Services	L	L	L	L	L
Recreation	L	L	L	L	S
Transportation and Traffic (Terrestrial)	M	M	M	M	M
Transportation and Traffic (Marine)	L	L	L	L	N
Utilities, Service Systems, and Energy	L	L	L	L	S

Alternative 6 is included in Table 22-2; it is the NEPA No-Federal Action Alternative and is not applicable under CEQA.

<sup>a</sup> Recommended alternative.

<sup>b</sup> Significance findings from the 2010 Plan, as relevant, apply in addition to any determinations shown in this table.

S = significant unavoidable impact

M = significant but mitigable to less than significant impact

L = less than significant impact

N = no impact

As shown in Table 22-1, Alternatives 1, 2, 3, and 4 would result in significant unavoidable impacts for aesthetic resources, air quality, cultural resources, and greenhouse gases (GHGs). As analyzed in this EIR, Alternative 5 would result in significant unavoidable impacts for geology, soils, and mineral resources; hydrology, water quality and public health; marine environment; recreation; and utilities, services systems, and energy.

## 22.3 NEPA Evaluation of Alternatives

### 22.3.1 NEPA Requirements

The NEPA requirements for the evaluation of alternatives in an environmental impact statement (EIS) are described in Section 1.2.2. NEPA (40 Code of Federal Regulations [CFR] Section 1502.14[a]) requires that an EIS explore and evaluate a range of reasonable alternatives to the project. The Clean Water Act (CWA) Section 404(b)(1) Guidelines (40 CFR Part 230) also address alternatives, stating that no discharge of dredged or fill material will be permitted if there is a practicable alternative to the proposed discharge that would have a less adverse impact on the aquatic ecosystem, so long as that alternative does not have other significant adverse environmental consequences. Chapter 3 of this EIS/EIR sets forth potential alternatives to the recommended plan, and Chapters 4 through 20 evaluate their environmental impacts.

### 22.3.2 NEPA Alternatives Comparison

As detailed in Section 3.5, the U.S. Army Corps of Engineers' (Corps') NEPA scope of analysis is limited to the project portion of each alternative. Consequently, the NEPA alternatives comparison precludes the program and evaluates only Alternatives 1 through 4 (Project) and Alternative 6, which is the NEPA No-Federal Action Alternative. Because Alternative 5 is the CEQA No-Project Alternative, there are no significance determinations under NEPA for Alternative 5. Note that Alternative 6 would not require a Corps permit (i.e., it represents what is reasonably expected to occur at the project site absent a Corps permit). The analysis of Alternative 6 evaluates what would occur if the federal portion of the project were not approved. The No-Federal-Action Alternative is the same as the NEPA baseline for this project, and would be the same as the proposed program in the absence of any federal action. The NEPA baseline is what can be predicted to occur if the federal portion of the project were not approved and the ocean discharge system were not constructed and/or modified. Without the project, there is an increased potential for emergency discharges and/or sewer overflows into various water courses as described in Section 3.4.1.6. Such discharges and/or overflows would not be predictable occurrences, and, therefore, are not considered the NEPA baseline. However, there would be a greater potential under Alternative 6 for emergency discharges and/or sewer overflows, and the impacts identified are the result of what would occur.

A summary of the results of the NEPA significance analysis for each resource area is provided in Table 22-2. NEPA impact determinations are identified by alternative at the project level (the analysis includes project-level impacts, not cumulative effects).

**Table 22-2. Summary of NEPA Significance Analysis by Alternative (Project)**

<b>Environmental Resource Area</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4<sup>a</sup></b>	<b>Alternative 6</b>
Aesthetic Resources	S	S	S	S	N
Air Quality	S	S	S	S	N
Biological Resources (Terrestrial)	N	N	N	N	N
Cultural Resources	S	S	S	S	N
Geology, Soils, and Mineral Resources	M	M	M	M	S
Greenhouse Gases <sup>b</sup>	---	---	---	---	---
Hazards and Hazardous Materials	L	L	L	L	L
Hydrology, Water Quality, and Public Health	L	L	L	L	S
Land Use and Planning	N	N	M	M	N
Marine Environment (Marine Hydrology, Water Quality, Biological Resources, Noise, and Public Health)	M	M	M	M	S
Noise and Vibrations (Terrestrial)	M	M	M	M	N
Employment, Housing, Socioeconomics, and Environmental Justice	S	S	L	L	L
Public Services	L	L	L	L	N
Recreation	L	L	L	L	S
Transportation and Traffic (Terrestrial)	L	L	L	L	N
Transportation and Traffic (Marine)	L	L	L	L	N
Utilities, Service Systems, and Energy	L	L	L	L	S

Alternative 5 is included in Table 22-1; it is the CEQA No-Project Alternative, which does not involve a federal action and is not applicable under NEPA.

<sup>a</sup> Recommended alternative.

<sup>b</sup> In compliance with the NEPA implementing regulations and Council on Environmental Quality guidance, no impact determination was made. Furthermore, there is currently no federal plan, policy, or regulation adopted for the purpose of reducing greenhouse gas emissions, and the Corps is not subject to California state laws and policies directed at regulating and reducing greenhouse gas emissions.

S = significant unavoidable impact  
M = significant but mitigable to less than significant impact  
L = less than significant impact  
N = no impact

As shown in Table 22-2, Alternatives 1, 2, 3, and 4 (Project) would result in significant unavoidable impacts on aesthetic resources, air quality, and cultural resources. Additionally, Alternatives 1 and 2 would result in significant unavoidable impacts on employment, housing, socioeconomics, and environmental justice. Alternative 6 (Project) would result in significant unavoidable impacts on geology, soils, and mineral resources; hydrology, water quality and public health; marine environment; recreation; and utilities, services systems, and energy.

## 22.4 Analysis of Impacts of Alternatives

Overall, less than significant impacts and impacts that can be mitigated to less than significant for Alternatives 1 through 4 include biological resources (terrestrial); geology, soils, and mineral resources; hazards and hazardous materials; hydrology, water quality and public health; land use and planning; marine environment; noise and vibrations (terrestrial); public services; recreation; transportation and traffic (terrestrial); transportation and traffic (marine); and utilities, service systems, and energy. Generally, for Alternatives 1 through 4, there are very few program or project operational impacts that would result in significant unavoidable impacts or require mitigation. The exceptions are discussed in

Section 22.4.1. When comparing the program to the project, it is primarily construction of the project that would result in the significant impacts under each alternative. One exception is air quality and GHGs, which are evaluated regionally thereby combining program and project elements. However, in this chapter, the analysis does not distinguish between program and project impacts or construction or operational impacts, but instead considers the alternative as a whole.

Alternative 5 (No Project) and Alternative 6 (No Federal Action) have significant operational impacts, and thus, an alternative whereby neither the program nor the project are implemented would not avoid environmental impacts. Both Alternatives 5 and 6 could result in an emergency discharge of secondary effluent to the Wilmington Drain. If sufficient capacity were not available in the Wilmington Drain, the sewers tributary to the Joint Water Pollution Control Plant (JWPCP) could overflow, and untreated wastewater could enter various water courses, such as the Dominguez Channel, the Los Angeles River, and ultimately, the Los Angeles Harbor. Discharges of secondary effluent and releases of untreated wastewater would be violations of the JWPCP National Pollutant Discharge Elimination System (NPDES) permit and the CWA, respectively. Significant impacts include impacts on water quality (freshwater and marine), geology and soils through erosion if the release resulted in large amounts of fast-moving water, recreation at the harbor because of degraded water quality, and utilities because wastewater systems would not be able to accommodate the flows.

## **22.4.1 Resources With Significant Unavoidable Impacts**

### **22.4.1.1 Aesthetic Resources**

Significant and unavoidable impacts on aesthetic resources would occur during construction of Alternatives 1 through 4 because work would occur adjacent to the coast, a highly valued scenic area protected by local plans to preserve the scenic integrity of coastal views. Rehabilitation of the existing ocean outfalls, which is included in Alternatives 1 through 4, would involve significant aesthetic impacts on land-based views of the ocean during construction. Aesthetic impacts under Alternatives 3 and 4 are related to construction at the Angels Gate and Royal Palms shaft sites, which are both coastal sites close to residential and recreational areas. Under Alternatives 1 and 2, construction activities and the associated noise barrier would degrade visual quality for residents adjacent to the JWPCP East shaft site. In summary, Alternatives 1 through 4 would have significant unavoidable aesthetic impacts during construction associated with a shaft site and rehabilitation of the existing ocean outfalls.

### **22.4.1.2 Air Quality**

Significant and unavoidable peak day air quality impacts would occur at a regional level during construction of Alternatives 1 through 4. Each alternative would exceed the SCAQMD daily significance thresholds for construction-related emissions before mitigation. Specifically, Alternatives 1, 3, and 4 would exceed thresholds for volatile organic compounds (VOC) and nitrogen oxides (NO<sub>x</sub>), and Alternative 2 would exceed thresholds for VOC, carbon monoxide (CO), and NO<sub>x</sub>. Although mitigation would reduce emissions, impacts would remain significant for NO<sub>x</sub> for all alternatives. The magnitude of the significance is directly related to the length of the alignment, the duration of construction, and the overlap of elements during construction with Alternatives 1, 2, and 3 having greater emissions than Alternative 4. Alternative 4 has the smallest emissions contribution of the four alternatives and would be the preferred alternative based on air emissions.

### **22.4.1.3 Cultural Resources**

Significant and unavoidable impacts on paleontological resources would occur during construction of Alternatives 1 through 4. The rock face being removed during onshore and offshore tunnel construction could not be observed for the presence of paleontological resources; thus, if present, paleontological resources would be destroyed by the tunnel boring machine. Likewise, at a certain depth, paleontological resources may be encountered during construction at the shaft sites; these resources could not be observed and, if present, would also be destroyed. Impacts are relatively equal across the alternatives, but it is likely that more paleontological resources would be encountered in the longer alignments; thus, Alternatives 3 and 4 are preferred over Alternatives 1 and 2 based on alignment length. Alternative 4 would be the preferred alternative with regard to paleontological resources based on alignment length.

### **22.4.1.4 Greenhouse Gases**

There are significant and unavoidable GHG impacts for each of the alternatives. The magnitude of the significance is directly related to the length of the alignment and the duration of construction. Estimates of total metric tons of carbon dioxide-equivalent (CO<sub>2</sub>e) emissions range from largest (Alternative 1) to smallest (Alternative 4). Alternative 4 has the smallest GHG contribution of the four alternatives and would be the preferred alternative based on GHG emissions.

### **22.4.1.5 Employment, Housing, Socioeconomics, and Environmental Justice**

Under NEPA, there are significant and unavoidable environmental justice impacts for Alternatives 1 and 2. Construction of Alternatives 1 and 2 would result in environmental impacts that are disproportionately high and adverse on minority and low-income populations.

## **22.4.2 Comparison of Alternatives**

Alternative 4 has the least amount of in-water work, shortest overall tunneling distance, only two shaft sites (same as Alternative 3), least number of truck trips, and shortest construction duration. Therefore, impacts would be reduced for Alternative 4 when compared to Alternatives 1, 2, and 3. This is demonstrated by the reduced number of GHG emissions and air quality impacts, and the reduced potential to encounter paleontological resources when compared to Alternatives 1, 2, and 3. Alternative 1 has the longest alignment under water and in total length, as well as four shaft sites (same as Alternative 2), and would generate the most truck trips. However, Alternative 1 would result in a maximum diffuser depth of approximately 200 feet below sea level, which is consistent with that of the existing ocean outfalls (Alternative 4). Alternatives 1 and 2 would result in disproportionately high and adverse environmental impacts on minority and low-income populations. The riser/diffuser area for Alternatives 2 and 3 extends within the boundaries of the U.S. Environmental Protection Agency (EPA)-designated Palos Verdes Shelf Superfund study area. Furthermore, Alternatives 2 and 3 would result in a maximum diffuser depth of approximately 175 feet below sea level, which is less than that of the existing ocean outfalls.

## **22.5 Environmentally Preferred and Superior Alternative**

Alternative 4 (recommended alternative) is the environmentally preferred and superior alternative. As discussed in Section 22.4.2, impacts would be reduced for Alternative 4, when compared to Alternatives 1, 2, and 3. Alternative 4 has only two shaft sites, the shortest overall tunneling distance, the fewest number of truck trips, and the shortest construction duration. Alternative 4 would not result in significant and unavoidable environmental impacts that are disproportionately high and adverse on

minority and low-income populations. Furthermore, in-water construction activities would be reduced for Alternative 4, which would utilize the existing ocean outfalls and would not require offshore tunneling or new construction of a riser and diffuser. This would avoid the mitigable impacts (discussed in this EIR/EIS) that would occur in the marine environment during offshore construction under Alternatives 1, 2, and 3. Alternative 4 would reduce the amount of marine vessel activity, eliminate the need for dredge material disposal, reduce the duration of in-water construction, and reduce the amount of air quality impacts and GHG emissions when compared to Alternatives 1, 2, and 3.