US Army Corps of Engineers®

Oakland Harbor Turning Basins Widening

Revised Draft Integrated Feasibility Report and Environmental Assessment

APPENDIX A03:

Clean Water Section Act Section 404(b)(1) Preliminary Evaluation

APPENDIX A-3

Oakland Harbor Turning Basins Widening Project Clean Water Act Section 404(b)(1) Preliminary Evaluation

1 Introduction

This appendix evaluates compliance of the recommended plan, Alternative D-2, with the Guidelines established under the Federal Pollution Control Act (Clean Water Act) Amendments of 1972 (Public Law 92-500), as amended by the Clean Water Act of 1977 (Public Law 95-217), legislation collectively referred to as the Clean Water Act. The Clean Water Act sets national goals and policies to eliminate the discharge of water pollutants into navigable waters. Any discharge of dredged or fill material into waters of the U.S. (WOTUS) by the U.S. Army Corps of Engineers (Corps) requires a written evaluation that demonstrates that a proposed action complies with the guidelines published at 40 CFR Part 230. These guidelines, referred to as the Section 404(b)(1) Guidelines or "Guidelines," are the substantive criteria used in evaluating discharges of dredged or fill material under Section 404 of the Clean Water Act.

Fundamental to the Guidelines is the precept that "dredged or fill material should not be discharged into the aquatic ecosystem, unless it can be demonstrated such a discharge would not
have an unacceptable adverse impact either individually or in combination with known and/or probable impacts of other activities affecting the ecosystems of concern."

The procedures for documenting compliance with the Guidelines include the following:

1. Examining practicable alternatives to the proposed discharge that might have fewer adverse environmental impacts, including not discharging into a water of the U.S. or discharging into an alternative aquatic site.
2. Evaluating the potential short- and long-term effects, including cumulative effects, of a proposed discharge of dredged or fill material on the physical, chemical, and biological components of the aquatic environment.
3. Identifying appropriate and practicable measures to mitigate the unavoidable adverse environmental impacts of the proposed discharge.
4. Making and documenting the Findings of Compliance required by §230.12 of the Guidelines.

This Clean Water Act, Section 404(b)(1) evaluation of compliance with the Guidelines is not intended to be a "stand alone" document; it relies heavily on information provided in the Integrated Feasibility Report and Environmental Assessment (Integrated Report) to which it is attached.

2 Project Description

2.1 Basic and Overall Project Purpose

As defined under 40 CFR Part 230, the basic project purpose comprises the fundamental, essential, or irreducible purpose of the action, and is used to determine whether the project is water dependent. The basic purpose of this project— deep draft navigation—is water dependent since the project purpose cannot be fulfilled outside of an aquatic environment.

Navigation inefficiencies exist at the Oakland Harbor that arise from the fact that the current fleet of vessels utilizing the Oakland Harbor exceed the maximum dimensions of the constructed turning basins. An initial appraisal report conducted in 2018 pursuant to Section 216 of River and Harbor Act of 1970 determined the problems in Oakland Harbor are caused by length limitations in the inner and outer turning basins as opposed to depth limitations or landside capacity. The existing federal navigation channel was designed for a 6,500 twenty-foot equivalent units (TEU) capacity ship with a 1,139 length overall, 140-foot beam, and 48-foot draft as part of the Oakland Harbor Navigation Improvement (-50-foot) Project Study. The vessels routinely calling on the Oakland Harbor today are longer and wider than the design vessel from that study. These inefficiencies are projected to continue in the future as vessel sizes are expected to increase. The purpose of the project is to provide navigation improvements that address this need through modifications to the existing Oakland Harbor.

The overall project purpose serves as the basis for the alternatives analysis and more specifically describes the goals for the action. The overall project purpose is to implement deep draft navigation channel improvements at the Oakland Harbor to increase the efficiency of containerships.

2.2 Project Location

The Oakland Harbor study area includes the existing 50-foot federal navigation channel and the immediately surrounding areas (Figure 1). The study area is located on the eastern side of the San Francisco Bay, about 35 miles northwest of San Jose, in the counties of Alameda and San Francisco, California. The federally authorized Oakland Harbor navigation project is located about 8 miles inside the Golden Gate Bridge and consists of an Outer and Inner Harbor. The channel is maintained to a depth of -50 feet MLLW. The existing 50-foot federal navigation channel includes the Entrance Channel, Outer Harbor Channel, Inner Harbor Channel, the Outer Harbor Turning Basin, the Inner Harbor Turning Basin, and the Middle Harbor.

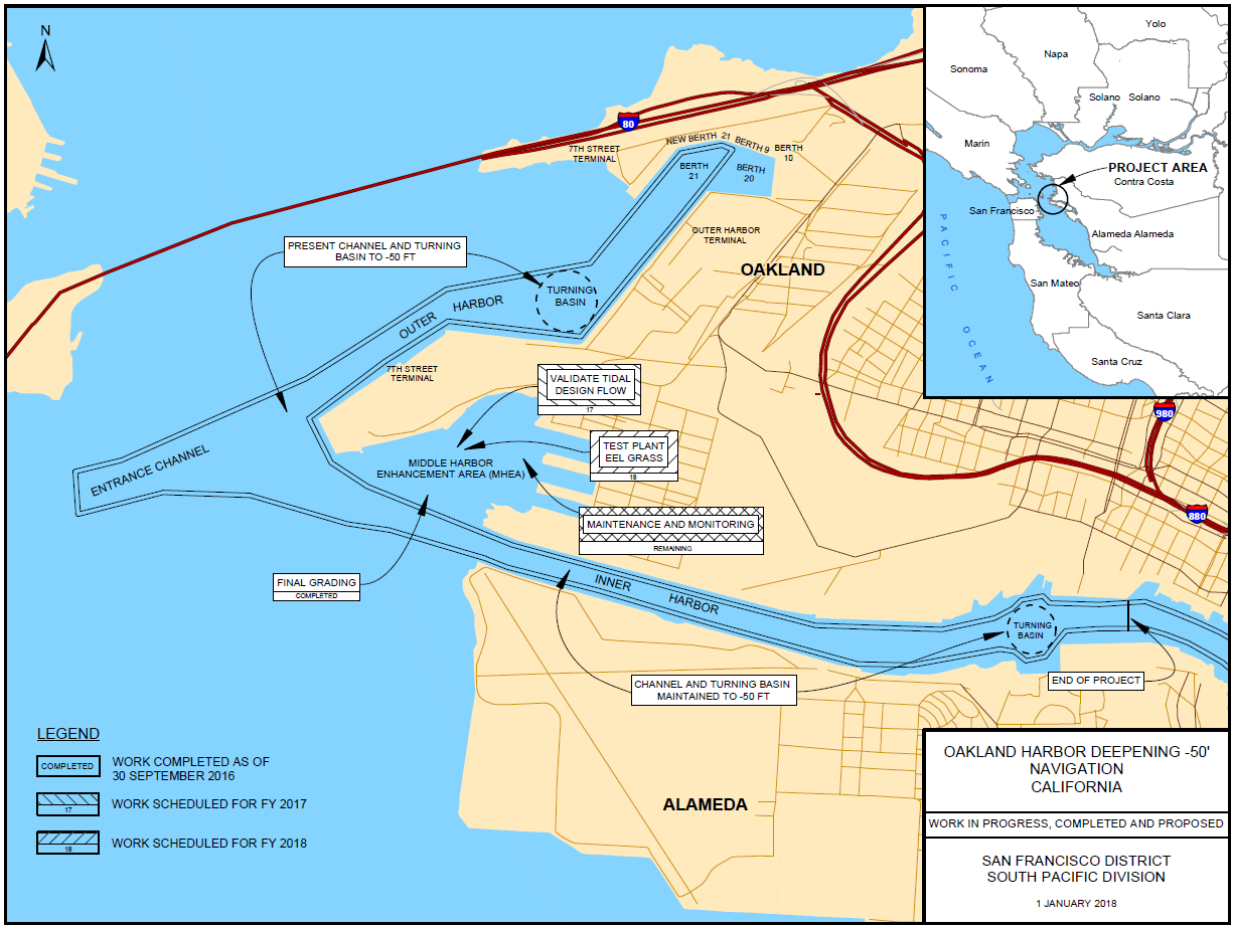

Figure 1: Current Port of Oakland Navigation Features

2.3 Delineation of Waters of the U.S.

In accordance with the USACE risk-informed planning process, the team used the maximum amount of existing data. The study area for surface waters includes the proposed Inner Harbor Turning Basin and Outer Harbor Turning Basin expansion areas and adjoining waters, which occur in the Central San Francisco Bay (Central Bay). The turning basin expansion area footprints include open water, tidally-influenced, navigable Waters of the U.S. The turning basin expansion area footprints do not include wetlands or non-Bay water features (e.g., streams, drainages), although upland stormwater drainage patterns and infrastructure likely to affect surface waters are in the project areas. Impacts to Waters of the U.S. are likely in the Inner Harbor as a retaining structure (sheet pile wall or similar feature) will be required between the Inner Harbor and Schnitzer steel, this structure is expected to be between 300 and 400 feet long.

3 Alternatives Analysis

An evaluation of alternatives is required under the Section 404(b)(1) Guidelines for projects that include the discharge of dredged or fill material into Waters of the U.S. Under the Guidelines, practicability of alternatives is taken into consideration and no alternative may be permitted if there is a less environmentally damaging practicable alternative (40 Code of Federal Regulations [CFR] 230.5(c)).

Section 230.10 of the Guidelines dictates that, except as provided under §404(b)(2),

> *"no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have significant adverse environmental considerations."*

While the NEPA process, through the EA, extensively examines alternatives and discloses all environmental impacts, the 404(b)(1) Analysis focuses on the impacts of alternatives to the aquatic ecosystem. The Guidelines require choosing for implementation the practicable alternative that has the least damage to the aquatic ecosystem, as long as that alternative has no significant adverse environmental impacts to other components of the environment, such as endangered species that occupy upland habitat.

A "practicable alternative" is defined as:

> *"available and capable of being done after taking into consideration cost, existing technology,*
> *and logistics in light of overall project purposes*."

The Guidelines also require that :

> *"where the activity associated with a discharge which is proposed for a special aquatic site does not require access or proximity to or siting within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise."*

3.1 Alternative Screening Criteria

Alternative screening criteria were developed in evaluating alternatives as described below. This screening criteria also considers the Section 404(b)(1) practicability factors. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (40 CFR 230.10(a)(2)).

The focused array of alternatives, as described in the Integrated Report, was evaluated by projecting, and comparing the with project and without project conditions. Plan formulation focused on addressing the identified problems and meeting study objectives, including those responsive to national, state, and local concerns. Consideration of state and local objectives in

concert with national objectives necessitates the inclusion and assessment of a broad range of benefits and impacts, both qualitative and quantitative. Alternative plans were assessed to determine if they have net benefits in total and by type. The set of plans judged to have net benefits were candidates for further analysis and included in the final array. The action-alternatives carried into the final array were evaluated on the *Principles and Guidelines Criteria* of:

- **Completeness** – Extent to which an alternative provides and accounts for all features, investments, and/or other actions necessary to realize the planned effects, including any necessary actions by others.
- **Effectiveness** – Extent to which a measure or alternative alleviates problem areas and meets planning objectives.
- **Efficiency** – The potential benefits/outcome of the measure are greater than what could be provided by another measure/plan of equal or greater cost.
- **Acceptability** – Viability and appropriateness of an alternative from the perspective of the general public and consistency with existing Federal laws, authorities, and public policies.

Additionally, plans were assessed on their beneficial or adverse effects to the four accounts identified in the Principles and Guidelines (1983):

- National Economic Development (NED) – the changes in the economic value of the National output of goods and services.
- Regional Economic Development (RED) – the impact of project spending, either directly or indirectly, on the local economy.
- Environmental Quality (EQ) – the non-monetary beneficial effects on significant natural and cultural resources.
- Other Social Effects (OSE) – the effects that are not covered in the NED, RED, and EQ. This account includes items such as community impacts, health and safety, and displacement.

3.2 Description of Alternatives

Six alternatives were moved forward into the final array of alternatives, including:

- Alternative A—No Action
- Alternative B—Inner Harbor Only (Inner Harbor Variation 3), with beneficial placement of eligible material
- Alternative C—Outer Harbor Only (Outer Harbor Variation 8), with beneficial placement of eligible material
- Alternative D-0—Inner and Outer Harbor (Inner Harbor Variation 3 and Outer Harbor Variation 8)
- Alternative D-1—Inner and Outer Harbor (Inner Harbor Variation 3 and Outer Harbor Variation 8), with beneficial placement of eligible material
- Alternative D-2—Inner and Outer Harbor (Inner Harbor Variation 3 and Outer Harbor Variation 8), with beneficial placement of eligible material and the electrification of dredges

A high-level description of each of the final alternatives is provided below and they are described in more detail in Section 3.4.3.

3.2.1 Alternative A—No Action

The No Action Alternatives describes what would happen if no action is taken as part of this project. Used for comparison with action alternatives to assess the benefits and impacts of proposed plans.

3.2.2 Alternative B—Inner Harbor Only (Inner Harbor Variation 3), with beneficial placement of eligible material

The Expansion of Inner Harbor Turning Basin Only Alternative consists of widening the existing Inner Harbor Turning Basin from 1,500 feet to 1,834 feet with a depth of -50 feet MLLW consistent with the existing depth of the Inner Harbor Turning Basin. It is estimated Alternative B would impact about 6.5 acres of fast land and would require the installation of about 2,500 feet of bulkheading.

The Inner Harbor turning basin would result in the need for in-water pile driving and in-water fill for slope stability purposes. This includes approximately 26,100 cubic yards of rock fill and up to 64 batter piles. In addition, an approximately 300 to 400-foot long, in-water retaining structure may be required between the northwestern portion of the Inner Harbor Turning Basin footprint and Schnitzer Steel property which would include installation of steel sheet piles, steel pipe piles, and/or pre-cast, pre-stressed concrete piles by vibratory or impact pile driving methods, likely through the aquatic environment. In addition to in-water work to widen the Inner Harbor Turning Basin, land would be impacted in two locations that would involve removal of asphalt and concrete pavement, installation of new bulkhead and batter piles, removal of existing piles, excavation of landside soil between the new bulkhead and existing rock dike, removal of existing rock, and placement of new rock for slope protection in the front of the new bulkhead wall.

3.2.3 Alternative C—Outer Harbor Only (Outer Harbor Variation 8), with beneficial placement of eligible material

The Expansion of Outer Harbor Turning Basin Only Alternative consists of widening the existing Outer Harbor Turning Basin from 1,650 to 1,965 feet. Alternative C would not impact fast land nor require bulkheading. There are no upland impacts under the proposed footprint of the expanded Outer Harbor Turning Basin. The impacted area is approximately 1,005,000 square feet. This alternative involves dredging material to widen the basin to a depth of -50 feet MLLW consistent with the existing depth of the Outer Harbor Turning Basin.

3.2.4 Alternative D—Inner and Outer Harbor (Inner Harbor Variation 3 and Outer Harbor Variation 8)

There are three variations of Alternative D that made it into the final array of alternatives. All variations of Alternative D impact about 6.5 acres of fast land and would require the installation of about 2,500 ft of bulkheading due to work on the Inner Harbor. Work on the Outer Harbor would not impact fast land nor require bulkheading.

Alternative D-0—Inner and Outer Harbor (Inner Harbor Variation 3 and Outer Harbor Variation 8

Under this alternative, both the Inner Harbor Turning Basin and Outer Harbor Turning Basin would be widened. The proposed improvements and construction methods for each turning basin would be the same as those described for the individual turning basin expansion alternatives (Alternative B and Alternative C). Alternative D-0 would impact about 6.5 acres of fast land and would require the installation of about 2,500 feet of bulkheading due to work on the Inner Harbor. Work on the Outer Harbor would not impact fast land nor require bulkheading.

Alternative D-1—Inner and Outer Harbor (Inner Harbor Variation 3 and Outer Harbor Variation 8), with beneficial placement of eligible material

Alternative D-1, is a variation of D-0 that involves the use of dredge equipment powered by diesel fuel and but includes placement of eligible material at a beneficial use site for the protection, restoration, or creation aquatic wetland habitats as either non-cover or cover. The opportunity to use some of the dredged material for placement at a beneficial use site represents an increase in cost for the project but benefits the environment by keeping sediment in system, accelerating wetland accretion, and creating habitat for endangered species. The non-federal sponsor, The Port of Oakland, supports the beneficial placement of dredged material and is willing to share in the incremental cost above the Base Plan.

Alternative D-1 would impact about 6.5 acres of fast land and would require the installation of about 2,500 feet of bulkheading due to work on the Inner Harbor. Work on the Outer Harbor would not impact fast land nor require bulkheading. During the Feasibility Study, this alternative was identified as the NED and Beneficial Use (BU) plan.

Alternative D-2—Inner and Outer Harbor (Inner Harbor Variation 3 and Outer Harbor Variation 8), with beneficial placement of eligible material and the electrification of dredges

Alternative D-2 is a variation of D-1 that includes placement of eligible material at a beneficial use site for the protection, restoration, or creation aquatic wetland habitats as either non-cover or cover; and, involves the use of an electric-powered barge-mounted clamshell/excavator dredge instead of a diesel-powered dredge, and the installation of electrical switchgear near Berth 26. Under this variation, the installation of electric infrastructure is required in the Outer Harbor prior to dredging the Outer Harbor. The power provided at this location would be designed and designated for dredging use only to widen the Outer Harbor Turning Basin.

Alternative D-2 would impact about 6.5 acres of fast land and would require the installation of about 2,500 feet of bulkheading due to work on the Inner Harbor. Work on the Outer Harbor would not impact fast land nor require bulkheading.

During the Feasibility Study, this alternative was selected as the Tentatively Selected Plan, and the recommended plan.

3.3 Least Environmentally Damaging Practicable Alternative (LEDPA) under the 404(b)(1) Guidelines

Alternative D-2 is the least environmentally damaging practicable alternative (LEDPA). Although the No Action plan would result in no new impacts to open waters or air quality, there would continue to be marine navigation inefficiencies within Oakland Harbor caused by width limitations in the turning basins, therefore this alternative does not meet the overall project purpose. Under the No Action plan, vessels calling at the Port would continue to face delays in maneuvering. These delays result in increased emissions from cargo ships and tugs or other supporting vessels. There is also an increased safety risk to both human and aquatic life under the No Action plan due to the additional maneuvering of vessels.

Although Alternatives D-1 and D-2 are similar, Alternative D-2 contributes the most to the environmental quality and other social effects accounts because the electric dredges reduce air-pollutant emissions during construction and subsequently reduce health-related impacts. Alternative D-2 would have minor effects to environmental justice communities because dredging would be conducted with electric dredges, minimizing the air-pollutant emissions. This effect would be important to the West Oakland community which already has high cumulative air pollution exposure as well as many sensitive receptors and designated disadvantaged communities.

Additionally, due to the use of electric dredges, Alternative D-2 would have less noise from construction for nearby sensitive receptors in Alameda and West Oakland as compared to Alternative D-1.

4 Proposed Project and its Potential Effects

The Oakland Harbor Turning Basins Widening Project determined that Alternative D-2 is the recommended plan. See Chapter 5 of the Integrated Report for more detail about Alternative D-2.

The potential impacts of the proposed project are discussed below. Dredged material is assumed to be placed at Keller Canyon landfill, Kettleman Hills landfill, and at an already permitted beneficial use site for the protection, restoration, or creation aquatic wetland habitats as either non-cover or cover. Placement of dredged material at a beneficial use site is covered under existing permits and agreements and therefore the impacts are excluded from the discussion below.

4.1 Potential Impacts of Proposed Project

4.1.1 Potential Impacts on Physical and Chemical Characteristics of the Aquatic Ecosystem

Alternative D-2 would result in moderate permanent changes to the substrate through in-water construction activities such as dredging, sheet pile and pile installation, and rock placement. The proposed dredging has the potential to temporarily alter physical and chemical

characteristics in the Inner and Outer Harbor waters. See the Chapter 6.4.1 of the Integrated Report for more information on the project's effects on water resources and water quality.

Substrate

Discharges of dredged or fill material related to this project are limited to areas where batter piles and sheet piles are installed in the aquatic environment, areas identified for rock placement, and potential settlement of suspended sediment generated during construction from erosion, slumping or lateral displacement. See Chapter 6.4 of the Integrated Report for more information on the project's effects on water resources.

Water Resources

During dredging operations, the interaction of the dredge equipment with aquatic material would resuspend sediment into the water column via the impact and withdrawal of the clamshell bucket from the substrate, washing of material out of the bucket as it moves through the water column, and loss of water as the sediment is loaded onto the barge (Hayes et al. 2011; Nightingale and Simenstad 2001). Removal and installation of piles and sheet piles within the aquatic environment, and other bottom disturbing activities such as rock placement, may temporarily disturb benthic sediments and increase turbidity and suspended sediment levels in the immediate vicinity of the activity. Impacts related to suspended sediment levels would be temporary and localized and would impact a relatively small area in relation to surrounding San Francisco waters.

In consideration of the localized and temporary effects of dredging-induced turbidity, ambient turbidity levels, and the implementation of minimization measures to reduce turbidity effects, potential impacts to surface waters from increased turbidity and suspended sediments under this alternative would be less than significant.

Groundwater and the general watershed characteristics would be unaffected by project actions. See Chapter 6.4 of the Integrated Report for more information on the project's effects on water resources.

Current Patterns and Water Circulation

The project does not include any constructions or structures that would obstruct or drastically alter current patterns or water circulation.

Normal Water Fluctuations

The project does not include any constructions or structures that would obstruct or drastically alter normal water fluctuations. Silt curtains and other temporary construction related BMPs intended to limit sediment would not impede normal water fluctuations.

Salinity Gradients

Eroded soils, if generated from upland construction, and construction-related wastes from upland construction have the potential to degrade water quality if they enter runoff and flow into waterways, potentially altering the temperature, salinity, pH, and dissolved oxygen content (Section 6.4.1). Upland construction would be managed to avoid adverse effects to waterbodies

through implementation of the avoidance and minimization measures described in Appendix A-7 of the Integrated Report.

4.1.2 Potential Impacts on Biological Characteristics of the Aquatic Ecosystem

The placement of fill associated with the expansion of the Inner Harbor Turning Basins is from bulkheading which involves the removal and installation of sheet piles, batter piles, and the placement of rock in the aquatic environment. The remaining impacts of expanding the Inner Harbor Turning Basin would be from removing material from the banks resulting in an overall increase in open water habitat. Work on the Outer Harbor would not impact fast land nor require bulkheading.

Discharges of dredged or fill material under Alternative D-2 would result in minor to moderate temporary impacts to the biological characteristics of the aquatic ecosystem of the Inner and Outer Harbor. The overall the biological characteristics of the aquatic ecosystem would remain largely the same following construction.

Potential impacts to biological resources are described in detail in Chapter 6.5 of the Integrated Report.

Threatened And Endangered Species

Effects to special status fish, marine mammals, and migratory birds are discussed in Section 6.6.

Dredging, pile removal and installation, and other in-water construction activities would result in increased turbidity from suspended sediments and the potential effects on fish species. While early life stage individuals tend to be more sensitive to turbidity than adults, Chinook salmon, steelhead and Green Sturgeon do not spawn in the study area so their eggs or larval life stages would not be present. Large adult and juvenile fish (including Chinook Salmon, steelhead, and Green Sturgeon) would be mobile enough to avoid areas of high-turbidity plumes caused by dredging.

Listed fish species may be affected if disturbed sediments are present and suspended into the water column (see previous discussion on 4.1.1, Water Resources). However, as discussed in Chapter 6.5.1, a study on the short-term water quality impacts of dredging and dredged material placement on sensitive fish species in San Francisco Bay concluded that direct short-term effects on sensitive fish by contaminants associated with dredging plumes are minor (Jabusch et al. 2008). Moreover, turbidity plumes would be local, quickly disperse, and would be minimized by measures proposed under this alternative, such as the use of silt curtains (where specific site conditions demonstrate that they would be practicable and effective) and limitations on decant water.

Based on the above analysis, and with implementation of the minimization measures described in Appendix A-7, impacts to federally listed threatened and endangered fish species and their designated critical habitats would be less than significant.

Dredging and shoreline construction activities could temporarily increase turbidity, which may affect California least tern foraging. Increased turbidity may decrease foraging success by decreasing prey abundance or by making it more difficult for least terns to detect prey. Impacts to shallow-water habitat would be limited and would not occur in waters adjacent to known

California least tern colonies at the former Alameda Naval Air Station or known foraging and roosting habitat within the Middle Harbor Enhancement Area. Suitable foraging habitat for this species is widely available outside of the proposed construction limits, including along the southern Alameda shoreline and the Bay Farm borrow pits to the south of Alameda. USACE will initiate ESA consultation with USFWS to conduct work outside the LTMS dredging work window. With this, implementation of the turbidity minimization measures described in the preceding sections, and the use of vibratory pile removal and installation to the extent feasible to limit noise, impacts to California least tern would be less than significant.

Fish, Crustaceans, Mollusks and Other Aquatic Organisms in the Food Web

Sediment suspension from mechanical dredging and in-water pile removal and extraction would generate turbidity plumes that could interfere with the ability of pelagic organisms to receive sunlight, respirate, and find food (Wilber and Clarke 2001); although turbidity generated from pile removal and installation would be considerably less than that from dredging. Turbidity impacts would be localized and temporary, and adult and juvenile fish would be mobile enough to avoid turbidity plumes.

Construction-related effects would not substantially limit available habitat or movement of fish and seabirds relative to available open water habitat in Oakland Harbor and the greater San Francisco Bay. Moreover, the expansion of the turning basins would create more open water habitat for fish to move through in the long term.

Organisms immediately adjacent to the turning basin expansion footprint also may be lost because of smothering or burial from sediments resuspended in the water column during dredging (USACE 2019). These effects may also occur due to pile removal and installation, although to a much lesser degree. Following sediment-disturbing activities such as dredging, disturbed areas are usually recolonized quickly by benthic organisms (Newell et al. 1998). Recovery in deep-water channels may be slower, and as a result, there is potential for some loss of habitat for fish species that forage in these deeper areas. This potential for habitat loss is minimized in the project area due to deep-draft vessel use of the navigation channel and turning basin which results in benthos that are in a constant state of disruption.

Other Wildlife

As described in Chapter 3.5.2, terrestrial wildlife in the project area is limited to common species that are adapted to inhabiting developed areas. The Inner and Outer Harbor Turning Basin expansion project area includes open waters that serve as habitat for aquatic wildlife such as fish, marine mammals, and birds.
Areas that would be impacted by the expansion of the Inner Harbor Turning Basin are heavily developed, and any wildlife present would be able to relocate to other nearby areas of similar habitat in the vicinity. Therefore, impacts to other wildlife would be negligible.

4.1.3 Potential Impacts on Special Aquatic Sites

Within the project footprint, there are no sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, or riffle and pool complexes.

4.1.4 Potential Effects on Human Use Characteristics

Discharges of dredged or fill material under Alternative D-2 are not expected to negatively affect municipal private water supplies, recreational and commercial fisheries, water-related recreation, aesthetics, or parks.

Municipal and Private Water Supplies

Discharges of dredged or fill material under Alternative D-2 are not expected to negatively affect municipal or private water supplies which are absent from the project footprint. Project construction would not use groundwater, and shallow groundwater underlying the proposed project sites is not used as a source of drinking water. See Chapter 6.4 of the Integrated Report.

Recreational and Commercial Fisheries

Recreational fishing is available throughout the Inner Harbor and Outer Harbor waterways from private boats via trolling though boats may not stop or anchor within the federal navigation channel or turning basins to fish. Landside recreational fishing is also available at points along the Inner Harbor and Outer Harbor. Discharges of dredged or fill material under Alternative D-2 are not expected to negatively affect recreational and commercial fisheries. See Chapter 6.9 of the Integrated Report and Section 6.5 below for compliance with the Magnuson-Stevens Fishery Conservation and Management Act.

Water-Related Recreation

Minor temporary effects from visual setting degradation and may occur for recreational boaters traveling near construction sites. Discharges of dredged or fill material under Alternative D-2 are not expected to negatively affect water-related recreation. See Chapter 6.9 of the Integrated Report.

Aesthetics

Minor temporary effects from visual setting degradation and may occur for recreational boaters traveling near construction sites. Discharges of dredged or fill material under Alternative D-2 are not expected to negatively affect aesthetics. See Chapter 6.8 of the Integrated Report.

Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves

No adverse operational impacts on adjacent parks would result from discharges of dredged or fill material under Alternative D-2 project.

4.2 Potential Effects of Contaminants—Evaluation and Testing of Fill Material

All dredge material would be placed at existing, separately permitted beneficial reuse sites for wetland restoration or, if necessary, an appropriate upland landfill facility, no dredge fill would be placed in waters of the U.S. Any components (e.g., sheet piles, bulkhead, or rock) to be installed for expansion of the Inner Harbor Turning Basin would be constructed with materials that do not contain elevated levels of contaminants.

Based on existing sampling and analysis from prior projects in the immediate vicinity, most of the aquatic material is not expected to contain elevated COCs that would preclude beneficial reuse at an upland wetland restoration site as non-cover or potentially cover material. The exception is the basin between Howard Terminal and Schnitzer Steel, where sediment may be contaminated with heavy metals. Sediments that would be dredged as part of implementation of any action alternative would be sampled and tested in the pre-construction and design phase that follows completion of the USACE's study phase, but occurs prior to any construction activities, including dredging. The results would be reviewed by the DMMO to identify appropriate placement site options based on the characteristics of the sediment and criteria for each placement location. All handling and disposal of dredged sediments would occur in accordance with applicable permit conditions. If dredged sediments do not meet the criteria for placement as non-cover at a permitted beneficial re-use site, they would be removed and appropriately re-handled at the Port of Oakland's Berth 10 facility, which is an authorized material rehandling location, before being hauled to a facility permitted for the receipt of such material (e.g., a landfill).

As concluded in sections in the Integrated Report on "Water Quality" (6.4), "Wildlife" (6.5), and "Special Status Species and Protected Habitat" (6.6), effects of contaminants in dredge material (Section 6.12), if they are present, are expected to be less than significant with the proposed minimization measures on these resources.

Shoreline construction, including demolition, excavation, and sheet pile or pile removal and installation, could also result in increased contaminant loading to San Francisco Bay waters via surface run-off.

4.3 Actions To Minimize Adverse Effects

Avoidance and minimization measures are described in Appendix A-7 of the Integrated Report.

5 Factual Determination (Section 230.11).

A review of appropriate information as it pertains to items identified above indicates that there is minimal potential for short or long term environmental effects of the proposed discharge as related to (a yes below indicates that effects are minimal or smaller):

	YES	NO
a. Physical substrate	[X]	
b. Water circulation, fluctuation, and salinity	[X]	
c. Suspended particulates/turbidity	[X]	
d. Contaminant availability	[X]	
e. Aquatic ecosystem structure, function, and organisms	[X]	
f. Proposed disposal site	[X]	
g. Cumulative effects on the aquatic ecosystem	[X]	
h. Secondary effects on the aquatic ecosystem	[X]	

6 Findings of Compliance or Non-Compliance with the Restrictions on Discharges

6.1 Adaptation of the Section 404(b)(1) Guidelines to this Evaluation

No significant adaptations of the guidelines were made relative to this evaluation.

6.2 Availability of a Practicable Alternative Less Damaging to the Environment

Alternatives to Alternative D-2 are described and evaluated in Chapter 4.9, “Comparison of the Finally Array of Alternatives.” Based on the evaluation in that section, there is no practicable alternative to Alternative D-2 that would be less damaging to the environment as Alternative D-2 addresses both beneficial use of dredged material and also reductions in air-pollutant emissions during construction.

6.3 Compliance with Applicable Water Quality and Toxic Effluent Standards

Construction of Alternative D-2 would not cause or contribute to violation of any applicable State water quality standards, and would not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

6.4 Compliance with Endangered Species Act

The placement of fill materials by Alternative D-2 would not jeopardize the continued existence of any species listed as threatened or endangered or result in the likelihood of destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973.

6.5 Compliance with Magnuson Stevens Fishery Conservation and Management Act

An Essential Fish Habitat (EFH) Assessment has been prepared which identified three EFHs and one habitat of particular concern (HAPC) in the project area. The assessment determined that the proposed action is likely to result in an adverse effect that is not substantial for Pacific Coast Groundfish and Coastal Pelagic EFH. The assessment also determined no adverse effect to Pacific Salmon EFH and Eelgrass HAPC.

6.6 Compliance with Marine Protection, Research, and Sanctuaries Act

Construction of Alternative D-2 would not result in the dumping of material into the ocean that would unreasonably degrade or endanger human health, welfare, or amenities, or the marine environment, ecological systems, or economic potentialities. All handling and disposal of dredged sediments would occur in accordance with applicable permit conditions. If dredged sediments do not meet the criteria for placement as non-cover at a permitted beneficial re-use site, they would be removed and appropriately re-handled at the Port of Oakland’s Berth 10

facility, which is an authorized material rehandling location, before being hauled to a facility permitted for the receipt of such material (e.g., a landfill).

6.7 Extent of Degradation of Waters of the U.S.

Construction of Alternative D-2 would not cause or contribute to significant degradation of waters of the U.S. Moreover, this alternative would result in a beneficial permanent effect due to the removal of contaminated soil in the Inner Harbor Turning Basin areas and overall net increase in waters of the U.S..

6.8 Appropriate and Practicable Steps Taken to Minimize Potential Impacts to the Aquatic Ecosystem

Appropriate steps to minimize potential adverse effects of the discharge on aquatic systems would be implemented, as described in Appendix A-7 of the Integrated Report. Consequently, Alternative D-2 is compliant with the requirements of the guidelines for the inclusion of appropriate and practicable measures to minimize adverse effects to the aquatic ecosystem.

7 References

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