Chapter 6
Comparison of Alternatives

6.1 Introduction

This chapter presents a comparison of alternatives to the proposed Project. Various alternatives were considered during preparation of this Recirculated Draft EIS/EIR. Under NEPA, an EIS must devote "substantial treatment" to each alternative considered in detail, including the proposed action, so that reviewers are able to evaluate the comparative merits (40 CFR 1502.14[b]). CEQA requires that an EIR present a range of reasonable alternatives to the proposed Project. Accordingly, the proposed action and seven other alternatives that either meet most of the proposed Project objectives and Purpose and Need Statement, are required by NEPA or CEQA, or are required by the ASJ (all of which are described fully in Section 2.5.1 and summarized in Table 6-1) have been analyzed co-equally in this Recirculated Draft EIS/EIR to provide sufficient information and meaningful detail about the environmental effects of each alternative, so that informed decision-making can occur. The seven alternatives that were carried through the analysis of impacts in Section 3 are:

- Alternative 1 – No Project
- Alternative 2 – No Federal Action
- Alternative 3 – Reduced Fill: No New Wharf Construction at Berths 102
- Alternative 4 – Reduced Fill: No South Wharf Extension at Berth 100
- Alternative 5 – Reduced Construction and Operation: Phase I Only
- Alternative 6 – Omni Terminal
- Alternative 7 – Nonshipping Use

The following alternatives were considered but eliminated from further analysis (see Section 2.5.2 for detailed descriptions):

- Use of West Coast Ports Outside Southern California
- Expansion of Terminals in Southern California but Outside the Los Angeles Harbor District
- Lightering
- Shallower Dredge Depth
- Liquefied Natural Gas Terminal Facility
- Offsite Backlands Alternatives

- Development of New Landfills and Terminals Outside the Berth 97-109 Terminal Area and the Adjoining West Basin Area
- Other Sites in the Los Angeles Harbor District
- Narrower Wharves
- Development and Operation of Small Container Terminal

6.2 NEPA Evaluation of Alternatives

6.2.1 NEPA Requirements

NEPA requirements for an EIS to evaluate alternatives are described fully in Chapter 1, Section 1.5.7. Briefly, NEPA (40 CFR 1502.14[a]) requires an EIS to describe a range of reasonable alternatives to a project, or to the locations for a project, that could feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any significant environmental impacts. The CWA Section 404(b)(1) also addresses 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 the alternative does not have other significant adverse environmental consequences. Section 2.5 of this Recirculated Draft EIS/EIR sets forth potential alternatives to the proposed Project, and Chapter 3 evaluates the suitability of each alternative.

6.2.2 Comparison of NEPA Alternatives

Table 6-2 presents a summary of 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 includes Project-level impacts, not cumulative effects). However, because NEPA does not require analysis of the CEQA No Project Alternative, which would not involve a federal action anyway, no NEPA analysis is performed for Alternative 1. NEPA requires an analysis of the No Federal Action Alternative, and, as such, Alternative 2 is included in Table 6-2. Section 2.6.2 provides further information on the NEPA baseline, which for this project is very similar to but not equivalent to the No Federal Action Alternative. A discussion of the resources with unavoidable significant impacts or significant impacts that can be mitigated to become less than significant is provided in Section 6.4.1 and Section 6.4.2.

Table 6-3 presents a summary of the impact evaluation of the analyzed alternatives compared to the NEPA baseline. The ranking of the alternatives is based on the impact determinations under NEPA for the resources where significant impacts (unavoidable or mitigable) would occur, as discussed in Chapter 3, and ranking reflects differences between the levels of impact among alternatives. 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. Note that NEPA impact analyses are not included for Alternative 1 for reasons discussed in Section 6.2.1 above.

Table 6-1. Summary of Proposed Project and Alternatives at Buildout (2030-2045)[a]

	Terminal Acres	Ship Calls	Annual TEUs (in millions)[d]	Cranes	Total Fill in Waters of the U.S.	New Wharves
Proposed Project	142 Gross Terminal Acres	234 Annual Ship Calls	1,551,000 Annual TEUs	10 A-frame cranes	Total of 2.54 acres of fill into waters of the U.S.	Total of 2,500 linear feet of new wharves
No Project Alternative[b]	72 Gross Terminal Acres	0 Annual Ship Calls	457,100 Annual TEUs	4 Existing A-frame cranes would be removed	1.3 acres of fill from Phase I, no new fill into waters of the U.S.	No new wharves 1,200 feet of wharf (Phase I)
No Federal Action Alternative [c]	117 Gross Terminal Acres	0 Annual Ship Calls	632,500 Annual TEUs	4 Existing A-frame cranes would be removed	1.3 acres of fill from Phase I, no new fill into waters of the U.S.	No new wharves 1,200 feet of wharf (Phase I)
Reduced Fill Alternative, No Berth 102 wharf	142 Gross Terminal Acres	130 Annual Ship Calls	936,000 Annual TEUs	5 A-frame cranes	Total of 2.5 acres of fill into waters of the U.S.	Total of 1,575 linear feet of new wharves
Reduced Fill Alternative, No Berth 100 South	130 Gross Terminal Acres	208 Annual Ship Calls	1,392,000 Annual TEUs	9 A-frame cranes	Total of 1.34 acres of fill into waters of the U.S.	Total of 2,125 linear feet of new wharves
Reduced construction and operation: Phase I construction only	72 Gross Terminal Acres	104 Annual Ship Calls	630,000 Annual TEUs	4 A-frame Cranes	Total of 1.3 acres of fill into waters of the U.S.	1,200 linear feet new wharves
Omni Cargo Terminal Alternative	142 Gross Terminal Acres	364 Annual Ship Calls	506,467 Annual TEUs; 17,987 Annual Autos (in TEUs); 5,159,570 Annual Break-Bulk Commodities (in Tons)	5 A-frame cranes	Total of 2.54 acres of fill into waters of the U.S.	Total of 2,500 linear feet of new wharves
Nonshipping Alternative: (Retail, Office, Light Industrial Land Uses)	117 Gross Acres: 277,564 ft^2 of Retail Buildings; 277,564 ft^2 of Office Buildings; 1.3 million ft^2 of Light Industrial Buildings	No Annual Ship Calls	No Annual TEUs	No A-frame cranes	1.3 acres of fill from Phase I, minor new fill into waters of the U.S.	No new wharves 1,200 feet of wharf (Phase I)

Notes: Alternative Maritime Power is not included in the alternatives involving wharf development at the China Shipping site to account for worst-case scenarios. Alternative Maritime Power is treated as mitigation, consistent with the ASJ.

[a]This table summarizes the major features of the proposed Project and alternatives.

[b]Under the No Project Alternative, the existing 1,200-foot-long wharf at the Berth 97-109 site would remain onsite, but the four existing cranes would be removed. The analysis in this Recirculated Draft EIS/EIR assumes: (1) the existing four A-frame cranes would be removed, (2) the wharf would remain in place but no ship berthing would occur, and (3) no terminal backlands beyond the existing 72 acres would be improved. Yang Ming would use 72 acres at Berth 100 as backlands. The Phase I-constructed bridge would be abandoned.

[c]Under the No Federal Action Alternative, the backlands (up to 117 acres) would be improved but the existing four A-frame cranes would be removed and (2) the wharf would remain in place but no ship berthing would occur. Yang Ming would use terminal acreage at Berth 100 as backlands. The Phase I-constructed bridge would be abandoned

[d]Throughput projection methodology is based on the Mercer and JWD reports (Section 1.1.3 and Appendix I)

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

Environmental Resource Area*	Proposed Project	Alternatives 2	3	4	5	6	7
Aesthetics	S	L	S	S	S	S	L
Air Quality/Meteorology	S	S	S	S	S	S	S
Biological Resources	S	M	S	S	S	S	M
Geology	S	S	S	S	S	S	S
Ground Transportation	M	L	M	M	M	M	S
Groundwater and Soils	M	M	M	M	M	M	M
Hazards and Hazardous Materials	L	L	L	L	L	L	M
Noise	S	S	S	S	S	S	S
Utilities and Public Services	M	M	M	M	M	M	M
Water Quality	S	L	S	S	S	S	L

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)

N = No impact

Table 6-3. Comparison of Alternatives* to the NEPA Baseline

Environmental Resource Area	Proposed Project	Alt 2	Alt 3	Alt 4	Alt 5	Alt 6	Alt 7
Aesthetics and Visual	2.0	0	1.0	1.8	0.8	1.0	0.2
Air Quality/Meteorology	1.5	0.5	1.3	1.4	1.2	2.0	-1
Biological	1.0	0.1	1.0	0.7	0.5	1.1	0.2
Geology	2.0	0	2.0	2.0	2.0	2.0	2.1
Ground Transportation	1.4	0	1.2	1.3	1.1	1.4	2.0
Groundwater and Soils	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Hazards and Hazardous Materials	0.5	0	0.3	0.4	0.2	0.1	1.0
Noise	2.0	1.2	1.8	1.8	1.2	2.0	1.2
Utilities/Public Services	0	0	0	0	0	0	1.0
Water Quality/Sediments/ Oceanography	1.8	0	1.2	1.5	1.0	2.0	0
Total	13.2	2.8	10.8	11.9	9.0	12.6	7.7

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.

(-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.

2 points for significant unmitigable impact; 1 point to significant but mitigable or less than significant impacts; and 0 for no impacts. Where significant unavoidable impacts would occur across numerous alternatives but there are impact differences between those alternatives, decimal points 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).

Under *Aesthetics*, the significant unavoidable impact would be related to the blockage of important views caused by the A-frame cranes. The proposed Project is ranked higher in impacts than Alternatives 2, 3, 4, 5, and 6 because it would have 10 A-frame cranes that affect views; whereas, Alternatives 2, 3, 4, 5, and 6 would have fewer or no A-frame cranes (Alternative 2 would have no A-frame cranes; Alternative 3 would have 5 A-frame cranes; Alternative 4 would have 9 A-Frame cranes; Alternative 5 would have 4 A-Frame cranes; and Alternative 6 would have 5 A-frame cranes). Alternative 7 would not have any cranes, but it would result in some view blockages of Port activities from the scenic highway (Front/Harbor), which would be mitigated.

Under *Air Quality*, health risk impacts to residential receptors, prior to mitigation, are used as a proxy to for evaluating the comparative impacts of the proposed Project and the alternatives. The proposed Project would result in an unmitigated project cancer risk to residential receptors of 90.0 in a million. The unmitigated residential cancer risk of the other alternatives are: Alternative 2, 0.005 in a million; Alternative 3, 63 in a million; Alternative 4, 83 in a million; Alternative 5, 52 in a million; Alternative 6, 146 in a million; and Alternative 7, less than 10 in a million. The proposed Project would result in a mitigated project cancer risk to residential receptors of 11.0 in a million. The residential cancer risk of the other alternatives are: Alternative 2, 0.005 in a million; Alternative 3, 8.2 in a million; Alternative 4, 10 in a million; Alternative 5, 6.9 in a million; Alternative 6, 88 in a million; and Alternative 7, less than 10 in a million.

Under *Biological Resources*, the significant unavoidable significant impact would be related to the potential introduction of invasive species to Harbor waters from foreign vessels and accidental spills from vessels. Alternative 6 is ranked the highest because it would have the greatest number of annual ship calls at 364, followed by the proposed Project with 234 annual ship calls, Alternative 4 with 208 annual ship calls, Alternative 3 with 130 annual ship calls, and Alternative 5 with 104 annual ship calls. The proposed Project and Alternatives 2 through 7 would significantly affect Essential Fish Habitat and soft-bottom habitat by the placement of submerged rock and hard substrate, but would be fully mitigated with measure **BIO-1**. Alternative 7 would include a public dock, and the associated biological impact would be marginally greater than the NEPA baseline.

Under *Geology*, the significant unavoidable impact would be related to potential risks of injury or property damage due to seismic activity (tsunami). Alternative 7 is ranked slightly higher than the proposed Project and other alternatives because Alternative 7 routinely would introduce visitors to the site, exposing them to remote, yet potential, seismic risks; whereas, the proposed Project and Alternatives 2 through 6 would not routinely introduce visitors to the site. Moreover, Alternative 2 would be equivalent to the NEPA baseline in terms of *Geology*.

Under *Transportation*, significant impacts at various intersections from the proposed Project and Alternatives 3 through 7 would be mitigated. Alternative 7 would result in significant but mitigable impacts to 12 intersections; the proposed Project and Alternatives 4 and 6 would result in significant but mitigable impacts to 6 intersections; Alternative 3 would result in significant but mitigable impacts to 5 intersections; and Alternative 5 would result in significant but mitigable impacts to 1 intersection. Alternative 2 would not result in intersection impacts compared to the NEPA baseline.

Under *Groundwater and Soils*, the significant impact relates to the potential to encounter contaminated soils or groundwater during construction. Although differences exist between the alternatives in terms of how much excavation is required for construction, all

potential impacts would be mitigated for all alternatives to a level that is less than significant through commonly employed mitigation activities.

Under *Hazards*, Alternative 7 impacts relate to the potential for the Regional Center to be considered a vulnerable resource that could be exposed to potential hazards from the Berth 118-120 liquid-bulk terminal. The potential impact is mitigated, and Alternative 7 is ranked slightly below the proposed Project and other alternatives. In addition, the proposed Project and Alternatives 3 through 6 would not result in significant risk impacts, but would result in risks that are slightly higher then the NEPA baseline based on higher TEU throughput. Alternative 2 would not result in truck trips and would not increase risks relative to the NEPA baseline.

Under *Noise*, the significant unavoidable impact would be related primarily to noise from construction, although operational noise is considered. The ranking in Table 6-3 reflects significant noise impacts from construction at nearby receptors under the proposed Project and Alternatives 2 through 7. The ranking also reflects significant operational impacts from the proposed Project and from Alternatives 2 through 7. Alternatives 2, 5, and 7 would result in less overall noise impact.

Under *Utilities and Public Services*, impacts relate to potential effects to solid waste capacity. Although differences exist between the alternatives in terms of how much solid waste would be generated, all impacts would be mitigated to a less than significant level. Alternative 7 potentially would affect the provision of police and fire services and water supply, which would be mitigated but would still be somewhat greater than the NEPA baseline.

Under *Water Quality*, the significant unavoidable impact related to accidental spills, illegal discharges and the leaching of contaminants from coatings on vessel hulls. Alternative 6 is ranked the highest because it has the most annual ship calls at 364, followed by the proposed Project with 234 annual ship calls, Alternative 4 with 208 annual ship calls, Alternative 3 with 130 annual ship calls, and Alternative 5 with 104 annual ship calls. Alternatives 2 and 7 are ranked the same as the NEPA baseline because they will not result in annual ship calls.

Based on the results shown in Table 6-3, the alternatives are ranked as follows, from the fewest potential environmental impacts to the most:

1. Alternative 2
2. Alternative 7
3. Alternative 5
4. Alternative 3
5. Alternative 4
6. Alternative 6
7. Proposed Project

As shown, the No Federal Action Alternative (Alternative 2) is ranked highest in terms of fewest overall environmental impacts when compared to the NEPA baseline, followed by Alternative 7. The proposed Project is ranked lowest with the most impacts of the alternatives when compared to the NEPA baseline. Alternative 6 is ranked slightly better than the proposed Project relative to the NEPA baseline. Alternatives 3, 4, and 5 are

ranked in between, with Alternatives 5 having the fewest impacts and Alternative 4 the most impacts, relative to the NEPA baseline.

6.3 CEQA Evaluation of Alternatives

6.3.1 CEQA Requirements

CEQA's requirements for an EIR to evaluate alternatives are described fully in Chapter 1, Section 1.5.7. Briefly, the California Environmental Quality Act (CEQA) Guidelines, Section 15126.6, require that 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 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, which are described in Section 2.5.

6.3.2 CEQA Alternatives Comparison

Table 6-4 presents a summary of the results of the CEQA significance analysis for the resource areas that involve significant impacts from one or more of the alternatives, 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 6-4. Summary of CEQA Significance Analysis by Alternative

Environmental Resource Area*	Proposed Project	Alternatives						
		1	2	3	4	5	6	7
Aesthetics	S	L	L	S	S	S	S	M
Air Quality/Meteorology	S	S	S	S	S	S	S	S
Biological Resources	S	M	M	S	S	S	S	M
Geology	S	S	S	S	S	S	S	S
Ground Transportation	S	L	L	S	S	S	M	S
Groundwater and Soils	M	M	M	M	M	M	M	M
Hazardous Materials & Risk	L	L	L	L	L	L	L	L
Noise	S	S	S	S	S	S	S	S
Utilities/Public Services	M	M	M	M	M	M	M	M
Water Quality	S	L	L	S	S	S	S	L

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)

N = No impact

The proposed Project and Alternatives 3 through 6 have unavoidable significant impacts in the areas of Aesthetics, Air Quality/Meteorology, Biological Resources (potential invasive species), Geology, Ground Transportation, Noise (construction), and Water Quality. Alternatives 1 and 2 would result in unavoidable significant impacts in the areas of Air Quality, Geology, and Noise. Alternative 7 would result in unavoidable significance adverse impacts in the areas of Air Quality, Geology, Ground Transportation, and Noise (construction).

Table 6-5 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 the resource areas contained in Table 6-4, 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, and the number of impacts that remain significant after mitigation.

Table 6-5. Comparison of Alternatives* to the Proposed Project

Environmental Resource Area	Alternatives						
	1	2	3	4	5	6	7
Aesthetics and Visual	-2.0	-2.0	-1.0	-0.2	-1.2	-1.0	-2.0
Air Quality/Meteorology	-1.9	-1.8	-1.0	-0.2	-1.2	2.0	-2.0
Biological	-2.0	-2.0	-1.0	-0.5	-1.4	1.0	-1.8
Geology	-1.0	-1.0	0	0	0	0	1.0
Ground Transportation	-2.0	-2.0	-0.2	0	-1.5	0	2.0
Groundwater and Soils	-1.0	-0.4	0	-0.2	-1.0	0	-0.4
Hazards	-1.2	-1.0	-0.5	-0.2	-0.6	-0.7	1.0
Noise	-2.0	-1.6	-0.5	-0.7	-1.0	-0.2	-1.2
Utilities and Public Services	-0.4	-0.4	0	-0.1	-0.2	0	0.2
Water Quality/Sediments/ Oceanography	-2.0	-2.0	-1.0	-0.5	-1.4	1.0	-1.9
Total	-15.5	-14.2	-5.2	-2.6	-9.5	2.1	-5.1

Notes:

* Alternatives eliminated from further consideration are not included.

(-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 numerous alternatives but there are impact intensity differences between those alternatives, decimal points 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).

Under *Aesthetics*, the significant unavoidable impact would be related to the blockage of important views caused by the A-frame cranes. The ranking reflects differences in blocked-view impacts between the alternatives. The proposed Project would have 10 A-frame cranes; whereas, Alternatives 1 and 2 would not have any cranes; Alternative 3 would have 5 A-frame cranes; Alternative 4 would have 9 A-frame cranes; Alternative 5 would have 4 A-frame cranes; and Alternative 6 would have 5 A-frame cranes. Alternative 7 would not have any cranes, but it would result in some view blockages of Port activities from the scenic highway (Front/Harbor), which would be mitigated.

Under *Air Quality*, health risk impacts to residential receptors, prior to mitigation, are used as a proxy to for evaluating the comparative impacts of the proposed Project and the alternatives (see Table 6-5). The proposed Project would result in an unmitigated project cancer risk of 85 in a million. The cancer risk of the other alternatives are: Alternative 1, 0.3 in a million; Alternative 2, 0.4 in a million; Alternative 3, 57 in a million; Alternative 4, 78 in a million; Alternative 5, 47 in a million; Alternative 6, 141 in a million; and Alternative 7, less than 10 in a million. The proposed Project would result in a mitigated project cancer risk of 11 in a million. The cancer risk of the other alternatives after mitigation are: Alternative 1, 0.3 in a million; Alternative 2, 0.4 in a million; Alternative 3, 8.4 in a million; Alternative 4, 11 in a million; Alternative 5, 7.1 in a million; Alternative 6, 83 in a million; and Alternative 7, less than 10 in a million.

Under *Biological Resources*, the significant unavoidable significant impact would be related to the potential introduction of invasive species to Harbor waters from foreign vessels and accidental spills from vessels. The ranking in Table 6-5 reflects the annual ship calls associated with each alternative relative to the proposed Project. Alternative 6 would have the most annual ship calls at 364, followed by the proposed Project (234 annual ship calls), Alternative 4 (208 annual ship calls), Alternative 3 (130 annual ship calls), and Alternative 5 (104 annual ship calls. Alternatives 1 and 2 would not have any annual ship calls. Alternative 7 would accommodate only recreational watercraft.

Under *Geology*, the significant unavoidable impact would be related to potential risks of injury or property damage due to seismic activity. Alternative 7 is deemed to have greater potential seismic risks compared to the proposed Project and other alternatives because it routinely would introduce visitors to the site, exposing them to potential seismic risks. Alternatives 1 and 2 are deemed to have slightly lower risks than the proposed Project because they would have not crane structures.

Under *Ground Transportation*, the potential mitigable impacts relate to reduced volume-to-capacity at various intersections. Alternative 7 would result in significant impacts to 12 intersections and I would remain significant after mitigation; the proposed Project, Alternative 4, and Alternative 6 would result in significant but mitigable impacts to 6 intersections; Alternative 3 would result in significant but mitigable impacts to 5 intersections; and Alternative 5 would result in significant but mitigable impacts to 1 intersection. Alternatives 1 and 2 would not result in additional trip generation, so they are ranked slightly higher.

Under *Groundwater and Soils*, impacts primarily relate to the potential to encounter existing subsurface contamination during construction. Alternatives 3 and 6 have the same size site as the proposed Project (142 acres). Alternative 4 has a slightly small site size (130 acres) than the proposed Project. Alternatives 2 and 7 would also have a smaller site size (117 acres) than the proposed Project. Alternatives 1 and 5 have the smallest site size, at 72 acres. Although there are differences between the alternatives in terms of how much excavation is required for Project construction, all impacts would be mitigated to a less than significant level. Alternatives 1 and 5 would not require additional subsurface construction so they are ranked slightly higher.

Under *Hazards*, Alternative 7 impacts would be related to the potential for the Regional Center to be considered a vulnerable resource that could be exposed to potential hazards from the Berths 118-120 liquid-bulk terminal. The potential impact would be mitigated so Alternative 7 is ranked slightly below the proposed Project and other alternatives. Alternatives 3 through 6 would handle different amounts of containers that may contain hazardous materials, so these alternatives are ranked based on throughput. Alternatives 1

and 2, which only would provide for supplemental storage for another container terminal, would not result in new annual TEU throughput.

Under *Noise*, the significant unavoidable impact would be related primarily to construction; however, traffic noise from operation would result in some noise impacts. The ranking in Table 6-5 reflects significant noise impacts from construction receptors in up to two areas (Knoll Hill and Pacific Avenue/Front Street) under the proposed Project and Alternatives 1 through 7. The ranking also reflects significant operational impacts under all Project alternatives, except Alternatives 1 and 2.

Under *Utilities and Public Services*, impacts would be related to potential effects to solid waste capacity. Although differences exist between the alternatives in terms of how much solid waste would be generated, they would all exceed solid waste capacity beyond 2030 if additional landfill capacity is not made available. The solid waste impacts would be mitigated to a less than significant level.

Under *Water Quality*, the significant unavoidable impact would be related to accidental spills, illegal discharges and the leaching of contaminants from coatings on vessel hulls. The ranking in Table 6-5 reflects the annual ship calls associated with each alternative relative to the proposed Project. Alternative 6 would have the most annual ship calls with 364, followed by the proposed Project (234 annual ship calls), Alternative 4 (208 annual ship calls), Alternative 3 (130 annual ship calls), and Alternative 5 (104 annual ship calls).

As shown in Table 6-5, Alternative 1 (the No Project Alternative) ranks as the environmentally superior alternative. However, the CEQA Guidelines (Section 15126) specify that when the No Project Alternative is the environmentally superior alternative, the EIR also shall identify an environmentally superior alternative among the other alternatives. Alternative 2 is ranked the second highest compared to the No Project Alternative. As such, Alternative 2 would be the environmentally superior alternative. Alternative 2 does not achieve the Project objectives.

- Regarding the objectives to maximize the use of existing land and waterways and be consistent with the overall use of available shoreline, and accommodate foreseeable containerized cargo volumes through the Port, Alternative 2 would not accomplish this goal because it would serve only as supplemental backlands to an existing container terminal and would not accommodate projected future TEUs. In addition, Alternative 2 would not include wharf operations; therefore, it would not optimize the use of waterways.

- Regarding the objective to increase container-handling efficiency and to create sufficient backland area for container terminal operations, including storage, transport, and on/offloading of container ships in a safe and efficient manner, Alternative 2 would slightly improve the terminal efficiency of the Berth 121-131 Container Terminal by allowing that terminal to operate more wheeled containers. However, this increase in efficiency would be minimal compared to the overall container-handling efficiency improvements that would occur if the proposed Project were implemented. Because of this, Alternative 2 is deemed to slightly increase existing container-handling efficiency but would do nothing to maximize or even improve Portwide container-handling efficiency.

- Regarding the objective to improve or construct container ship berthing and infrastructure capacity where necessary to accommodate projected containerized

cargo volumes through the Port, Alternative 2 would not achieve this objective because it would not accommodate any projected future TEUs.

- Regarding the objective to provide access to land-based rail and truck infrastructure locations capable of minimizing surface transportation congestion or delays while promoting conveyance to local and distant cargo destinations, Alternative 2 would not handle any projected future TEUs; therefore, it would not achieve this objective.
- Regarding the objective to provide needed container terminal accessory buildings and structures to support containerized cargo-handling requirements, Alternative 2 would only create new backlands to supplement existing container terminal operations (at Berths 121-131) and would not achieve this objective.

6.4 Analysis of Impacts of Alternatives

For each of the 14 environmental resource areas analyzed in this Recirculated Draft EIS/EIR, Chapter 3 identifies significant impacts associated with each of the project alternatives. Seven of the environmental resources evaluated (aesthetics, air quality; biological resources, geology, transportation/circulation, noise, and water quality) have unavoidable significant impacts for at least one alternative. Three of the environmental resources evaluated (Groundwater and Soils, Hazards and Hazardous Materials, and Utilities and Public Services) have significant impacts that could be mitigated to a less than significant level for all of the alternatives. The remaining resources have no potentially significant impacts associated with any of the 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 6-4 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 14 environmental resource sections in Chapter 3.

6.4.1.1 Aesthetics

The proposed Project and Alternatives 3 through 6 would have unavoidable significant aesthetic impacts related to the placement of A-frame cranes at the wharves, which would result in the blockage or deterioration of views of the Vincent Thomas Bridge. The proposed Project would have 10 cranes; whereas, Alternatives 1 and 2 would not have any, Alternative 3 would have 5 A-frame cranes; Alternative 4 would have 9 A-frame cranes; Alternative 5 would have 4 A-frame cranes; and Alternative 6 would have 5 A-frame cranes.

Alternative 7 would not have any cranes, but it would result in some blockages of views of Port activities from the scenic highway (Front/Harbor), which can be mitigated.

Although Alternatives 1 and 2 would have some terminal activities related to the management of containers on the site from the adjacent Yang Ming terminal, these alternatives would not have A-frame cranes that could block or deteriorate views of the Vincent Thomas Bridge. From an aesthetic standpoint, Alternative 1 or Alternative 2 would be preferable to the other alternatives.

The proposed Project, in conjunction with A-frame cranes from other related projects, including the Yang Ming terminal, would result in significant cumulative aesthetic impacts related to the blockage or deterioration of views. See Section 3.1 and Chapter 4.0 for more information on cumulative impacts.

6.4.1.2 Air Quality and Meteorology

The proposed Project and all of the alternatives would have significant air quality impacts related to emissions of VOC, CO, NO_X, SO_X, PM_{10}, and $PM_{2.5}$ during Phase I construction. For Phase I construction, which is either part of the alternative or applied to the alternative, no mitigation measures were implemented, and, thus, the proposed Project and all alternatives have unavoidable significant adverse criteria pollutant impacts. For the proposed Project and Alternatives 2, 3, 4, 6, and 7, implementation of mitigation measures would not reduce peak daily construction emissions (from Phase II) of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ to below their respective significance thresholds (Section 3.2). For the proposed Project and Alternatives 3, 4, 6, and 7, implementation of mitigation measures would not reduce peak daily construction emissions (from Phase III) of NO_X, SO_X, PM_{10}, and $PM_{2.5}$ to below their respective significance thresholds (Section 3.2).

In addition to the above, criteria pollutant construction emissions from the proposed Project and all alternatives would result in significant unavoidable localized exceedances of the pollutant concentrations of NO_2 and PM_{10}(due to Phase I) thresholds established by SCAQMD. Construction subsequent to Phase I, would not result in significant pollutant concentrations under the proposed Project and Alternatives 2, 3, 4, 6, and 7 after mitigation. Alternatives 1 and 5 would have Phase I construction only.

The proposed Project and Alternatives 3 through 6 would have significant unavoidable operational air quality impacts (Section 3.2) from the emission of VOC, CO, NO_X, SO_X, $PM_{10,}$ and $PM_{2.5}$. For the proposed Project and Alternatives 3 through 6, implementation of identified mitigation measures would not reduce peak daily operational emissions of VOC, CO, NO_X, SO_X, $PM_{10,}$ and $PM_{2.5}$ to below their respective SCAQMD significance thresholds during some or all of the future project years. Alternatives 1 and 2 would have significant unavoidable operational air quality impacts (Section 3.2) from the emission of VOC, CO, NO_X, SO_X, and $PM_{2.5}$. Alternative 7 (Nonshipping Alternative) would result in significant unavoidable operational air quality impacts of VOC, CO, and PM_{10}.

In addition to the above, criteria pollutant operational emissions from the proposed Project and Alternatives 3 through 6 would result in significant unavoidable localized exceedances of the pollutant concentrations (NO_2, PM_{10}, and $PM_{2.5}$) established by SCAQMD. Alternative 1 would result in significant unavoidable localized exceedances of the NO_X concentrations. Alternative 2 would result in significant unavoidable localized exceedances of the NO_X and PM_{10} concentrations. Alternative 7 would result in significant unavoidable localized exceedances of the PM_{10} and $PM_{2.5}$ concentrations.

Operation of the proposed Project and Alternatives 4 and 6 would result in increased exposure of residential receptors to increased incremental cancer risk in excess of the threshold level (after mitigation). These air quality impacts are considered significant, adverse, and unavoidable under CEQA. Operation of Alternatives 1 and 2 would result in some increases in cancer risk to residential receptors associated with yard equipment, but these levels would not be significant. Alternative 7 operations would not generate yard equipment emissions and would not result in significant health risks to residential receptors. Alternatives 2 and 5 would involve less intensive container terminal

operations than the proposed Project and would not result in significant health risk impacts to residential receptors after mitigation.

The proposed Project and Alternatives 1 through 7 would produce greenhouse gases (GHG) at levels above the CEQA baseline (2001) despite mitigation measures, and those increases are considered significant under CEQA. The proposed Project and Alternatives 3 through 7 would also have GHG emissions exceeding the NEPA baseline and the No Federal Action Alternative. In this document, however, the significance of GHG emissions under NEPA is not evaluated (see Section 3.2.2.2). Greenhouse gases 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 Nonshipping Alternative is considered to the environmentally superior because it would result in the lowest overall operational emissions and would most likely result in the lowest increase in health risks. The No Project and No Federal Action Alternatives would involve the transport of containers only between Berths 121-131 and Berths 97-109 and would also have low operational impacts. The proposed Project and Alternatives 3 through 5 are similar in regard to operational air quality impacts due to similarities in container terminal operations (the difference in ranking under *Air Quality* reflects differing cancer risks, although all are significant). The proposed Project and Alternative 6 have the highest short-term construction impacts because they would construct the greatest amount of backlands and wharves. Alternative 6 would result in the highest cancer risk to residential receptors.

Construction and operation of the proposed Project, in conjunction with construction and operation of other related projects, would result in significant cumulative impacts to air quality. Operation of the proposed Project would contribute to cumulative health risk impacts. See Section 3.2 and Chapter 4.0 for more cumulative impact information.

6.4.1.3 Biological Resources

The proposed Project and Alternatives 3 through 6 would have significant impacts on biological resources. Those impacts are the result of the possibility for the introduction of invasive species into the Southern California coastal marine ecosystem, and potential impacts to biological resources from accidental spills from vessels. The amount of unauthorized ballast water discharged into the West Basin and, thus, the potential for introduction of invasive exotic species (LAHD, 1999) could increase since more and larger container ships would use the Port as a result of the proposed Project and Alternatives 3 through 6. Approximately 40 percent of the vessels calling at the terminal would be loading cargo and, thus, would need to discharge ballast water. These vessels would come primarily from outside the EEZ and would be subject to regulations to minimize the introduction of non-native species in ballast water (see Section 3.3.3.8), such as not exchanging ballast water within ports or discharging to approved receivers. However, even with such regulations in place, there is a chance that exotic species may be introduced. This impact remains significant and unavoidable under CEQA and NEPA.

Another potential source of invasive species is the fouling community (a variety of attached animals, as well as algae) on the undersides of ships. Because there are no feasible measures for preventing such organisms from entering the waters of the ports where international cargo vessels call, the potential for the introduction of invasive species represents a significant, unavoidable impact under CEQA and NEPA for the

proposed Project and Alternatives 3 through 6. From a biological perspective, Alternatives 1 (No Project), 2 (No Federal Action), and 7 are environmentally superior to the other alternatives because Alternatives 1, 2, and 7 have minimal, if any, potential to introduce invasive species.

Operation of the proposed Project and Alternatives 3 through 6 would result in an increased potential for fuel spills from container vessels into Harbor or ocean waters, which, while a remote possibility, could still affect biological resources. Because container vessels contain large amounts of fuel, an accidental spill could result in significant unavoidable impacts to biological resources under CEQA and NEPA despite measures required under existing regulations. From a vessel spill standpoint, Alternatives 1 (No Project), 2 (No Federal Action), and 7 are environmentally superior to the other alternatives because these alternatives would not utilize large oceangoing vessels that could release fuels into Harbor or ocean waters in the event of an accident.

Operation of the proposed Project and Alternatives 3 through 6, in conjunction with operation of other related projects, such as terminals that would result in increased ship calls to the Harbor waters, would result in significant cumulative impacts to biological resources related to increased potential to introduce invasive species to Harbor waters. See Section 3.3 and Chapter 4.0 for more information on cumulative impacts.

6.4.1.4 Geology

For the proposed Project and all 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 and NEPA for the proposed Project and all of the proposed alternatives.

From a geological perspective, Alternatives 1 and 2 are the environmentally preferred alternatives because they would minimize the activities, structures, and/or people that could occur on site that would be potentially subjected to seismic hazards. The proposed Project introduces some additional seismic risk because a higher level of container terminal intensity would occur. Alternatives 3 through 6 are ranked similar to the proposed Project because they would have similar activities and structures. Alternative 7 would have a higher level of risk from a geotechnical perspective because it would result in more persons on the site that are subject to seismic risks.

The proposed Project, in conjunction with other related projects, would result in various improvements to terminals and their operations throughout the Port. Because the risks of injury at each individual related project cannot be completely precluded even with incorporation of modern design features and construction engineering and safety standards, the proposed Project has the potential to result in significant cumulative impacts related to unavoidable increases in risks of injury in the Port area. See Section 3.5 and Chapter 4 for more cumulative impact information.

6.4.1.5 Ground Transportation

Alternative 7 would significantly affect 12 intersection prior to mitigation. Following implementation of Mitigation Measures **MM TRANS-4** through **TRANS-14** (see

Section 3.6), Alternative 7 would have significant and unavoidable transportation impacts after mitigation at the following intersections by 2045:

- Figueroa Street and Harry Bridges Boulevard
- Harbor Boulevard and Swinford Street
- John S. Gibson Boulevard and I-110 NB ramps
- Fries Avenue and Harry Bridges Boulevard

6.4.1.6 Noise

Significant noise impacts under CEQA on sensitive receivers in the Knoll Hill, Pacific Avenue/Channel Street, and Front Street neighborhoods would occur during the construction of the proposed Project and all alternatives (from Phase I construction). Subsequent construction for the proposed Project and Alternatives 2, 3, 4, 6, and 7 would result in unavoidable noise impacts to these areas. Alternatives 1 and 5 would result in the least unavoidable construction impacts because no further construction phases would occur. Alternatives 3 and 4 would involve subsequent construction, but would have less wharf-related construction than the proposed Project or Alternative 6; however, each of these three alternatives would require pile driving in subsequent phases. Alternative 2 would generate unavoidable noise impacts from additional backland construction but would not generate noise from pile driving.

From an operational noise perspective, the proposed Project and Alternatives 3 and 4 would result in significant unavoidable operational noise to receptors in the Knoll Hill and Front Street areas. Alternatives 5 through 7 would result in significant unavoidable operational noise impacts to receptors in the Front Street area. Alternatives 1 and 2 would not generate significant noise impacts, and consequently, the No Project Alternative and No Federal Action Alternative would be environmentally preferable. After these alternatives, Alternative 5 (Phase I Terminal Only) would be ranked next in terms of environmental preferability, followed by Alternatives 7, 3, 4, 6, and the proposed Project. The proposed Project would be ranked the worst from a noise perspective because it would generate the greatest level of unavoidable construction noise impacts and operational impacts (with the highest throughput of the alternatives).

6.4.1.7 Water Quality

The proposed Project and Alternatives 3 through 6 would have significant impacts on water quality related to the potential to for accidental in-water spills, illegal discharges and from the leaching of contaminants from vessel hulls. Vessel hulls are painted with anti-fouling coatings to prevent algae and marine species from adhering to the hulls. However, the hull coatings are known to leach metals (copper) and TBT into the surrounding water (see Section 3.3 for further details. The potential for operations to result in water quality impacts from accidental spills or leaching is related to the number of ship calls associated with the alternatives. Alternative 6 would have the most annual ship calls at 364, followed by the proposed Project (234 annual ship calls), Alternative 4 (208 annual ship calls), Alternative 3 (130 annual ship calls), and Alternative 5 (104 annual ship calls. Accidental spills and leaching are significant and unavoidable under NEPA and CEQA. Alternatives 1, 2, and 7 would not result in ship calls that could leach contaminants into Harbor waters, although Alternative 7 would accommodate small recreational watercraft. These alternatives are not expected to result in significant water quality impacts.

Operation of the proposed Project, in conjunction with operation of other related projects such as terminals that result in increased ship calls to the Harbor waters, would result in significant cumulative impacts to water quality related to increased potential to cumulative or additive accidental spills and pollutant leaching from vessel hulls. See Section 3.14 and Chapter 4.0 for more cumulative impact information.

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

6.4.2.1 Aesthetics

Alternative 7 would have a significant impact on the Harbor Scenic Route by related to view blockages of a working Port. However, this impact would be mitigated. None of the other alternatives would result in a similar impact.

6.4.2.2 Biological Resources

The proposed Project and Alternatives 1 through 7 would result in significant impacts to Essential Fish Habitat and soft-bottom habitat that would be fully mitigated by the application of offsets with mitigation bank credits (**MM BIO-1**). It should be noted that Alternatives 1, 2, and 7 would result in such impacts solely because the Phase I in-water construction that occurred for the proposed Project (as allowed by the ASJ and federal Settlement Agreement) has been applied to these alternatives (i.e., these activities legally occurred already). The impacts to biological resources from Phase I fill already have been fully mitigated.

6.4.2.3 Ground Transportation

Neither the proposed Project nor any of the alternatives would have significant traffic impacts during the construction phase.

During operations, Alternative 7 would result in significant but mitigable impacts to 9 intersections. The proposed Project, Alternative 4, and Alternative 6 would result in significant but mitigable impacts to 6 intersections; Alternative 3 would result in significant but mitigable impacts to 5 intersections; and Alternative 5 would result in significant but mitigable impacts to 1 intersection.

Alternative 7 would have significant but mitigable transportation impacts at the following 9 intersections by 2045:

- Avalon Boulevard and Harry Bridges Boulevard
- Alameda Street and Anaheim Street
- Harbor Boulevard and SR-47 WB on-ramp
- Figueroa Street and C-Street/I-110 ramps
- Pacific Avenue and Front Street
- Neptune Avenue and Harry Bridges Boulevard
- John S. Gibson Boulevard and Channel Street

- Broad Avenue and Harry Bridges Boulevard
- Navy Way and Seaside Avenue

These impacts would be mitigated to a less than significant level with the implementation of **MM TRANS-4** through **MM TRANS-6** (see Section 3.6).

The proposed Project, Alternative 4, and Alternative 6 would have significant but mitigable transportation impacts at the following six intersections by 2045:

- Avalon Boulevard and Harry Bridges Boulevard
- Alameda Street and Anaheim Street
- John S. Gibson Boulevard and I-110 NB ramps
- Fries Avenue and Harry Bridges Boulevard
- Broad Avenue and Harry Bridges Boulevard
- Navy Way and Seaside Avenue

All of these impacts would be mitigated to a less than significant level with the implementation of mitigation measures **MM TRANS-1** through **MM TRANS-6** (see Section 3.6).

Alternative 3 would have significant but mitigable transportation impacts at the following five intersections by 2045:

- Avalon Boulevard and Harry Bridges Boulevard
- Alameda Street and Anaheim Street
- John S. Gibson Boulevard and I-110 NB ramps
- Fries Avenue and Harry Bridges Boulevard
- Broad Avenue and Harry Bridges Boulevard

All of these impacts would be mitigated to a less than significant level with the implementation of **MM TRANS-1** through **MM TRANS-5** (see Section 3.6).

Alternative 5 would have significant but mitigable transportation impacts at the following intersection by 2045:

- Fries Avenue and Harry Bridges Boulevard – (a.m. and p.m. peak hours)

Impacts would be mitigated to a less than significant level with the implementation of **MM TRANS-4** (see Section 3.6).

The No Project Alternative and the No Federal Action Alternative would not result in new trip generation (see Section 2.5 for further information on these alternatives) and, therefore, would not result in traffic impacts.

Alternative 7 is the environmentally least desirable alternative from a ground transportation perspective due to the greatest number of affected intersections (12) and significant unavoidable impacts at several intersections after mitigation. The proposed Project and Alternatives 3 through 6 include mitigation measures that would reduce potentially significant impacts to less than significant impacts (Section 3.6). The No Project and the No Federal Action Alternatives would be environmentally preferable from a ground transportation perspective.

From a cumulative impact perspective, long-term operation of the proposed Project and any of the alternatives, in combination with other projects (and in particular the other West Basin Terminal projects) and other sources of local and regional growth, would result in significant cumulative impacts by degrading the LOS at some intersections to unacceptable levels (see Section 3.6 and Chapter 4).

6.4.2.4 Groundwater and Soils

Under *Groundwater and Soils*, impacts would be related to the potential to encounter existing subsurface contamination during construction. Although there are differences between the alternatives in terms of how much excavation is required for project construction, all impacts would be mitigated to a less than significant level through the application of common mitigation measures described in Section 3.7.

Alternatives 1 and 2 would be slightly preferable from the groundwater and soils perspective; however, the preference is slight due to the application of routine mitigation.

The proposed Project, in conjunction with other related projects, would not result in significant cumulative groundwater or soils impacts (see Section 3.7 and Chapter 4.0 for more cumulative impact information).

6.4.2.5 Hazards and Hazardous Materials

Under *Hazards,* Alternative 7 impacts are related to the potential for the Regional Center to be considered a vulnerable resource that could be exposed to potential hazards from the Berth 118-120 liquid bulk terminal. If there is a rupture at that terminal, there could be effects on the portion of the project site closest to the Southwest Slip. This potential impact would be mitigated to a less than significant level by applying **MM HAZ-1**, as described in Section 3.8.

From a hazards perspective, Alternative 7 is considered the least environmentally preferable due to the potential to introduce vulnerable resources to hazards (see Section 3.8 for further details). Although neither the proposed Project nor the container terminal alternatives would result in significant impacts, Alternatives 1 and 2 are considered environmentally preferable because they would not result in new container throughput that could contain hazardous materials.

The proposed Project, in conjunction with other related projects, would not result in significant cumulative hazard or hazardous materials-related impacts (see Section 3.8 and Chapter 4.0 for more cumulative impact information).

6.4.2.6 Utilities and Public Services

Under *Utilities and Public Services*, potential impacts to solid waste capacity could occur. Although there are differences between the alternatives in terms of how much solid waste would be generated, the impacts would be mitigated to a less than significant level with **MM PS-1** through **PS-3**.

Alternative 7 would result in additional mitigable impacts to fire and police services and to water supply, but these impacts would be mitigated to a less than significant level (see Section 3.13). Additionally, Alternative 7 would generate the most solid waste. Alternatives 1 and 5 are considered environmentally preferable because they would generate the least amount of solid waste of the alternatives, followed by Alternative 2.

Alternative 7 would result in additional mitigable impacts to fire and police services and to water supply, but these impacts would be mitigated to a less than significant level (see Section 3.13) with measures **MM PS-4** through **MM PS-6**.

The proposed Project, in conjunction with other related projects, would not result in significant cumulative impacts to law enforcement services, fire protection services, utility lines, wastewater, water or energy capacity. However, it could make a cumulatively considerable contribution to a significant cumulative impact to solid waste capacity if additional capacity is not made available after 2030 (see Section 3.13 and Chapter 4.0 for more information on cumulative impacts).

6.5 Environmentally Preferred and Superior Alternatives

Under the NEPA analysis, the No Federal Action Alternative (Alternative 2) 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 Alternative (Alternative 2) is the environmentally superior alternative.

Under the No Federal Action Alternative, Phase I construction is applied, but no additional in-water development or construction would occur (i.e., no additional dredging, dike or fill placement, pile installation, or wharf construction), although backlands development would occur. Phase I has been applied to Alternatives 1, 2, and 7 because these alternatives would use portions of the Phase I elements or the same site as the legally constructed Phase I terminal. These three alternatives would result in in-water impacts beyond those included in the NEPA baseline solely because in-water impacts under Phase I are being applied to these alternatives. As a consequence, these alternatives result in impacts to the soft-bottom marine habitat from rock and fill placement, but the impacts have been mitigated. The backland acreage and terminal use under the No Federal Action Alternative would be the same as the NEPA baseline conditions. All other alternatives result in greater impacts than the No Project Alternative (the No Project Alternative is only considered under CEQA) and the No Federal Action Alternative; therefore, the No Federal Action Alternative would result in the fewest impacts under NEPA because its environmental conditions would be the closest to those of the NEPA baseline.

However, although the No Federal Action Alternative (Alternative 2) would result in fewer unavoidable significant adverse impacts or mitigated impacts than the proposed Project or Alternatives 3 through 7, it would not meet the Project's stated needs under NEPA to maximize container efficiency and container backlands, optimize and increase accommodations for container ship berthing, or provide optimized truck-to-rail container movements (see Section 2.3.2). Nor would the No Project Alternative. In addition, neither Alternative 1 nor Alternative 2 would address the need to construct sufficient berthing and infrastructure capacity to accommodate foreseeable increases in containerized cargo, or provide the accessory buildings and structures at the terminal to support the anticipated container-handling requirements. Although Alternative 1 and Alternative 2 would include backland operations by serving as supplemental container storage for the adjacent Berths 121-131 Container Terminal, the Berth 121-131 Container Terminal is berth limited, and additional backlands would simply improve efficiency and not affect the ultimate capacity of the Berth 121-131 terminal. Because of this, neither

the No Project Alternative nor the No Federal Action Alternative would meet the stated needs to maximize container efficiency and container backlands, optimize and increase accommodations for container ship berthing, or provide optimized truck-to-rail container movements (see Section 2.3.2). Therefore, they are not considered to be viable project alternatives that could achieve the project objectives. It should be noted that even if terminal capacity were maximized throughout the Port, there would still be a shortfall in meeting future throughput demand.

The Reduced Fill, No Berth 102 Wharf Alternative (Alternative 3) would result in fewer environmental impacts than the proposed Project due to less wharf length (1,575 feet compared to 2,500 feet for the proposed Project) and a substantially lower annual throughput (936,000 annual TEUs compared to 1.55 million annual TEUs for the proposed Project). Although Alternative 3 would have less wharf length than the proposed Project, it would result in the same loss of 2.54 acres of soft-bottom habitat as the proposed Project. Operationally, Alternative 3 would increase the number of vessel calls relative to the NEPA baseline by 130 annual ship calls but would decrease the number of ship calls compared to the 234 annual ship calls of the proposed Project. Given the Project purpose, Alternative 3 would not support the projected increase in throughput demand, would not maximize container-handling capacity in the West Basin and at the Project site, and would not make the best use of the Project site as a water-dependent use. As a result, the proposed Project would better accomplish the Project goals and objectives compared to Alternative 3.

The Reduced Fill, No Berth 100 Southern Wharf Extension Alternative (Alternative 4) would result in slightly fewer environmental impacts than the proposed Project due to less wharf length (2,125 feet compared to 2,500 feet for the proposed Project) and a slightly lower annual throughput (1,392,000 annual TEUs compared to 1.55 million annual TEUs for the proposed Project). Operationally, Alternative 4 would increase the number of vessel calls relative to the NEPA baseline by 208 annual ship calls but would decrease the number of ship calls compared to the 234 annual ship calls of the proposed Project. Alternative 4 would handle approximately 10 percent fewer TEUs than the proposed Project and reduce the loss of soft-bottom habitat by approximately 50 percent compared to the proposed Project. Although Alternative 4 provides almost as much throughput as the proposed Project with approximately half the loss of soft-bottom habitat as the proposed Project, there is a need to maximize terminal capacity to meet anticipated container demand in the Port, given the shortfall in container terminal capacity projected by 2030. As discussed in Section 1.1.3, the Port of Los Angeles anticipates that approximately 17.6 million TEUs could come through the Port of Los Angeles in 2020, and up to 31.6 million TEUs by 2030. Capacity modeling of container terminals at the Port shows that even with the expansion and modernization of terminals that were assumed, including the proposed Project, throughput at the Port will be constrained at 22.4 million TEUs starting approximately in 2030. As a consequence, a significant shortfall in the capacity of the container terminal in the Port of Los Angeles is expected and there is a need to maximize and optimize capacity at all terminal sites in the Port. However, given that all soft-bottom habitat losses would be fully mitigated through the application of mitigation bank credits, and given the need to meet the Project objective to establish and maximize the cargo-handling efficiency and capacity at Berths 97-109 in the West Basin to address the need to optimize Port lands and terminals for current and future containerized cargo handling, Alternative 4 would not result in substantially fewer environmental impacts but would result in decreased container-handling capacity compared to the proposed Project. As a consequence, the proposed

Project would better accomplish the Project goals and objectives than would Alternative 4.

The Reduced Construction and Operation: Phase I Construction Only Alternative (Alternative 5) would result in slightly fewer environmental impacts than the proposed Project due to less wharf length (1,200 feet compared to 2,500 feet for the proposed Project) and a substantially lower annual throughput (630,000 annual TEUs compared to 1.55 million annual TEUs for the proposed Project). Alternative 5 would result in the loss of 1.3 acres of soft-bottom habitat, which is greater than the NEPA baseline (no loss of soft-bottom habitat) but less than the loss under the proposed Project (2.54-acre loss of soft-bottom habitat). Operationally, Alternative 5 would increase the number of vessel calls relative to the NEPA baseline by 104 annual ship calls, but would result in fewer ship calls compared to 234 annual ship calls of the proposed Project. Given the project purpose, Alternative 5 would not support the predicted increase in throughput demand, would not maximize container-handling capacity in the West Basin and at the Project site, and would not make the best use of the Project site as a water-dependent use. As a result, the proposed Project would better accomplish the Project goals and objectives compared to Alternative 5.

The Omni-Cargo Alternative (Alternative 6) would result in approximately the same or slightly greater environmental impacts than the proposed Project because it would have the same terminal size (142 acres) and the same wharf length (2,500 feet) as the proposed Project. However, Alternative 6 would have different operational characteristics than the proposed Project. Annual container throughput under Alternative 6 (506,467) would be substantially lower than the proposed Project, but because it would also accommodate break-bulk cargo and automobiles, it would result in greater annual ship calls than the proposed Project (Alternative 6 would result in 364 annual ship calls). Alternative 6 would result in the loss of 2.54 acres of soft-bottom habitat, which is greater than the NEPA baseline (no loss of soft-bottom habitat) but the same amount as the proposed Project. Although Alternative 6 would also handle other cargo, automobiles and break-bulk commodities, the projected terminal capacity shortfall applies to container terminal capacity, not bulk commodities. Therefore, given the project purpose, Alternative 6 would provide substantially less container throughput than the proposed Project while resulting in the same or slightly higher operational impacts. As a result, the proposed Project would better accomplish the Project goals and objectives compared to Alternative 6.

The Nonshipping Alternative (Alternative 7) would result in fewer environmental impacts than the proposed Project because it would have fewer in-water impacts associated with the abandoned Phase I wharf compared to 2,500 feet of wharf for the proposed Project, and no annual throughput or associated activities. Because Alternative 7 would not accommodate any container throughput and would actually prevent a water-dependent use that would support cargo handling at the project site, it would not achieve any of the project goals. As a result, the proposed Project would better accomplish the Project goals and objectives compared to Alternative 7.

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