4

CUMULATIVE ANALYSIS

4.1 Introduction

4.2 Cumulative Impact Analysis

The following sections analyze the cumulative impacts identified for each resource area.

4.2.2 Air Quality and Meteorology

4.2.2.1 Scope of Analysis

The region of analysis for cumulative effects on air quality is the South Coast Air Basin (SCAB). However, the highest project impacts would occur within the communities adjacent to the proposed Project Berths 136-147 Terminal, including San Pedro, Wilmington, and Long Beach.

4.2.2.9 Cumulative Impact AQ-8: Potential Contribution to Global Climate Change – Cumulatively Considerable and Unavoidable

Cumulative Impact AQ-8 represents the potential of the proposed Project along with other cumulative projects to contribute to global climate change.

Impacts of Past, Present, and Reasonably Foreseeable Future Projects

The cumulative increase in GHG concentrations in the atmosphere has resulted in and will continue to result in increases in global average temperature and associated shifts in climatic and environmental conditions. Multiple adverse environmental effects are attributable to global climate change, such as sea level rise, increased incidence and intensity of severe weather events (e.g., heavy rainfall, droughts), shrinking glaciers, thawing permafrost, shifts in plant and animal ranges, and extirpation or extinction of plant and wildlife species. These and other effects would have environmental, economic, and social consequences on a global scale. Given the

significant adverse environmental effects linked to global climate change induced by GHGs, the emission of GHGs is considered a significant cumulative impact. Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors (California Energy Commission 2006a). Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth.

Contribution of the Proposed Project (Prior to Mitigation)

The challenge in assessing the significance of an individual project's contribution to global GHG emissions and associated global climate change impacts is to determine whether a project's GHG emissions—which are at a micro-scale relative to global emissions—result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. CO_2 emissions in California totaled approximately 477.77 million metric tons in year 2003 (CEC, 2006). The Project would produce higher GHG emissions in each future project year, compared to 2003 levels (CEQA baseline): 76,829 metric tons in 200~~7~~8, 319,931 in 2015, 467,846 in 2025, and 468,116 in 2038. Any concurrent emissions-generating activity would add additional emission burdens to these significant levels. As a result, without mitigation, emissions from construction and operation would produce cumulatively considerable contributions to global climate change under CEQA. No significance determination has been made for NEPA.

Mitigation Measures and Residual Cumulative Impacts

After mitigation, the proposed Project is estimated to produce the following GHG emissions above 2003 levels (CEQA baseline): 76,829 in 2007, 264,291 in 2015, 394,102 in 2025, and 394,372 in 2038 (Table 3.2-24). The way in which CO_2 emissions associated with the project might or might not influence actual physical effects of global climate change cannot be determined. For these reasons, it is uncertain whether emissions from the proposed Project would make a significant contribution to the impact of global climate change when considered with the emissions generated by human activity. Nevertheless, because Project GHG emissions would contribute to the causes of global climate change, the cumulative impact of the project is considered significant and unavoidable under CEQA. No significance determination has been made for NEPA.

4.2.13 Water Quality, Sediments, and Oceanography

4.2.13.1 Scope of Analysis

The geographic scope for cumulative impacts on water and sediment quality is the Los Angeles-Long Beach Harbor (inner and outer harbor areas) because this water body represents receiving waters for the cumulative projects. The geographic scope for surface water hydrology and flooding is the proposed Project backlands and

immediately adjacent lands within the Harbors' subwatershed, because this represents the drainage area that would be influenced by the proposed Project and other cumulative projects.

The significance criteria used for the cumulative analysis are the same as those used for the proposed Project in Section 3.13.4. These criteria are the same for both CEQA and NEPA impact analyses.

4.2.13.2 Cumulative Impact WQ-1: Cumulative Discharge Effects to Water and Sediment Quality – Cumulatively Considerable and Unavoidable

Cumulative Impact WQ-1 represents the potential of the proposed Project, along with other cumulative projects, to create pollution, cause nuisances, or violate applicable standards.

Impacts of Past, Present, and Reasonably Foreseeable Future Projects

Water and sediment quality within the geographic scope are affected by activities within the harbor (e.g., shipping and wastewater discharges from the Terminal Island Treatment Plant [TITP]), inputs from the watershed including aerial deposition of particulate pollutants, and effects from historical (legacy) inputs to the harbor. As discussed in Section 3.13, portions of the Los Angeles/Long Beach harbor complex are identified on the current 303(d) list as impaired for a variety of chemical and bacteriological stressors and effects to biological communities. For those stressors causing water quality impairments, TMDLs will be developed that would specify load allocations from the individual input sources, such that the cumulative loadings to the harbor would be below levels expected to adversely affect water quality and beneficial uses of the water body. However, these TMDL studies are not planned until the year 2019 (see Section 3.13.2.1). Thus, in the absence of restricted load allocations, the impairments would be expected to persist.

Present and reasonably foreseeable future projects with in-water construction components, such as dredging and pier upgrades, would result in temporary and localized effects to water quality that would be individually comparable to those associated with proposed Project. Changes to water quality associated with in-water construction for the other cumulative projects would not persist for the same reasons discussed in Section 3.13. Therefore, cumulative impacts would occur only if the spatial influences of concurrent projects overlapped. Of the cumulative projects listed in Table 4-1, only the Channel Deepening (#4), China Shipping Development (#15) and Berths 121-131 Development (#29) are located in the vicinity of the proposed Project and involve in-water construction activities. Dredging for the Channel Deepening Project (#4) and Phase I construction for Project #15 has been completed, whereas Project #29 is still in the planning phase. A number of projects within the Port of Long Beach, including the Middle Harbor Development (#66), Piers G and J Redevelopment (#67), Pier T (#70), and Pier S (#71), would involve dredging and/or in-water construction. However, water quality effects from these projects would be limited to the immediate dredging or construction area and would not extend into the West Basin.

Wastewater discharges associated with project operations and runoff from project sites would be regulated by NPDES or stormwater permits. The permits would specify constituent limits and/or mass emission rates that are intended to protect water quality and beneficial uses of receiving waters.

Development of port facilities associated with the cumulative projects, including Port 400 (#1), Evergreen Improvements (#7), Berths 97-109 (#15), Berths 302-305 APL Terminal (#23), Berths 212-224 Upgrades (#28), Berths 121-131 Reconfiguration (#29), Middle Harbor Terminal (#66), Piers G & J Terminal (#67), Pier T Terminal (#70), and Pier S Terminal (#71), are expected to contribute to a greater number of ship visits to the Ports of Los Angeles and Long Beach. Assuming that the potential for accidental spills and illegal vessel discharges would increase in proportion to the increased vessel traffic, waste loadings to the harbor would also be expected to increase. The significance of this increased loading would depend on the volumes and composition of the releases, as well as the timing and effectiveness of spill response actions. However, as noted for the proposed Project (Section 3.13.4.3.1.2), there is no evidence that illegal discharges for ships are causing widespread impacts to water quality in the harbor.

Contribution of the Proposed Project (Prior to Mitigation)

The proposed Project would not result in any direct discharges of wastes or wastewaters to the harbor. However, stormwater runoff from the onshore portions of the project area would flow into the harbor, along with runoff from adjacent areas of the large, primarily urbanized, watershed. Stormwater runoff from the backland, rail yard, and road improvement areas within the proposed Project site would be governed by a permit, similar to those required for the other cumulative projects, that specifies constituent limits and/or mass emission rates that are intended to protect water quality and beneficial uses of receiving waters. Relative to both CEQA and No Federal Action/NEPA baseline conditions, the proposed Project operations would contribute only slightly higher volumes of runoff (due to the increased surface area associated with the landfill) and no substantial differences in the chemical composition because the land uses would be essentially the same. ~~While the i~~Inputs from the proposed Project would be negligible compared with those from the entire watershed, ~~the runoff could contain contaminants (e.g., metals) that have been identified as stressors for portions of the Los Angeles/Long Beach harbor complex~~because tenants will be required to obtain and meet all conditions of applicable stormwater discharge permits as well as meet all Port pollution control requirements. Thus, the proposed Project without mitigation would not contribute to a cumulatively considerable impact relative to both the CEQA and No Federal Action/NEPA baselines.

In-water construction activities, such as dredging and wharf construction, would suspend bottom sediments. While this would not constitute a discharge, disturbances of bottom sediments would alter some water quality parameters such as DO, nutrients, and turbidity. These changes are generally of short duration and localized to the mixing zone associated with the construction activity. As discussed in Section 3.13, changes to water quality associated from in-water construction are not expected to exceed applicable standards outside of the mixing zone. Because the effects are not expected to overlap in time and space with those from other projects, the impacts of such disturbances would not be cumulatively considerable relative to both the CEQA and No Federal Action/NEPA baselines. Once the construction phase of the proposed Project was

completed, operations would not be expected to cause further disturbances to bottom sediments or contribute to cumulative impacts.

The proposed Project would result in an increased number of ship visits to the Ports of Los Angeles and Long Beach, which could contribute to a proportionally higher potential for accidental spills, leaching of chemicals, and illegal vessel discharges within the harbor. A large volume spill or waste discharge directly to the harbor could result in significant impacts to water quality. The proposed Project would contribute to the cumulative risk of a significant spill or discharge, and leaching of chemicals from vessel hulls. Therefore, impacts to water quality from the proposed Project and other projects would be cumulatively considerable and unavoidable with mitigation relative to both the CEQA and No Federal Action/NEPA baselines.

Mitigation Measures and Residual Cumulative Impacts

Best management practices to prevent or minimize contaminant loadings to the harbor from stormwater runoff from past, present, and future projects, including the proposed Project, are required by the Standard Urban Stormwater Mitigation Plan (SUSMP), which is incorporated into the Los Angeles County Urban Runoff and Stormwater NPDES Permit issued by the RWQCB. SUSMP requirements must be incorporated into the project plan and approved prior to issuance of building and grading permits. Specifically, the SUSMP requires that each project incorporate BMPs specifically designed to minimize stormwater pollutant discharges. While adopted BMPs will vary by project, all BMPs must meet specific design standards to mitigate stormwater runoff and control peak flow discharges. The SUSMP also requires implementation of a monitoring and reporting program to ensure compliance with the constituent limitations in the permit. These BMPs and compliance monitoring that would be conditions of Project approval would reduce the residual cumulative impacts from runoff to less than considerable relative to both the CEQA and No Federal Action/NEPA baselines.

As discussed in Section 3.13, safety measures specified in the Los Angeles Harbor District Risk Management Plan and in project-specific SPCC plans minimize the risks of a large, accidental spill from impacting the harbor. However, these plans cannot completely eliminate the risk of a spill ~~or leaching of chemicals from vessel hulls~~. No mitigation measures are available to prevent leaching of chemicals from vessel hulls. Consequently, the proposed Project's contribution to the cumulative impact would be significant and unavoidable relative to both the CEQA and No Federal Action/NEPA baselines.

4.2.13.3 Cumulative Impact WQ-2: Cumulative Flooding Impacts – Less Than Cumulatively Considerable

4.2.13.4 Cumulative Impact WQ-3: Cumulative Adverse Changes in Surface Water Movement – Less Than Cumulatively Considerable

4.2.13.5 Cumulative Impact WQ-4: Cumulative Acceleration of Rates of Erosion and Sedimentation – Less Than Cumulatively Considerable

4.3 Alternatives