

20.0 COMPARISON OF ALTERNATIVES AND IMPACT CONCLUSIONS

20.1 COMPARISON OF ALTERNATIVES AND IMPACT CONCLUSIONS SUMMARY

As discussed in Chapter 1.0: Introduction and Project Goals and Objectives, pursuant to Section 15126[d] of the California Environmental Quality Act Guidelines, an Environmental Impact Report (EIR) must describe and evaluate a reasonable range of alternatives that would feasibly attain most of the proposed project's basic objectives, and, when feasible, would avoid or substantially lessen any of the significant impacts. To summarize the findings of those alternatives evaluated as part of this EIR, Table 20-1 presents a side-by-side comparison of the impacts and the associated mitigation measures for the proposed project, Alternative 1: Reduced Onshore Storage Capacity, and Alternative 2: No Project for each resource topic analyzed. (For a more detailed description of the proposed project or the alternatives presented, refer to Chapter 2.0: Proposed Project and Alternatives.)

As illustrated in Table 20-1, while a decreased footprint and a reduced onshore storage capacity (Alternative 1) would for many resources reduce the magnitude of impact relative to that of the proposed project (refer to Chapters 3.0 through 17.0), the impact conclusions and the associated mitigation measures would ultimately remain the same for both the proposed project and Alternative 1 for all resource topics analyzed. In contrast, under Alternative 2 (whereby existing facilities would remain at the project site and proposed construction and subsequent operation would not occur) no impacts would result across all resources analyzed; however, in such a case, the project goals and objectives—as presented in Chapter 1.0: Introduction and Project Goals and Objectives—would not be met.

Table 20-1: Comparison of Alternatives and Impact Conclusions

Resource Topic	Proposed Project	Alternative 1: Reduced Onshore Storage Capacity	Alternative 2: No Project
Aesthetics (AE)	<p>Impact AE-2: Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. (Less than significant with mitigation.)</p> <p>Mitigation Measure AE-1: Direct construction lighting away from sensitive receptors.</p> <p>Impact AE-5: Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. (Less than significant with mitigation.)</p> <p>Mitigation Measure AE-2: Terminal lighting.</p> <p>Mitigation Measure AE-3: Exterior paint.</p> <p>Impact AE-7: Visual effects from accidental releases of oil at or near the Terminal or Rail Transload Facility. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	<p>Impact AE-10: Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. (Less than significant with mitigation.)</p> <p>Mitigation Measure AE-4: Direct construction lighting away from sensitive receptors.</p> <p>Impact AE-13: Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area. (Less than significant with mitigation.)</p> <p>Mitigation Measure AE-5: Terminal lighting.</p> <p>Mitigation Measure AE-6: Exterior paint.</p> <p>Impact AE-15: Visual effects from accidental releases of oil at or near the Terminal or Rail Transload Facility. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	No impacts are considered significant.

Resource Topic	Proposed Project	Alternative 1: Reduced Onshore Storage Capacity	Alternative 2: No Project
Air Quality (AQ)	<p>Impact AQ-1: Construction emissions or health risk in excess of the thresholds of significance identified in the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act (CEQA) Guidelines (AQ Phase 1). (Significant and unavoidable.)</p> <p>Mitigation Measure AQ-1: Utilize equipment with Tier 2 engines or newer for Phase 1 construction activities occurring before commencement of rail operations.</p> <p>Impact AQ-2: Construction emissions or health risk in excess of the thresholds of significance identified in the BAAQMD CEQA Guidelines (AQ Phase 2). (Significant and unavoidable.)</p> <p>Mitigation Measure AQ-2: Utilize equipment with Tier 2 engines or newer for Phase 2 construction activities occurring after commencement of rail operations.</p> <p>Impact AQ-3: Operations emissions in excess of the thresholds of significance identified in the BAAQMD CEQA Guidelines. (Less than significant with mitigation.)</p> <p>Mitigation Measure AQ-3: Secure emission reduction credits (ERCs) to offset nitrogen oxide (NO_x) and</p>	<p>Impact AQ-9: Construction emissions or health risk in excess of the thresholds of significance identified in the BAAQMD CEQA Guidelines. (Significant and unavoidable.)</p> <p>Mitigation Measure AQ-4: Utilize construction equipment with Tier 2 engines or newer.</p> <p>Impact AQ-10: Operations emissions in excess of the thresholds of significance identified in the BAAQMD CEQA Guidelines. (Less than significant with mitigation.)</p> <p>Mitigation Measure AQ-5: Secure ERCs to offset NO_x and POC emissions.</p>	No impacts are considered significant.

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	precursor organic compound (POC) emissions.		
Greenhouse Gas Emissions (GG)	<p>Impact GG-2: Generate greenhouse gas emissions that exceed the adopted BAAQMD thresholds. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	<p>Impact GG-5: Generate greenhouse gas emissions that exceed the adopted BAAQMD thresholds. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	No impacts are considered significant.
Aquatic Resources (AR)	<p>Impact AR-1: Cause adverse impacts to special-status species. (Significant and unavoidable.)</p> <p>Mitigation Measure AR-1: Conduct environmental training prior to construction.</p> <p>Mitigation Measure AR-2: Special-status plant protection.</p> <p>Mitigation Measure AR-3: Conduct biological monitoring during construction.</p> <p>Mitigation Measure AR-4: Schedule work to avoid impacts to species.</p> <p>Mitigation Measure AR-5: Keep the work site clean and free of hazards.</p>	<p>Impact AR-24: Cause adverse impacts to special-status species or their habitats, or disrupt wildlife migratory corridors as a result of project construction or dredging. (Significant and unavoidable.)</p> <p>Mitigation Measure AR-13: Conduct environmental training prior to construction.</p> <p>Mitigation Measure AR-14: Special-status plant protection.</p> <p>Mitigation Measure AR-15: Conduct biological monitoring during construction.</p> <p>Mitigation Measure AR-16: Schedule work to avoid impacts to species.</p> <p>Mitigation Measure AR-17: Keep the work site clean and free of hazards.</p>	No impacts are considered significant.

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	<p>Impact AR-2: Disrupt wildlife migratory corridors. (Significant and unavoidable.) (Note: No additional mitigation measures available.)</p> <p>Impact AR-3: Create adverse impacts to special-status habitats. (Significant and unavoidable.) (Note: No additional mitigation measures available.)</p> <p>Impact AR-5: Cause impacts to species and habitat as a result of dredging. (Significant and unavoidable.) Mitigation Measure AR-6: Time dredging to reduce impacts to special-status species.</p> <p>Impact AR-9: Cause noise impacts as a result of dredging. (Significant and unavoidable.) (Note: No additional mitigation measures available.)</p> <p>Impact AR-12: Cause increased sediment resuspension in the water column due to pile removal. (Less than significant with mitigation.) Mitigation Measure AR-7: Minimize sediment resuspension.</p>	<p>Impact AR-26: Cause increased sediment resuspension in the water column due to pile removal, or cause increased underwater noise levels in the Lower Estuarine River as a result of pile driving. (Less than significant with mitigation).</p> <p>Mitigation Measure AR-18: Minimize sediment resuspension.</p> <p>Mitigation Measure AR-19: Consult with agencies to determine optimal schedule.</p> <p>Mitigation Measure AR-20: Time impact-hammer pile driving to coincide with low tide or slack currents.</p> <p>Mitigation Measure AR-21: Start soft.</p> <p>Mitigation Measure AR-22: Employ a sound attenuation system for impact-hammer pile driving.</p> <p>Impact AR-27: Cause increase in boat wake erosion of tidal marshes or sediment resuspension due to increased vessel traffic, increase sediment in the water column due to routine maintenance dredging, introduce or increase the spread of aquatic invasive species in the San Francisco Bay-Delta Region as a result of increased international shipping, increase</p>	

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	<p>Impact AR-13: Cause increased underwater noise levels in the Lower Estuarine River as a result of pile driving. (Significant and unavoidable).</p> <p>Mitigation Measure AR-8: Consult with agencies to determine optimal schedule.</p> <p>Mitigation Measure AR-9: Time impact-hammer pile driving to coincide with slack currents.</p> <p>Mitigation Measure AR-10: Start soft.</p> <p>Mitigation Measure AR-11: Employ a sound attenuation system for impact-hammer pile driving.</p> <p>Impact AR-18: Introduce or increase the spread of aquatic invasive species in the San Francisco Bay-Delta Region as a result of increased international shipping. (Significant and unavoidable.)</p> <p>Mitigation Measure AR-12: Marine Invasive Species Act Questionnaires.</p> <p>Impact AR-20: Increase the potential for major accidental spills of fuel and other materials. (Significant and unavoidable.)</p>	<p>the potential for minor accidental spills of fuel and other materials, or cause significant impacts to special-status species and sensitive habitats under modeled sea rise projections. (Significant and unavoidable.)</p> <p>Mitigation Measure AR-23: Marine Invasive Species Act Questionnaires.</p> <p>Impact AR-28: Increase the potential for major accidental spills of fuel and other materials. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	

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	(Note: No additional mitigation measures available.)		
Terrestrial Resources (TR)	<p>Impact TR-1: Substantially affect threatened or endangered species, or protected species (including candidate, sensitive, or special-status species). (Less than significant with mitigation.)</p> <p>Mitigation Measure TR-1: Blooming period surveys for special-status plants species and impact avoidance.</p> <p>Mitigation Measure TR-2: Preconstruction surveys for Townsend’s western big-eared bat and sensitive bat species, and impact avoidance.</p> <p>Mitigation Measure TR-3: Golden eagle, Swainson’s hawk, and white-tailed kite nest surveys and impact avoidance.</p> <p>Mitigation Measure TR-4: Western burrowing owl preconstruction surveys and impact avoidance.</p> <p>Mitigation Measure TR-5: Western pond turtle avoidance and minimization.</p>	<p>Impact TR-11: Substantially affect threatened or endangered species, or protected species (including candidate, sensitive, or special-status species). (Less than significant with mitigation.)</p> <p>Mitigation Measure TR-12: Blooming period surveys for special-status plants species and impact avoidance.</p> <p>Mitigation Measure TR-13: Preconstruction surveys for Townsend’s western big-eared bat and sensitive bat species, and impact avoidance.</p> <p>Mitigation Measure TR-14: Golden eagle, Swainson’s hawk, and white-tailed kite nest surveys and impact avoidance.</p> <p>Mitigation Measure TR-15: Western burrowing owl preconstruction surveys and impact avoidance.</p> <p>Mitigation Measure TR-16: Western pond turtle avoidance and minimization.</p>	No impacts are considered significant.

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	<p>Mitigation Measure TR-6: California red-legged frog and California tiger salamander habitat assessment and notification.</p> <p>Impact TR-2: Cause the loss of sensitive native plant communities, as defined by the California Department of Fish and Wildlife (CDFW). (Less than significant with mitigation.)</p> <p>Mitigation Measure TR-7: Environmentally sensitive area avoidance and education.</p> <p>Impact TR-3: Cause the loss of wetlands or other waters of the United States under the Clean Water Act, 40 Code of Federal Regulations 230 Section 404. (Less than significant with mitigation.)</p> <p>Mitigation Measure TR-8: Aquatic and wetland feature impact avoidance.</p> <p>Impact TR-4: Isolate wildlife populations and/or substantially disrupt wildlife migratory or movement corridors, or use of native wildlife nursery sites. (Less than significant with mitigation.)</p> <p>Mitigation Measure TR-9: Nesting bird surveys.</p> <p>Impact TR-10: Substantially affect threatened or endangered species, or</p>	<p>Mitigation Measure TR-17: California red-legged frog and California tiger salamander habitat assessment and notification.</p> <p>Impact TR-12: Cause the loss of sensitive native plant communities, as defined by the CDFW. (Less than significant with mitigation.)</p> <p>Mitigation Measure TR-18: Environmentally sensitive area avoidance and education.</p> <p>Impact TR-13: Cause the loss of wetlands or other waters of the United States under the Clean Water Act, 40 Code of Federal Regulations 230 Section 404. (Less than significant with mitigation.)</p> <p>Mitigation Measure TR-19: Aquatic and wetland feature impact avoidance.</p> <p>Impact TR-14: Isolate wildlife populations and/or substantially disrupt wildlife migratory or movement corridors, or use of native wildlife nursery sites. (Less than significant with mitigation.)</p> <p>Mitigation Measure TR-20: Nesting bird surveys.</p> <p>Impact TR-20: Substantially affect threatened or endangered species, or protected species (including candidate,</p>	

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	<p>protected species (including candidate, sensitive, or special-status species); cause the loss of sensitive native plant communities; or cause the loss of wetlands as a result of a hazardous materials spill. (Significant and unavoidable.)</p> <p>Mitigation Measure TR-10: Implementation of a Spill Prevention Control and Countermeasure (SPCC) Plan.</p>	<p>sensitive, or special-status species); cause the loss of sensitive native plant communities; or cause the loss of wetlands as a result of a hazardous materials spill. (Significant and unavoidable.)</p> <p>Mitigation Measure TR-21: Implementation of an SPCC Plan.</p>	
Cultural Resources (CR)	<p>Impact CR-1: Have the potential to disturb previously unrecorded historical, archaeological, or paleontological resources, and human remains. (Less than significant with mitigation.)</p> <p>Mitigation Measure CR-1: Pre-construction worker education training.</p> <p>Mitigation Measure CR-2: Unanticipated discovery.</p> <p>Mitigation Measure CR-3: Accidental discovery of human remains.</p> <p>Mitigation Measure CR-4: Paleontological Monitoring.</p>	<p>Impact CR-3: Have the potential to disturb previously unrecorded historical, archaeological, or paleontological resources, and human remains. (Less than significant with mitigation.)</p> <p>Mitigation Measure CR-5: Pre-construction worker education training.</p> <p>Mitigation Measure CR-6: Unanticipated discovery.</p> <p>Mitigation Measure CR-7: Accidental discovery of human remains.</p> <p>Mitigation Measure CR-8: Paleontological Monitoring.</p>	No impacts are considered significant.
Geology, Soils, and Seismicity	No impacts are considered significant.	No impacts are considered significant.	No impacts are considered significant.

Resource Topic	Proposed Project	Alternative 1: Reduced Onshore Storage Capacity	Alternative 2: No Project
<p>Hazards and Hazardous Materials (HM)</p>	<p>Impact HM-4: Create a hazard to the public or environment through reasonably foreseeable upset or accident conditions involving the release of a hazardous material to the environment. (Significant and unavoidable.)</p> <p>Mitigation Measure HM-1: Operations bulk storage tank regulations and standards auditing plan.</p> <p>Mitigation Measure HM-2: American Petroleum Institute (API) Standard 653 inspection report documenting inspection, and recommendations for repair, alteration, and reconstruction of petroleum storage tanks.</p> <p>Mitigation Measure HM-3: Construction quality assurance/quality control (QA/QC) plans.</p> <p>Mitigation Measure HM-4: Stakeholder communication plan.</p> <p>Mitigation Measure HM-5: Operations pipeline regulations and standards auditing plan.</p> <p>Impact HM-5: Create a hazard to the public or environment through reasonably foreseeable upset or accident conditions</p>	<p>Impact HM-12: Create a hazard to the public or environment through reasonably foreseeable upset or accident conditions involving the release of a hazardous material to the environment. (Significant and unavoidable.)</p> <p>Mitigation Measure HM-6: Operations bulk storage tank regulations and standards auditing plan.</p> <p>Mitigation Measure HM-7: API Standard 653 inspection report documenting inspection, and recommendations for repair, alteration, and reconstruction of petroleum storage tanks.</p> <p>Mitigation Measure HM-8: Construction QA/QC plans.</p> <p>Mitigation Measure HM-9: Stakeholder communication plan.</p> <p>Mitigation Measure HM-10: Operations pipeline regulations and standards auditing plan.</p> <p>Impact HM-13: Create a hazard to the public or environment through reasonably foreseeable upset or accident conditions involving the release of crude oil creating an indirect hazard due to crude oil flammability. (Significant and</p>	<p>No impacts are considered significant.</p>

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	<p>involving the release of crude oil creating an indirect hazard due to crude oil flammability. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	<p>unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	
<p>Public Services and Utilities (PSU)</p>	<p>Impact PSU-6: Temporary increase in solid waste generation. (Less than significant with mitigation.)</p> <p>Mitigation Measure PSU-1: Recycling of construction materials.</p> <p>Impact PSU-14: Result in substantial adverse impacts to public utilities. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	<p>Impact PSU-20: Temporary increase in solid waste generation. (Less than significant with mitigation.)</p> <p>Mitigation Measure PSU-2: Recycling of construction materials.</p> <p>Impact PSU-28: Result in substantial adverse impacts to public utilities. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	<p>No impacts are considered significant.</p>
<p>Land Use and Recreation (LUR)</p>	<p>Impact LUR-1: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Significant and unavoidable.)</p> <p>Mitigation Measure LU-1: Utilize construction equipment with Tier 2 engines or newer.</p>	<p>Impact LUR-13: Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Significant and unavoidable.)</p> <p>Mitigation Measure LU-4: Utilize construction equipment with Tier 2 engines or newer.</p>	<p>No impacts are considered significant.</p>

Resource Topic	Proposed Project	Alternative 1: Reduced Onshore Storage Capacity	Alternative 2: No Project
	<p>Impact LUR-4: Conflict with established or proposed land uses, including potentially sensitive land uses. (Less than significant with mitigation.)</p> <p>Mitigation Measure LU-2: Direct construction lighting away from sensitive receptors.</p> <p>Impact LUR-8: Cause residual impacts on sensitive shoreline lands and/or water and non-water recreation due to an accidental release of oil. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p> <p>Impact LUR-9: Conflict with established or proposed land uses, including potentially sensitive land uses. (Less than significant with mitigation.)</p> <p>Mitigation Measure LU-3: Terminal lighting.</p>	<p>Impact LUR-15: Conflict with established or proposed land uses, including potentially sensitive land uses; or cause the loss of passive recreational opportunities in open spaces and multi-use trails. (Less than significant with mitigation.)</p> <p>Mitigation Measure LU-5: Direct construction lighting away from sensitive receptors.</p> <p>Impact LUR-17: Cause residual impacts on sensitive shoreline lands and/or water and non-water recreation due to an accidental release of oil. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p> <p>Impact LUR-18: Conflict with established or proposed land uses, including potentially sensitive land uses. (Less than significant with mitigation.)</p> <p>Mitigation Measure LU-6: Terminal lighting.</p>	
Noise and Vibration	No impacts are considered significant.	No impacts are considered significant.	No impacts are considered significant.
Population and Housing	No impacts are considered significant.	No impacts are considered significant.	No impacts are considered significant.

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Land Transportation (LT)	<p>Impact LT-4: Substantially increase hazards caused by a design feature or incompatible uses. (Less than significant with mitigation.)</p> <p>Mitigation Measure LT-1: Minimize damage to existing roads.</p>	<p>Impact LT-13: Substantially increase hazards caused by a design feature or incompatible uses. (Less than significant with mitigation.)</p> <p>Mitigation Measure LT-2: Minimize damage to existing roads.</p>	No impacts are considered significant.
Marine Transportation and Marine Terminal Operations	No impacts are considered significant.	No impacts are considered significant.	No impacts are considered significant.
Water Resources (WR)	<p>Impact WR-10: Degrade water quality as a result of a crude oil pipeline release. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p> <p>Impact WR-1: Degrade water quality due to a crude oil release at the marine terminal. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	<p>Impact WR-22: Degrade water quality as a result of a crude oil pipeline release. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p> <p>Impact WR-24: Degrade water quality due to a crude oil release at the marine terminal. (Significant and unavoidable.)</p> <p>(Note: No additional mitigation measures available.)</p>	No impacts are considered significant.