6

COMPARISON OF ALTERNATIVES

6.1 Introduction

This chapter compares the proposed Project with its alternatives. Various alternatives were considered during preparation of this Draft Supplemental Environmental Impact Statement/Subsequent Environmental Impact Report (SEIS/SEIR), as discussed in Chapter 2. Under the National Environmental Policy Act (NEPA), an Environmental Impact Statement (EIS) must devote "substantial treatment" to each alternative considered in detail, including the proposed action, so that reviewers may evaluate the comparative merits (40 Code of Federal Regulations [CFR] 1502.14[b]). The California Environmental Quality Act (CEQA) requires that an Environmental Impact Report (EIR) present a range of reasonable alternatives to the proposed Project. Accordingly, the proposed action and two other alternatives (one that meets most of the proposed Project objectives and Purpose and Need, and the No Federal Action/No Project Alternative), which are described fully in Section 2.5.2 and summarized in Table 6-1, have been analyzed co-equally in this Draft SEIS/SEIR. The two alternatives that were carried through the analysis of impacts in Chapter 3 are:

- No Federal Action/No Project Alternative; and
- Reduced Project Alternative: the proposed Project with reduced throughput.

The following alternatives were considered but eliminated from the analysis (see Section 2.5.3 for detailed descriptions):

- expansion of other crude oil terminals inside the Port of Los Angeles (Port);
- use of existing or planned berth(s) within the Port;
- development of a terminal on a new landfill inside the Port;
- use, expansion or construction of a terminal outside the Port;
- use of an offshore mooring site (monobuoy) on Terminal Island;
- shipping to the Bay Area and pipelining to southern California;
- constraining the size of vessels that could call at Berth 408;

- alternative storage tank configurations;
- a non-shipping use of the Pier 400 area;
- relocation of existing liquid bulk terminals to Pier 400;
- building a new container terminal on Pier 400;
- building a liquid bulk terminal on Pier 400 for refined products/alternative fuels, instead of crude oil; and
- building a renewable energy facility on Pier 400.

Table 6-1[1]. Summary of Proposed Project and Alternatives in 2040

	Marine Terminal Acres	*Tank Farm Acres*	*Annual Tanker Calls at Berth 408*	*Average Daily Crude Oil Throughput at Berth 408 (barrels per day [bpd])*	*Increase in Annual Tanker Calls at Other Existing Berths in the San Pedro Bay Ports*	*Total New Tank Capacity (barrels [bbl])at Berth 408*	*Operational Employee Estimates at Berth 408*
Proposed Project	5.0	47.7	201 [2]	677,000	0 [3]	4.0 million	54 [5]
No Federal Action/No Project Alternative	0	0	0	0	267 [4]	0	0
Reduced Project Alternative	5.0	47.7	132 [2]	450,000	240 [4]	4.0 million	61 [5]

Notes:

1. This table summarizes the major features of the proposed Project and alternatives.
2. The number of tanker calls at Berth 408 depends on crude oil supply sources and vessel availability and, for the Reduced Project Alternative only, the lease cap that would be imposed as part of that alternative. The estimates shown here are based upon projections of the world tanker fleet and terminal throughput from Baker & O'Brien (2007), and represent the highest reasonably foreseeable number of tanker calls for the proposed Project and the Reduced Project Alternative. (See Chapter 2, especially Table 2-1, Table 2-9, Table 2-12, and Table 2-13, for additional details, and see Appendix D1 for detailed calculations used to derive the estimates.) These highest reasonably foreseeable numbers are assumed in the impact analysis in this SEIS/SEIR in order to capture all potential impacts. A higher proportion of large vessels carrying larger loads would mean fewer vessel calls per year. Note that an emissions cap would be imposed in the South Coast Air Quality Management District (SCAQMD) operating permit, as described in Section 3.2 Air Quality. The actual number of tanker calls per year would be limited to comply with the SCAQMD permit condition; however, this SEIS/SEIR does not incorporate this limitation (in order to capture all potential impacts).
3. For the proposed Project, the environmental analysis uses the assumption that every new barrel of crude oil demanded by southern California refineries would be received at the new Berth 408. This may not occur in practice, as competition will continue among marine oil terminals to bring in oil imports and deliver them to area refineries. However, the assumption provides for a conservative analysis of reasonably foreseeable environmental impacts.
4. The number of tanker calls at existing terminals is an estimate based upon projections of the world tanker fleet and excess capacity at other existing terminals. See Section 2.5.2.1 for more information, and refer to Appendix D1 for detailed calculations used to derive the estimates.
5. The number of employees during operation includes those employed or contracted by PLAMT as well as the estimated increase in tugboat and Port pilot crews due to increased vessel calls (including, for the Reduced Project Alternative only, increased vessel calls at existing berths in the San Pedro Bay Ports).

6.2 NEPA Evaluation of Alternatives

6.2.1 NEPA Requirements

NEPA's requirements for an EIS to evaluate alternatives are described fully in Chapter 1, Section 1.5.7. Briefly, NEPA (40 CFR 1502.14) requires that an EIS

describe a range of reasonable alternatives to a project, or to the location of a project, that could feasibly attain most of the basic objectives of the project. Additionally, NEPA (40 CFR 1502.14) requires that substantial treatment be devoted to each alternative considered, including the no action alternative, such that their comparative merits can be evaluated. The Clean Water Act (CWA) Section 404(b)(1) Guidelines (40 CFR 230) also addresses alternatives, as described in Chapter 1, Section 1.4.1, stating that no discharge of dredged or fill material shall 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 the alternative does not have other significant adverse environmental consequences. Section 2.5 of this Draft SEIS/SEIR sets forth potential alternatives to the proposed Project, and Chapters 3, 4, and 5 evaluate their environmental impacts.

6.2.2 NEPA Alternatives Comparison

Table 6-2 summarizes the results of the NEPA significance analysis for each resource area and identifies the alternatives that would result in unavoidable significant impacts under NEPA, as discussed in Chapter 3 (the analysis presented in this chapter includes project-level impacts but not cumulative effects).

Table 6-2. Summary of NEPA Significance Analysis by Alternative

*Environmental Resource Area**	*Proposed Project*	*Reduced Project Alternative*	*No Federal Action/No Project Alternative*
Air Quality	S	S	N
Biological Resources	S	S	N
Geology	S	S	N
Ground Transportation	M	M	N
Groundwater & Soils	M	M	N
Noise	S	S	N
Recreation	S	S	N
Risk of Upset/Hazardous Materials	S	S	N
Utilities and Public Services	M	M	N
Water Quality, Sediments, and Oceanography	S	S	N

Notes:

* Only environmental resources with unavoidable significant impacts or significant but mitigable impacts are included in the table. This table includes project-level impacts, not cumulative effects.

S = Unavoidable significant impact

M = Significant but mitigable impact

N= No impact

As explained in Section 1.5.5.1 and Section 2.6.1, for this document, the U.S. Army Corps of Engineers (USACE), the LAHD, and the applicant have concluded that absent a USACE permit, it is not foreseeable that any element of the proposed Project would be implemented at the site. Therefore, for purposes of this document, the No Federal Action Alternative is equivalent to the No Project Alternative. Accordingly, both the No Federal Action Alternative and the No Project Alternative are referred to, jointly, as the No Federal Action/No Project Alternative. The No Federal Action/No Project Alternative consists of the full range of construction and operational activities that are likely to occur absent a permit from the USACE. In addition, for purposes of this analysis, the USACE has adopted the No Federal Action/No Project Alternative

as its environmental baseline for the purposes of analysis under NEPA (Section 2.6.1). The NEPA Baseline represents a dynamic baseline that accounts for growth in crude oil imports to southern California, with the attendant impacts, anticipated to occur without federal action (issuance of a USACE permit) related to the proposed Project.

A discussion of the resources with unavoidable significant impacts or significant impacts that can be mitigated to become less than significant is provided in Sections 6.4.1 and 6.4.2.

Table 6-3 summarizes the impact analysis of the analyzed alternatives compared to the proposed Project, and Table 6-4 summarizes the impact analysis of the proposed Project and its alternatives compared to the NEPA Baseline. The ranking of the alternatives is based on the impact determinations under NEPA for each resource and impact, as discussed in Chapter 3, and reflects differences between the levels of impact among alternatives, even if the alternatives result in impacts that are less than significant. This ranking also takes into consideration the relative number of significant impacts that are mitigated to a less than significant level and the number of impacts that remain significant after mitigation.

Table 6-3. Comparison of Alternatives to the Proposed Project (NEPA Impacts)

*Environmental Resource Area**	*No Federal Action/ No Project Alternative*	*Reduced Project Alternative*
Air Quality	2	1
Biological Resources	-2	0
Geology	-2	0
Ground Transportation	-1	0
Groundwater & Soils	-1	0
Noise	-2	0
Recreation	-2	0
Risk of Upset/Hazardous Materials	-2	0
Utilities and Public Services	-1	0
Water Quality, Sediments, and Oceanography	-2	0
Total	**-13**	**1**

Notes:

* Only environmental resources with unavoidable significant impacts or significant but mitigable impacts are included in the table. This table includes project-level impacts, not cumulative effects.

-2 = Impact considered to be substantially less when compared with the proposed Project.
-1 = Impact considered to be somewhat less when compared with the proposed Project.
0 = Impact considered to be equal to the proposed Project.
1 = Impact considered to be somewhat greater when compared with the proposed Project.
2 = Impact considered to be substantially greater when compared with the proposed Project.

Table 6-4. Comparison of Alternatives to the NEPA Baseline

*Environmental Resource Area**	*Proposed Project*	*No Federal Action/No Project Alternative*	*Reduced Project Alternative*
Air Quality	-2	0	-1
Biological Resources	2	0	2
Geology	2	0	2
Ground Transportation	1	0	1
Groundwater & Soils	1	0	1
Water Quality, Sediments, and Oceanography	2	0	2
Noise	2	0	2
Recreation	2	0	2
Risk of Upset/Hazardous Materials	2	0	2
Utilities and Public Services	1	0	1
Total	13	0	14

Notes:

* Only environmental resources with unavoidable significant impacts or significant but mitigable impacts are included in the table. This table includes project-level impacts, not cumulative effects.

-2 = Impact considered to be substantially less when compared with the NEPA Baseline.
-1 = Impact considered to be somewhat less when compared with the NEPA Baseline.
0 = Impact considered to be equal to the NEPA Baseline.
1 = Impact considered to be somewhat greater when compared with the NEPA Baseline.
2 = Impact considered to be substantially greater when compared with the NEPA Baseline.

Where significant unavoidable impacts would occur across different alternatives but there are impact intensity differences between those alternatives, numeric differences are used to differentiate alternatives (i.e., in some cases, there are differences at the individual impact level, such as differences in number of impacts or relative intensity).

On that basis, the No Federal Action/No Project Alternative has the fewest overall environmental impacts under NEPA, followed by the proposed Project, and lastly the Reduced Project Alternative. The analysis summarizes the specifics with regard to which environmental resource areas are significant and unavoidable (as shown in Table 6-2 and 6-3). It also identifies that the No Federal Action/No Project Alternative may be considered the environmentally superior alternative.

6.3 CEQA Requirements to Evaluate Alternatives

6.3.1 CEQA Requirements

The CEQA requirements for an EIR to evaluate alternatives are described fully in Chapter 1, Section 1.5.7. Briefly, CEQA Guidelines Section 15126.6(a) require that the discussion of alternatives in an EIR present a range of reasonable alternatives to the proposed Project, or to the location of the project, that could feasibly attain most of the basic project objectives, but would avoid or substantially lessen any of the significant effects of the project. Section 15126.6 also requires an evaluation of the comparative merits of the alternatives. An EIR is not required to consider alternatives that are infeasible (see Section 2.5).

6.3.2 CEQA Alternatives Comparison

Table 6-5 summarizes the results of the CEQA significance analysis for each resource area and identifies the alternatives that would result in unavoidable significant impacts under CEQA, as discussed in Chapter 3. A summary of the resources with unavoidable significant impacts or significant impacts that can be mitigated to less than significant is provided in Sections 6.4.1 and 6.4.2.

Table 6-5. Summary of CEQA Significance Analysis by Alternative

*Environmental Resource Area**	*Proposed Project*	*No Federal Action/No Project Alternative*	*Reduced Project Alternative*
Air Quality	S	S	S
Biological Resources	S	S	S
Geology	S	S	S
Ground Transportation	M	L	M
Groundwater & Soils	M	L	M
Noise	S	L	S
Recreation	S	S	S
Risk of Upset/Hazardous Materials	S	S	S
Utilities and Public Services	M	L	M
Water Quality, Sediments, and Oceanography	S	S	S

Notes:

* Only environmental resources with unavoidable significant impacts or significant but mitigable impacts are included in the table and the analysis used to rank alternatives; the analysis includes project-level impacts, not cumulative effects

S = Unavoidable significant impact

M = Significant but mitigable impact

L = Less than significant impact (not significant)

The proposed Project and both alternatives have unavoidable significant impacts in the areas of Air Quality, Biological Resources, Geology, Risk of Upset/Hazardous Materials, and Water Quality, Sediments, and Oceanography. During construction, the proposed Project and the Reduced Project Alternative have unavoidable significant impacts in the areas of Noise and Recreation.

Table 6-6 ranks the alternatives on the basis of a comparison of their environmental impacts with those of the proposed Project. The ranking is based on the significance determinations for each resource area, as discussed in Chapter 3, and reflects differences in the levels of impact among alternatives. This ranking also takes into consideration the relative number of significant impacts that are mitigated to a level below significance, the number of impacts that remain significant after mitigation, and the relative intensity of impacts. As shown in Table 6-6, the No Federal Action/No Project Alternative is deemed to be the environmentally superior alternative under CEQA.

Table 6-6. Comparison of Alternatives to the Proposed Project (with Mitigation; CEQA Impacts)

*Environmental Resource Area**	*No Federal Action/No Project Alternative*	*Reduced Project Alternative*
Air Quality	2	1
Biological Resources	-1	0
Geology	0	0
Ground Transportation	0	0
Groundwater & Soils	0	0
Noise	-1	0
Recreation	-1	0
Risk of Upset/Hazardous Materials	0	0
Utilities and Public Services	0	0
Water Quality, Sediments, and Oceanography	0	0
Total	-1	1

Notes:
-2 = Impact considered to be substantially less when compared with the proposed Project.
-1 = Impact considered to be somewhat less when compared with the proposed Project.
0 = Impact considered to be equal to the proposed Project.
1 = Impact considered to be somewhat greater when compared with the proposed Project.
2 = Impact considered to be substantially greater when compared with the proposed Project.
Where significant unavoidable impacts would occur across different alternatives but there are impact intensity differences between those alternatives, numeric differences are used to differentiate alternatives (i.e., in some cases, there are differences at the individual impact level, such as differences in number of impacts or relative intensity).

6.4 Analysis of Impacts of Alternatives

For each of the 15 environmental resources analyzed in this Draft SEIS/SEIR, Chapter 3 identifies significant impacts associated with the proposed Project, the No Federal Action/No Project Alternative, and the Reduced Project Alternative. Seven of the environmental resources evaluated (Air Quality, Biological Resources, Geology, Noise, Recreation, Risk of Upset/Hazardous Materials, and Water Quality, Sediments, and Oceanography) have unavoidable significant impacts for at least one alternative. Three of the environmental resources evaluated (Ground Transportation, Groundwater and Soils, and Utilities and Public Services) have significant impacts that could be mitigated to a less than significant level for the proposed Project and the Reduced Project Alternative. The remaining resources have no potentially significant impacts associated with any alternatives. The discussion below describes the significant impacts for each resource and identifies to which alternative the impacts apply.

6.4.1 Resources with Unavoidable Significant Impacts

Tables 6-2 and 6-5 identify the alternatives that would result in both unavoidable and mitigable significant impacts to the various resource areas, as discussed in Chapter 3. This information is taken from summary tables included at the conclusion of each of the 15 environmental resource sections in Chapter 3.

6.4.1.1 Air Quality

During construction, the proposed Project and the Reduced Project Alternative would have significant air quality impacts under CEQA and NEPA. For the proposed Project and the Reduced Project Alternative, even with implementation of all feasible mitigation measures, construction emissions would exceed South Coast Air Quality Management District (SCAQMD) thresholds of significance for volatile organic compounds (VOC), carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter less than ten microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). Additionally, even with implementation of all feasible mitigation measures, the proposed Project and the Reduced Project Alternative would result in individually significant ambient air quality impacts for 1-hour and annual nitrogen dioxide (NO_2), 24-hour PM_{10}, and 24-hour $PM_{2.5}$ emissions. The No Federal Action/No Project Alternative has no construction air quality impacts under NEPA or CEQA.

During operation, the proposed Project and both alternatives would have significant operational air quality impacts under CEQA, and the proposed Project and Reduced Project Alternative would have significant operational air quality impacts under NEPA. The No Federal Action/No Project Alternative would have no operational air quality impacts under NEPA. For the proposed Project and Reduced Project Alternative, under CEQA, even with implementation of all feasible mitigation measures, peak daily operational emissions of VOC, CO, NO_x, SO_x, PM, PM_{10}, and $PM_{2.5}$ would exceed applicable SCAQMD significance thresholds during some or all of future project years; thus, this impact is considered significant, adverse, and unavoidable under CEQA. For the proposed Project and the Reduced Project Alternative under NEPA, peak daily operational emissions of CO would exceed applicable thresholds and, therefore, would be significant. Additionally, for the Reduced Project Alternative, peak daily operational emissions of NO_x would exceed applicable thresholds and would therefore be significant. In terms of ambient concentrations, for the proposed Project and Reduced Project Alternative, even with the application of all feasible mitigation measures, ambient air quality impacts would remain significant for annual NO_2 under both CEQA and NEPA, which would be a significant, adverse, and unavoidable impact.

For the No Federal Action/No Project Alternative, peak daily operational emissions of VOC, CO, NO_x, SO_x, PM, PM_{10}, and $PM_{2.5}$ would exceed applicable SCAQMD significance thresholds during some or all of future project years. The No Federal Action/No Project Alternative would also have a significant effect on annual NO_2 concentrations. These impacts are considered significant, unavoidable, and adverse under CEQA.

Prior to mitigation, the proposed Project and the Reduced Project Alternative would result in significant impacts for cancer risks from toxic air contaminants (TACs) under both CEQA (on residential and sensitive receptors for both the proposed Project and the Reduced Project Alternative, and additionally on student receptors for the Reduced Project Alternative). However, with the application of feasible mitigation measures, these impacts would be mitigated to less than significant, except for cancer risks for residential and sensitive receptors in the Reduced Project Alternative. With and without mitigations, the proposed Project and Reduced Project

Alternative would have less than significant impacts on cancer risk under NEPA. The No Federal Action/No Project Alternative would have a significant and unavoidable impact on cancer risk under CEQA for all receptor types; the No Federal Action/No Project Alternative would have no impact for cancer risk under NEPA. Chronic and acute non-cancer effects would be less than significant for the proposed Project and both alternatives under both CEQA and NEPA (and for the No Federal Action/No Project Alternative under NEPA, there would be no impact relative to non-cancer effects).

The proposed Project, No Federal Action/No Project Alternative, and Reduced Project Alternative would produce greenhouse gases (GHG) at levels above the CEQA Baseline despite the application of mitigation measures (in the proposed Project and Reduced Project Alternative). These increases are considered significant under CEQA. In this document, projected GHG emissions for different project years are disclosed and the potential environmental effects of increasing GHG are discussed, but there is no determination whether the projected GHG emissions would be significant under NEPA. GHG and the implications of project-induced increases in GHG emissions are discussed in Section 3.2.2.2. GHG is inherently a cumulative issue: emissions from a single project cannot by themselves influence global climate change, but a single project may make a cumulatively considerable incremental contribution to the global GHG load.

From an air quality perspective, the No Federal Action/No Project Alternative is the environmentally preferred alternative under NEPA, while the proposed Project is the environmentally superior alternative under CEQA because it has the lowest cancer risk impact from toxic air contaminants. The proposed Project and the Reduced Project Alternative are very similar in regards to construction and operational air quality impacts. The No Federal Action/No Project Alternative is the worst alternative from an air quality perspective under CEQA because it results in the largest significant unavoidable cancer risk impacts from TACs. The quantitative emissions analysis suggests lower impacts for the No Federal Action/No Project Alternative in some impact criteria (e.g., construction emissions). On the other hand, the environmental analysis of the No Federal Action/No Project Alternative in this document does not (and cannot feasibly) identify all the environmental implications of the No Federal Action/No Project scenario, because under that alternative, much anticipated demand for importation of crude oil would have to be met via means of importation whose impacts are speculative (e.g., importation via truck, train or new pipeline).

6.4.1.2 Biological Resources

The proposed Project and both alternatives would have significant impacts on biological resources. The proposed Project and both alternatives have the potential to cause oil spills in the Port waters due to increases in vessel traffic. For accidental oil spills, proposed mitigation measures would reduce impacts to both special status and local non-special status marine bird species (specifically the California least tern and California brown pelican), but would not eliminate the potential for such accidents to adversely impact these. Since no additional feasible mitigation is available, residual impacts from accidental oil spills that affect a substantial number of birds would be considered significant and unavoidable under CEQA for the proposed Project and

both alternatives, and under NEPA for the proposed Project and Reduced Project Alternative. In addition, it should be noted that spill impacts under the No Project/No Federal Action are somewhat less likely to occur in the immediate vicinity of the California least tern nesting area, compared to the spill impacts of the Project or the Reduced Project.

The proposed Project and both alternatives would also have significant impacts on natural habitats (specifically the Cabrillo Beach eelgrass beds) from the potential for oil spills in Port waters, under CEQA; the same would be true for the proposed Project and the Reduced Project Alternative under NEPA. Additionally, although of low probability, construction of the proposed Project and the Reduced Project Alternative, and operation of the proposed Project and both alternatives, would have the potential to result in the introduction of non-native species via vessel hulls or ballast water and, thus, could substantially disrupt local biological communities. Such impacts would, therefore, be significant. Due to the lack of a proven technology, no feasible mitigation is currently available to prevent introduction of invasive species via vessel hulls. Thus, impacts from the proposed Project and the Reduced Project Alternative are significant and unavoidable under CEQA and under NEPA. Additionally, impacts from the No Federal Action/No Project Alternative are significant and unavoidable under CEQA but would have no impact under NEPA.

From a biological resources perspective, the No Federal Action/No Project Alternative would, by a very slight margin, be the environmentally superior alternative under CEQA, and it would be the environmentally preferable alternative under NEPA by a wide margin. The proposed Project and the Reduced Project Alternative are equal.

6.4.1.3 Geology

For the proposed Project and both alternatives, design and construction in accordance with applicable laws and regulations pertaining to seismically induced ground movement would minimize structural damage in the event of an earthquake (Section 3.5). However, increased exposure of people and property during construction and operation to seismic hazards from a major or great earthquake cannot be precluded, even with incorporation of modern construction engineering and safety standards. Therefore, impacts due to seismically induced ground failure would remain significant under CEQA for the proposed Project and both alternatives. They would also remain significant under NEPA for the proposed Project and the Reduced Project Alternative.

Impacts related to tsunamis and seiches would be significant and unavoidable under CEQA for the proposed Project and both alternatives and under NEPA for the proposed Project and the Reduced Project Alternative. Since the proposed Project and all alternative elevations are located within 15 feet (4.6 meters [m]) above mean lower low water (MLLW), there is a substantial risk of coastal flooding due to tsunamis and seiches. Designing new facilities based on existing building codes may not prevent substantial damage to structures from coastal flooding. In addition, even with implementation of proper Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS) protocol, a vessel set adrift in the Port area could have serious consequences from the potential of collision, including a potential hull breach and possible oil spill. Finally, if the tsunami were to occur during the unloading of crude

oil, the rising and falling of the vessel could lead to failure of the loading arms and an oil spill. Although less infrastructure would be susceptible to tsunami and seiche damage from the No Federal Action/No Project Alternative, aging marine terminals, such as Los Angeles Harbor Department (LAHD) Berths 238-240 and Port of Long Beach Berths 76-78 and 84-87, would potentially be operating out of compliance with MOTEMS for at least some of the period subsequent to 2010, making those berths more susceptible to damage.

From a geological perspective, under CEQA the proposed Project is the environmentally preferred alternative because the Marine Terminal would be designed per the MOTEMS to protect against potential seismic hazards that could occur. The Reduced Project Alternative introduces some additional seismic risk because incremental (i.e., compared to the CEQA Baseline [year 2004]) imports of crude oil demand in excess of 450,000 barrels per day (bpd) would arrive at other existing terminals within the San Pedro Bay Ports to the extent those terminals have remaining capacity. However, none of the existing terminals currently comply with MOTEMS. Although less development and infrastructure would be susceptible to seismically induced ground failure under the No Federal Action/No Project Alternative, impacts would potentially be greater than those described for the proposed Project and Reduced Project Alternative, as aging marine terminals would potentially be operating out of compliance with MOTEMS for at least some of the period after 2010.

Under NEPA, the No Federal Action/No Project Alternative is the environmentally preferred alternative, followed by the proposed Project, and lastly the Reduced Project Alternative.

6.4.1.4 Noise

Significant noise impacts under CEQA and NEPA on four sensitive receivers (Lighthouse Yacht Landing, Berth 204, and Reservation Point; see Figure 3.10-1 for locations) would occur during the construction of the proposed Project and Reduced Project Alternative. Shielding of noise sources may reduce noise levels at these receptors, but may not reduce the impacts to less than significant levels. Under the No Federal Action/No Project Alternative there would be no construction-phase noise impacts under NEPA and less than significant impacts under CEQA. None of the alternatives would generate operational phase noise that would create a significant impact.

From a noise perspective, under both CEQA and NEPA the No Federal Action/No Project Alternative would be the environmentally preferable alternative. The proposed Project and the Reduced Project Alternatives are ranked equally and would be ranked least preferable from a noise perspective.

6.4.1.5 Recreation

The proposed Project and Reduced Project Alternative would result in significant unavoidable impacts under CEQA and NEPA on the quality of recreational and visitor oriented-resources related to construction noise at four recreation areas, including marinas at Berth 204 and Lighthouse Yacht Landing; Reservation Point

(which was used as the receptor location representing noise conditions in the harbor for recreational boaters); and Stephen White Street and Oliver Vickery Circle Way (which was used as the receptor location representing noise conditions at Cabrillo Beach); see Figure 3.10-1 for locations.

Additionally, the proposed Project and both alternatives would result in significant unavoidable impacts under CEQA, and the proposed Project and Reduced Project Alternative under NEPA, on the quality of recreational and visitor oriented-resources and potentially result in a loss of recreational resources due to potential oil spills associated with proposed operations.

From a recreation perspective, the No Federal Action/No Project Alternative would be the environmentally preferable alternative under both CEQA and NEPA. The proposed Project and the Reduced Project Alternatives are ranked equally and would be ranked least environmentally preferable under both CEQA and NEPA.

6.4.1.6 Risk of Upset/Hazardous Materials

Significant unavoidable impacts would occur for the proposed Project and both alternatives under CEQA, and for the proposed Project and the Reduced Project Alternative under NEPA, based on the probability of crude oil spills during vessel transit and in Port waters, and specifically due to the potential for impacts on sensitive or endangered species. Note that in the absence of potential impacts on sensitive or endangered species and habitat, the increase in risk from the release of petroleum from a tanker while in LAHD-controlled waters due to the Project would be considered less than significant, which reflects the LAHD's better- than-average safety record, the types of vessels that would visit the proposed Marine Terminal, and the available spill response capabilities. However, the Cabrillo Shallow Water Habitat (1,900 feet [580 meters] away) and the Pier 400 Least Tern Habitat (2,400 feet [730 meters] away) are very close to the proposed Marine Terminal, and a spill within the Port would impact sensitive resources and result in the degradation of the habitat. Thus, potential impacts associated with oil spills resulting from a vessel accident would be significant.

From a risk of upset/hazardous materials perspective, the No Federal Action/No Project Alternative is the preferable alternative under NEPA. However, the quantitative probability analysis suggests that there is no environmentally superior alternative under CEQA because the proposed Project and both alternatives have similar potential for impacts related to oil spills as described above (note that vessels calling at the ExxonMobil terminal at LAHD Berths 238-240, which would call increasingly in the No Federal Action/No Project Alternative scenario, would also contribute to potential oil spill impacts on sensitive biological habitat). However, the No Federal Action/No Project Alternative analyzed in this document (and to a lesser extent the Reduced Project Alternative) does not (and cannot feasibly) identify all the environmental implications of the No Federal Action/No Project scenario. For example, in the No Federal Action/No Project Alternative and Reduced Project Alternative, existing terminals that do not comply with MOTEMS (including the terminal at LAHD Berths 238-240) would continue to receive more crude oil for a longer period; again, the quantitative risk analysis does not fully account for the higher probability of component failure for the existing terminals that do not comply

with MOTEMS. Therefore, the proposed Project is environmentally preferable under CEQA. See Section 3.12 and Chapter 4 for more detailed impact information.

6.4.1.7 Water Quality, Sediments, and Oceanography

None of the alternatives would have significant water quality impacts during the construction phase. During operations, the proposed Project and both alternatives would have significant unmitigable impacts under CEQA, and the proposed Project and the Reduced Project Alternative would have significant impacts that could not be mitigated below significance under NEPA, from illegal or inadvertent discharges from vessels during product offloading at Berth 408 and the potential for oil spills in the Harbor (under conditions of large spill volumes, incomplete containment and recovery, and wide dispersion by tides and wind). The No Federal Action/No Project Alternative would have no impacts under NEPA.

From a water quality perspective, the No Federal Action/No Project Alternative would be the environmentally preferable alternative under NEPA. It should be noted that the No Federal Action/No Project Alternative analyzed under CEQA in this document (and to a lesser extent the Reduced Project Alternative) does not (and cannot feasibly) identify all the environmental implications of the No Federal Action/No Project Alternative scenario. For instance, in the No Federal Action/No Project Alternative and Reduced Project Alternative, existing terminals that do not comply with MOTEMS (including the terminal at LAHD Berths 238-240) would continue to receive more crude oil for a longer period; the quantitative analysis of risk of oil spill does not fully account for the higher probability of component failure for the existing terminals that do not comply with MOTEMS. Therefore, the proposed Project is environmentally preferable under CEQA from a water quality perspective. See Section 3.14 and Chapter 4 for more detailed impact information.

6.4.2 Resources with Significant Impacts that Can Be Mitigated to Less than Significant

6.4.2.1 Ground Transportation and Circulation

The proposed Project and the Reduced Project Alternative would result a significant construction period impact under CEQA and NEPA at one intersection, Navy Way/Seaside Avenue, during the PM peak hour due to construction auto traffic. However, this impact would be mitigated to a less than significant level with incorporation of proposed mitigation measures (see Section 3.6).

From a ground transportation perspective, the No Federal Action/No Project Alternative is the environmentally preferable alternative under both CEQA and NEPA. The proposed Project and the Reduced Project Alternative are ranked equally under both CEQA and NEPA because the impact is related to construction and construction impacts are equal between the two.

6.4.2.2 Groundwater and Soils

The proposed Project and the Reduced Project Alternative would have potentially significant impacts under CEQA and NEPA from grading and construction that could potentially expose construction personnel, existing nearby operations personnel, and future occupants of the site to contaminated groundwater. Human health and safety impacts would be significant pursuant to exposure levels established by Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA). However, this impact would be mitigated to a less than significant level (see Section 3.7).

The proposed Project and the Reduced Project Alternative would have potentially significant impacts under CEQA and NEPA related to water quality impacts from horizontal directional drill (HDD) during pipeline construction. However, this impact would be mitigated to a less than significant level (see Section 3.7).

Construction of the proposed Project and the Reduced Project Alternative would have potentially significant impacts under CEQA and NEPA since the rate or direction of contaminant movement along Pipeline Segment 3 South (defined in Section 3.7) could change locally as a result of possible dewatering operations during trenching at the southern end of the pipeline segment. A dewatering well placed within the non-aqueous phase liquids (NAPL) plume would draw the NAPL towards the well, thus locally changing the direction and/or rate of movement of existing contaminants. In addition, HDD operations through contaminated groundwater of the semi-perched aquifer, most notably along Pipeline Segment 3 South, could result in cross-contamination of the underlying Gage Aquifer. Impacts would be considered potentially significant. However, this impact would be mitigated to a less than significant level (see Section 3.7).

From a groundwater and soil perspective, the No Federal Action/No Project Alternative is the environmentally preferable alternative under both CEQA and NEPA; the proposed Project and Reduced Project Alternative rank equally.

6.4.2.3 Utilities and Public Services

The proposed Project and the Reduced Project Alternative would have potentially significant impacts under CEQA and NEPA to utilities and public services from solid waste generated during construction activities. However, this impact would be mitigated to a less than significant level (see Section 3.13).

From a utilities and public services perspective, the No Federal Action/No Project Alternative is the environmentally preferable alternative under both CEQA and NEPA; the proposed Project and the Reduced Project Alternative rank equally.

6.5 Environmentally Preferred and Superior Alternative

Under the NEPA analysis, the No Federal Action/No Project Alternative is ranked the environmentally preferred alternative in terms of the fewest overall environmental

impacts when compared to the NEPA Baseline. The CEQA analysis also determined that the No Federal Action/No Project Alternative is the environmentally superior alternative for most resources, although the proposed Project is environmentally superior for air quality, geology, risk of upset, and water quality.

Under the No Federal Action/No Project Alternative, no new terminal, tank farms, or pipelines would be built. Instead, the No Project Alternative considers the only remaining allowable and reasonably foreseeable use of the proposed Project sites: the development of the sites referred to as Tank Farm Site 1 and Tank Farm Site 2 for temporary, intermittent storage of wheeled containers. In addition, for analysis purposes, the No Federal Action/No Project Alternative assumes that a portion of the increased demand for imports of crude oil in southern California would be accommodated at existing liquid bulk terminals in the San Pedro Bay Ports, to the extent of their remaining capacities. The No Federal Action/No Project Alternative would have no significant environmental impacts due to construction; operational impacts would be significant, and would be more severe than either the proposed Project or Reduced Project Alternative for several impacts, including cancer risk. Overall, under CEQA, the No Federal Action/No Project Alternative would have lower environmental impacts than the proposed Project or the Reduced Project Alternative for biological resources (by a very slim margin), ground transportation, groundwater and soils, noise, recreation, and utilities and public services. Under NEPA, since the No Federal Action/No Project Alternative is identical to the NEPA Baseline, it would have lower environmental impacts than the proposed Project or the Reduced Project Alternative.

However, the purpose and need of the proposed Project, as defined by the USACE and outlined in Section 2.3.2, is to construct a crude oil marine terminal on Pier 400 at Berth 408 and related transfer facilities to receive, store, and convey part of the forecasted increases in the volume of crude oil that will be shipped to southern California by sea. The Port is one of only five locations in the state identified in the Coastal Act (PRC Sections 30700 and 30701) for the purposes of international maritime commerce. Legal mandates of the LAHD and the California Coastal Commission identify the Port of Los Angeles and its facilities as a primary economic/coastal resource of the State and an essential element of the national maritime industry for promotion of commerce, navigation, fisheries, and operations of a harbor. Leaving the premises vacant for any extended time is not consistent with the legal mandates of the Port. Based on existing demand and capacity limitations on industrial Port uses and Trust purposes, all or most of the industrial facilities adjacent to deep water are needed to accommodate maritime commerce.

Under the No Federal Action/No Project Alternative, it is not considered likely that another liquid bulk terminal project would be approved at the site in the foreseeable future, since there is no proposal to do so. Thus, the No Federal Action/No Project Alternative would not meet the Project need under NEPA (Section 2.3.2) to construct and operate a crude oil terminal that maximizes the use of available shoreline and the existing deep-draft waterways created for the purpose by the Deep-Draft Navigation Improvements Project, construct sufficient berthing and infrastructure capacity to accommodate a portion of the foreseeable volumes of crude oil expected to enter southern California from foreign sources, ensure the efficient offloading of Very Large Crude Carriers (VLCCs), or provide terminal accessory buildings and structures to support the anticipated crude oil handling requirements. Nor would the

No Federal Action/No Project Alternative meet the Project objectives under CEQA (Section 2.3.1) to establish and maximize the Port's crude oil handling efficiency and capacity, construct a crude oil marine terminal capable of accommodating deep-draft VLCC tankers, construct associated infrastructure capacity that would efficiently accommodate a portion of the forecasted increases in demand for crude oil to be shipped to southern California by sea while maximizing the use of deep-water facilities created for the purpose by the Deep-Draft Navigation Improvements Project, or integrate into the Port's overall utilization of available shoreline.

Thus, based on the analyses in Chapter 3, the No Federal Action/No Project Alternative would result in fewer environmental impacts than the proposed Project or the Reduced Project Alternative, but would not meet the overall project purpose or objectives under NEPA or CEQA.

The Reduced Project Alternative would result in construction impacts that would be identical to those of the proposed Project. Operationally, the impacts of the Reduced Project Alternative would be similar to the proposed Project, and identical for some resource areas, but slightly higher in some cases and for some resource areas. For instance, the Reduced Project Alternative would result in a significant unavoidable increase in cancer risk at residential and sensitive receptors, while the proposed Project would result in less than significant increases in cancer risk at all receptors. There is no resource area for which the Reduced Project Alternative would result in lower environmental impacts than the proposed Project (although the geographic dispersion of some impacts, such as health risk impacts, would differ somewhat due to the different operational characteristics compared to the proposed Project). The Reduced Project Alternative would meet the Project purpose and objectives under NEPA and CEQA (Section 2.3), although the lease cap limiting throughput would reduce the degree to which the Reduced Project Alternative would maximize the use of deep-water facilities created by the Deep-Draft Navigation Improvements Project for the purpose of accommodating deep-draft VLCC tankers. As a result, the proposed Project would better accomplish the Project goals and objectives compared to the Reduced Project Alternative.

Based on the above, the proposed Project would best fulfill the overall project purposes and goals of the Port as discussed in Chapter 2.