



DEPARTMENT OF THE ARMY  
OFFICE OF THE CHIEF OF ENGINEERS  
2600 ARMY PENTAGON  
WASHINGTON, DC 20310-2600

DAEN

30 MAY 2024

SUBJECT: Oakland Harbor Turning Basins Widening, Oakland, California

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on deep draft navigation recommendations for the Oakland Harbor, Oakland, California. It is accompanied by the reports of the San Francisco District Engineer and South Pacific Division Engineer. This study was conducted under the authority of Section 216 of the Rivers and Harbors Act of 1970 (33 U.S.C. §549a). Section 216 authorizes the Secretary of the Army, acting through the Chief of Engineers, to review the operation of projects for which construction has been completed and which were constructed by the U.S. Army Corps of Engineers in the interest of navigation, flood control, water supply, and related purposes when found advisable due to significantly changed physical or economic conditions, and to recommend to Congress on the advisability of modifying the structures or their operation and for improving the quality of the environment in the overall public interest.

2. The Oakland Harbor Navigation Improvement (-50-foot) Project was authorized for construction in Section 101(a)(7) of the Water Resources Development Act (WRDA) of 1999 (Public Law 106-53). Construction of the project channels was completed in 2009. The completed channels are maintained at -50 feet mean lower low water (MLLW). Preconstruction engineering and design activities will continue under current authorities.

3. The reporting officers recommend authorizing a plan that would modify the Inner Harbor Turning Basin and Outer Harbor Turning Basin to allow vessels to operate within the Oakland Harbor more efficiently and safely. Dredged material from the project will be placed at appropriate landfills and at a beneficial use site for the protection, restoration, or creation of aquatic wetland habitats as either foundation (non-cover) or cover material in compliance with Section 204(d) of WRDA 1992, as amended (33 U.S.C. 2326(d)). The use of a non-least-cost placement area for beneficial use was approved by the Assistant Secretary of the Army for Civil Works on September 6, 2022, based on ecosystem restoration benefits where 22 acres of wetlands provided by beneficially using the dredged material justifies the relatively small increment of additional costs.

4. The Federally Recommended Plan includes the following features:

a. Widening of the Oakland Harbor inner turning basin diameter to 1,835 feet to a depth of -50 feet MLLW.

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b. Widening of the Oakland Harbor outer turning basin diameter to 1,965 feet to a depth of -50 feet MLLW.

c. Installation of an estimated 2,380 linear feet of stabilization bulkhead and 4.6 acres of fast lands at the Alameda site.

d. The excavation of approximately 2.7 million cubic yards of excavated and dredged sediment, with beneficial use placement of approximately 454,000 cubic yards of dredged material during construction.

5. The Port of Oakland is the non-federal cost sharing sponsor for all features of the project. Based on October 2023 price levels, the estimated project first cost is \$608,945,000 which includes the incremental cost of beneficial use placement and the value of lands, easements, rights-of-way, and relocations (LERR), including the real property interests required for dredged material placement facilities. Total LERR costs are estimated to be \$64,093,000 and include in addition to Facility and Utility Relocations, the acquisition of parcels for standard fee interest, parcels for standard Temporary Work Area Easements for staging and a Channel Improvement Easement for the Inner Harbor. Additionally for the Outer Harbor a Temporary Work Area Easement for staging is required. At the request of the Port of Oakland, the Recommended Plan assumes the use of electric dredges for project construction. However, the use of electric dredges is not required for federal construction of the project and as such is considered a project betterment. Any increased costs related to the use of electric dredges are not considered as part of the project's authorized first cost and will be borne fully by the Port of Oakland.

a. The project first cost for initial construction of the General Navigation Features (GNF) is estimated at \$540,108,000 with the federal share estimated at \$405,081,000 and the non-federal share estimated at \$135,027,000 in accordance with the provision of Section 101(a) of WRDA 1986, as amended (33 U.S.C. 2211(a)(1)).

b. The incremental cost of the beneficial use placement above the least cost method of placement is estimated at \$4,744,000. The federal and non-federal share of the incremental beneficial use cost is estimated at \$3,083,600 and \$1,660,400 respectively.

c. The non-federal sponsor shall pay an additional 10 percent of construction costs for GNF of the project, estimated at \$54,010,800, less any credit for the value of LERR required for the project, over a period not to exceed 30 years, in accordance with Section 101(a)(2) of WRDA 1986, as amended (33 U.S.C. 2211(a)(2)).

d. The annual cost of operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) for the Recommended Plan is a federal cost and is estimated to be \$1,105,000. OMRR&R activities include regular operations and maintenance of the inner and outer turning basins would require an additional 93,000 cy of material to be removed.

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6. Based on a 2.75% discount rate and a 50-year period of analysis, the equivalent average annual National Economic Development (NED) benefits are estimated at \$49,186,000 and equivalent average annual NED costs are estimated at \$24,272,000 with equivalent average annual net NED benefits of \$24,914,000 and a benefit-to-cost ratio of 2.0 to 1. Equivalent average annual beneficial use costs are estimated at \$120,000.

7. The beneficial use of dredged material restoration benefits are of critical importance to the region in the context of resiliency to rising sea levels and consistent with the Administration's climate change priorities.

8. All compliance with required applicable environmental laws and regulations has been completed.

9. In accordance with USACE policy on the review of decision documents, all technical, engineering, and scientific work underwent an open, dynamic, and rigorous review process. The comprehensive review process included District Quality Control Review, Agency Technical Review, and Headquarters Policy and Legal Compliance review to confirm the planning analyses, alternative design and safety, and the quality of decisions. Washington-level review indicates that the plan recommended by the reporting officers complies with all essential elements of the U.S. Water Resources Council's Economic and Environmental Principles, Requirements, and Guidelines for Water and Land Related Resources Implementation Studies, as well as other administrative and legislative policies and guidelines. The views of interested parties, including federal, state, and local agencies, were considered and all comments from public reviews have been addressed and incorporated into the final report documents where appropriate.

10. USACE decision documents recognize cost risk and uncertainty surrounding implementation. All cost estimates will carry a degree of uncertainty. The estimated total project first cost for the Recommended Plan at the 80% confidence interval is \$608,945,000. This project carries a degree of uncertainty such that if the main drivers described below are realized, the first cost for the recommended plan could increase to approximately \$706,183,000. The recommended plan has various construction and non-construction components. These components range from 15 to 30 percent in project definition. The overall recommended plan is at 15 percent design. Based on the recommended project design of the construction components and scope definition of the non-construction components, the total project cost is designated as a Class 3 estimate. The total project first cost includes a contingency value of \$141,806,000, which is approximately 35 percent of the estimated base project cost of \$405,159,000. The cost contingencies are intended to cover cost and schedule increases due to the identified project risks and their probability of occurrence. Changes to assumptions or the basis of design can result in additional risks not currently identified. For the Recommended Plan project first costs, the currently known major uncertainty drivers are the following: 1) limited geo tech survey may result in quantity changes of dredged material, 2) limited sediment sampling may result in quantity changes in beneficial use of dredged material, 3) variation in major material costs and bid assumptions, 4) ability

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of the non-federal sponsor to provide their share of funds and obtain all required real estate interests in a timely fashion as reflected in the project schedule, and 5) any changes to assumptions on productivity, construction sequencing due to funding allocations and future market conditions can affect overall project cost. As the project moves into the next phases, USACE will focus risk management and mitigation on the primary cost and other significant risk drivers to the extent within USACE control. However, there still exists the potential for other unanticipated and uncontrollable changes in environmental or economic conditions that could further increase the total project first cost beyond the current estimate and/or necessitate changes in the project's design.

11. In full consideration of the risks as documented in the preceding paragraphs in this report, I concur in the findings, conclusions, and recommendation of the reporting officers. Accordingly, I recommend that the Oakland Harbor Turning Basin Widening be authorized in accordance with the reporting officers' Recommended Plan at an estimated cost of \$608,945,000 with such modifications as in the discretion of the Chief of Engineers may be advisable. Federal implementation of the project for deep draft navigation includes, but is not limited to, the following items of local cooperation to be undertaken by the non-federal sponsor in accordance with applicable federal laws, regulations, and policies:

a. Provide the non-federal share of construction costs, as further specified below:

1) Provide, during design 25 percent of the costs of design for the general navigation features of the project in accordance with the terms of the design agreement for the project;

2) Provide during construction, 25 percent of the costs of the general navigation facilities;

3) Provide during construction, 35 percent of the incremental cost of the beneficial use placement above the least cost method of placement.

b. Provide all lands, easements, and rights-of-way, including those required for relocations and dredged material placement facilities, acquire or compel the removal of obstructions, and perform or ensure the performance of all relocations, including utility relocations, as determined by the federal government to be necessary for the construction, operation, and maintenance of the general navigation features;

c. For each relocation of a utility, or portion thereof, located in or under navigable waters of the United States that is required to accommodate a channel depth over 45 feet, pay to the owner of the utility at least one half of the owner's relocation costs, unless the owner voluntarily agrees to waive all or a portion of the non-federal sponsor's contribution;

d. Pay, with interest over a period not to exceed 30 years following completion of construction of the general navigation features, an additional amount equal to 10

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percent of the construction costs of the general navigation features less the amount of credit afforded by the federal government for the value of the real property interests and relocations, including utility relocations, provided by the non-federal sponsor for the general navigation features, except for the value of the real property interests and relocations provided for mitigation, which is included in the construction costs of the general navigation features;

e. Ensure that the local service facilities are constructed, operated, and maintained at no cost to the federal government, and that all applicable licenses and permits necessary for construction, operation, and maintenance of such work are obtained;

f. Give the federal government a right to enter, at reasonable times and in a reasonable manner, upon the real property interests that the non-federal sponsor owns or controls for the purpose of operating and maintaining the project;

g. Hold and save the federal government free from all damages arising from design, construction, operation and maintenance of the project, except for damages due to the fault or negligence of the federal government or its contractors;

h. Perform, or ensure performance of, any investigations for hazardous, toxic, and radioactive wastes (HTRW) that are determined necessary to identify the existence and extent of any HTRW regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, and any other applicable law, that may exist in, on, or under real property interests that the federal government determines to be necessary for construction, operation and maintenance of the general navigation features;

i. Agree, as between the federal government and the non-federal sponsor, to be solely responsible for the performance and costs of cleanup and response of any HTRW regulated under applicable law that are located in, on, or under real property interests required for construction, operation, and maintenance of the project, including the costs of any studies and investigations necessary to determine an appropriate response to the contamination, without reimbursement or credit by the federal government;

j. Perform the non-federal sponsor's responsibilities in a manner that will not cause HTRW liability to arise under applicable law to the maximum extent practicable; and

k. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended, (42 U.S.C. 4630 and 4655) and the Uniform Regulations contained in 49 C.F.R Part 24, in acquiring real property interests necessary for construction, operation, and maintenance of the project including those necessary for relocations, and placement area improvements; and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

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12. The recommendation contained herein reflects the information available at this time and current departmental policies governing formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of a national civil works construction program or the perspective of higher review levels within the Executive Branch. Consequently, the recommendation may be modified before it is transmitted to the Congress as a proposal for authorization and implementation funding. However, prior to transmittal to Congress, the non-federal sponsor, interested federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

A handwritten signature in black ink, appearing to read "Scott A. Spellmon", with a long horizontal line extending to the right.

SCOTT A. SPELLMON  
Lieutenant General, USA  
Chief of Engineers