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SUBJECT: Brazos Island Harbor Channel Improvement Project, Texas

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on navigation improvements for the Brazos Island Harbor (BIH) Channel Improvement Project, Texas. It is accompanied by the report of the district and division engineers. This report is an interim response to a resolution of the Committee on Public Works, U.S. House of Representatives, dated May 5, 1966. The committee authorized USACE to conduct a study of BIH, Texas, to determine whether the project should be modified in any way, particularly with a view to widening and deepening the existing channels. Additionally, the Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Tsunami Relief, 2005 (P.L. 109-13), Section 6009, "Offshore Oil and Gas Fabrication Ports", provided that in determining the economic justification for navigation projects involving offshore oil and gas fabrication ports, the Secretary is directed to measure and include in the National Economic Development (NED) calculation the value of future energy exploration and production fabrication contracts and transportation cost savings that would result from larger navigation channels. Preconstruction engineering and design activities for this proposed project, if funded, would be continued under the 1966 authority. The existing BIH 42-foot navigation project was authorized by the Water Resources Development Act (WRDA) of 1986 (P.L. 99-662) and construction was completed in 1996.

2. The reporting officers recommend authorizing a plan that will contribute significantly to the economic efficiency of commercial navigation in the region. The recommended plan includes channel deepening along a majority of the channel length with no widening. Since the recommended plan would not have significant adverse effects, no compensatory mitigation measures (beyond minimization and avoidance) would be required. The feasibility report did not identify a NED Plan; however, the analysis indicated that the net excess benefits were still increasing with deeper channel dimensions. The recommended channel deepening plan is the deepest plan that the non-federal sponsor would support due to financial constraints. Therefore, the recommended plan is a Categorical Exemption to the NED Plan. All project features are located in the State of Texas.

3. The Brownsville Navigation District, acting as the financial representative for the Port of Brownsville, is the non-federal cost sharing sponsor for all features. Based on October 2014 price levels, the estimated total project cost of the plan is \$204,587,000 for deep-draft navigation.

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In addition, there are non-federal associated costs of \$47,257,000 for the dredging of berthing areas to include construction of Placement Area (PA) capacity associated with third party use and development of other local service facilities and federal associated costs of \$108,000 for aids to navigation. Total project implementation costs including the associated costs are \$251,952,000. The federal share of the total project implementation cost would be about \$116,116,000 and the non-federal share would be about \$135,836,000.

4. The reporting officers recommend a plan to modify the existing BIH Channel. No widening of the BIH Channel is proposed. The recommended plan consists of the following improvements:

a. The entrance and jetty channels from Station -17+000 to 0+000 would be deepened from 44 feet to a depth of 54 feet Mean Lower Low Water (MLLW). This provides an additional 2 feet of depth, beyond the interior channel depth, to allow for the effects of vessel pitch, roll, heave, and yaw occurring as a result of strong currents, waves, and wind.

b. From Station 0+000 to 84+200, the channel would be deepened from 42 feet to a depth of 52 feet MLLW.

c. From Station 84+200 to 86+000, the existing channel depth of 42 feet MLLW would be maintained since there is no forecast change in the design drafts of vessels using this portion of the channel in the future.

d. The channel would continue to be maintained at the existing depth of 36 feet MLLW from Station 86+000 to the end of the Turning Basin, as ships will have been light-loaded or unloaded before entering the basin.

5. Dredged material placement for this project would be provided in accordance with the Dredged Material Management Plan (DMMP) developed during the study that identified the least cost base plan for placement of dredged material. Deepening the BIH Channel would generate approximately 14.1 million cubic yards of new work material and 61.7 million cubic yards of maintenance material over the 50-year period of economic evaluation. New work material will be placed in the new work Ocean Dredged Material Disposal Sites (ODMDS) and the existing PAs. Maintenance material from the entrance and jetty channels and the first 11,000 feet of the main channel would be placed offshore in a nearshore feeder berm. If for some reason the feeder berm could not be used, this reach of maintenance material could be placed in the maintenance ODMDS. Material from the inland reaches would be placed in existing confined, upland PAs adjacent to each reach. No horizontal expansion of existing upland sites would be required.

6. The estimated total project first cost of constructing the project is \$204,587,000 based on October 2014 price levels, which includes \$204,582,000 for channel modification and dredged

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material placement and \$5,000 for the non-federal sponsor's provision of lands for the project. There are no costs for fish and wildlife mitigation expected for this project and no cultural resource mitigation costs are expected at this time. Additionally, there are no utility relocations expected with this project. This estimated first cost includes a federal cost of \$116,008,000 and a non-federal cost of \$88,579,000, as apportioned in accordance with the cost sharing provisions of Section 101 of WRDA 1986, as amended. This results in a blended cost sharing as follows:

a. The costs for the deepening of the channel from 42 to 45 feet will be shared at the rate of 75 percent by the government and 25 percent by the non-federal sponsor. Accordingly, the federal and non-federal shares of the estimated \$54,872,000 cost in this zone will be approximately \$41,150,000 and \$13,722,000, respectively.

b. The costs for the deepening the channel from 45 to 52 feet will be shared at the rate of 50 percent by the government and 50 percent by the non-federal sponsor. Accordingly, the federal and non-federal shares of the estimated \$149,715,000 cost in this zone will be approximately \$74,858,000 and \$74,858,000, respectively.

c. Additional 10 Percent Payment. In addition to payment by the non-federal sponsor for its share of the total first costs of construction of the general navigation features (GNF) as estimated and described in sub-paragraphs 6(a) and 6(b) above, the non-federal sponsor must pay an additional 10 percent of the cost of the GNF of the project in cash over a period not to exceed 30 years, with interest. The additional 10 percent payment without interest is estimated to be \$20,459,000. There is no crediting of the value of lands, easements, rights-of-way, and relocations (LERRs) provided by the non-federal sponsor because this value has already been credited with previous project construction.

d. Operations and Maintenance (O&M) Costs. The additional annual cost of O&M for this recommended plan is estimated at \$2,971,000. In accordance with Section 101(b) of WRDA 1986, as modified by Section 2102(b) of the Water Resources Reform and Development Act (WRRDA) of 2014 (P.L. 113-121), the non-federal sponsor will be responsible for an amount equal to 50 percent of the excess of the cost of the O&M of the project over the cost which would be incurred for O&M of the project if the project had a depth of 50 feet. Dike raising for the maintenance will be cost shared as O&M costs, with the costs for dike raising associated with deepening the channel from 42 to 50 feet being a 100 percent government expense and the costs associated with deepening from 50 to 52 feet being shared at the rate of 50 percent by the government and 50 percent by the non-federal sponsor. Costs for dike raising for dredging of berthing areas and development of other local service facilities is 100 percent a non-federal sponsor responsibility. The federal share for the annual cost attributable to O&M is \$2,674,000 and the non-federal sponsor is responsible for \$297,000.

e. Associated Costs. Estimated total project associated costs of \$47,365,000 include non-federal costs of \$47,257,000 associated with dredging of berthing areas to include construction

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of PA capacity associated with third party use and development of other local service facilities and associated federal costs of \$108,000 for navigation aids (a U.S. Coast Guard expense).

f. Section 902 Calculation. For the purpose of calculating the maximum cost of the project pursuant to Section 902 of WRDA 1986, as amended, the total estimated project first cost is \$204,587,000 which consists of an estimated federal share of \$116,008,000 and an estimated non-federal share of \$88,579,000. As explained in paragraph 6, above, the total estimated first cost for this purpose includes the estimates for GNF construction costs, any value of LERRs provided under Section 101(a)(3) of WRDA 1986, as amended.

7. Based on October 2014 price levels, a discount rate of 3.375 percent, and a 50-year period of economic analysis, the project average annual benefits and costs for the BIH improvements are estimated at \$20,599,000 and \$13,896,000, respectively, with a resulting net benefit of \$6,703,000 and a benefit-to-cost ratio (BCR) of 1.5 to 1. Using the allocable benefits described in the Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Tsunami Relief, 2005 (P.L. 109-13), Section 6009, "Offshore Oil and Gas Fabrication Ports", resulted in project annual benefits of \$90,871,000, net benefits of 76,975,000 and a BCR of 6.5 to 1.

8. Risk and uncertainty were evaluated for economic benefits, costs, and sea level rise. Economic sensitivity analyses were conducted to determine the sensitivity of projected benefits to changes in key assumptions, such as commodity tonnage, fleet distribution, and other various growth rates. In accordance with the USACE Engineering Circular 1165-2-212, Sea-Level Change Consideration for Civil Works Programs, the study details the analysis performed to identify potential sea level rise rates. Low, intermediate, and high projections of relative sea level rise (RSLR) at the end of the 50-year period of analysis are estimated to be 0.63 feet, 1.06 feet, and 2.40 feet, respectively. The historic average rate for the project area is about 1.26 feet per 100 years. In general, RSLR (low, intermediate, and high) will not affect the function of the project alternatives. Upland PAs would be armored to withstand the effects of rising sea levels and the cost of this armoring is included in the total project cost estimate. Minor impacts in the project vicinity would likely occur due to RSLR, but not as a consequence of the proposed project.

9. In accordance with the USACE Engineering Circular on review of decision documents, all technical, engineering, and scientific work underwent an open, dynamic, and vigorous review process to ensure technical quality. This included an Agency Technical Review (ATR), an Independent External Peer Review (IEPR), and a USACE Headquarters policy and legal review. All concerns of the ATR have been addressed and incorporated into the final report. The IEPR was completed by Battelle Memorial Institute. A total of 13 comments were documented. The comments were related to plan formulation, vessel fleet analysis, benefits, dredging and sedimentation, risk and uncertainty, and the cumulative impacts of changes in air quality. In response, sections in the main report and EIS were expanded to include additional information.

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10. Washington level review indicates that the project recommended by the reporting officers is technically sound, environmentally and socially acceptable, and economically justified. The plan complies with all essential elements of the 1983 U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation Studies and complies with other administrative and legislative policies and guidelines. The views of interested parties, including federal, state, and local agencies were considered. There were no comments from public review of the draft integrated report. During state and agency review, a letter was received from the Texas Commission on Environmental Quality, which did not include concerns about the project.

11. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that navigation improvements for the BIH be authorized in accordance with the reporting officers' recommended plan at an estimated cost of \$204,587,000 with such modifications as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost sharing, financing, and other applicable requirements of federal and state laws and policies, including Section 101 of WRDA 1986, as amended. The non-federal sponsor would provide the non-federal cost share and all LERRs. Further the non-federal sponsor would be responsible for the non-federal cost share of the operation and maintenance, as described above. This recommendation is subject to the non-federal sponsor agreeing to comply with all applicable federal laws and policies, including but not limited to:

a. Provide 10 percent of the total cost of construction of the GNFs attributable to dredging to a depth not in excess of 20 feet; plus 25 percent of the total cost of construction of the GNFs attributable to dredging to a depth in excess of 20 feet but not in excess of 45 feet; plus 50 percent of the total cost of construction of the GNFs attributable to dredging to a depth in excess of 45 feet as further specified below:

(1) Provide 50 percent of design costs allocated by the government to commercial navigation in accordance with the terms of a design agreement entered into prior to commencement of design work for the project;

(2) Provide, during construction, any additional funds necessary to make its total contribution for commercial navigation equal to 10 percent of the total cost of construction of the GNFs attributable to dredging to a depth not in excess of 20 feet; plus 25 percent of the total cost of construction of the GNFs attributable to dredging to a depth in excess of 20 feet but not in excess of 45 feet; plus 50 percent of the total cost of construction of the GNFs attributable to dredging to a depth in excess of 45 feet;

b. Provide all LERRs, including those necessary for the borrowing of material and placement of dredged or excavated material, and perform or assure the performance of all relocations, including utility relocations, all as determined by the government to be necessary for the construction or operation and maintenance of the GNFs;

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c. Pay with interest, over a period not to exceed 30 years following completion of the period of construction of the GNFs, an additional amount equal to 10 percent of the total cost of construction of GNFs less the amount of credit afforded by the government for the value of the LERRs, including utility relocations, provided by the non-federal sponsor for the GNFs. If the amount of credit afforded by the government for the value of LERRs, including utility relocations, provided by the sponsor equals or exceeds 10 percent of the total cost of construction of the GNF, the sponsor shall not be required to make any contribution under this paragraph, nor shall it be entitled to any refund for the value of LERRs, including utility relocations, in excess of 10 percent of the total costs of construction of the GNFs.

d. Provide, operate, and maintain, at no cost to the government, the local service facilities in a manner compatible with the project's authorized purposes and in accordance with applicable federal and state laws and regulations and any specific directions prescribed by the federal government;

e. Provide 50 percent of the excess cost of O&M of the project over that cost, which the federal government determines would be incurred for O&M if the project had a depth of 50 feet;

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

g. Hold and save the U.S. free from all damages arising from the construction or O&M of the project, any betterments, and the local service facilities, except for damages due to the fault or negligence of the U.S. or its contractors;

h. Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project, for a minimum of 3 years after completion of the accounting for which such books, records, documents, and other evidence is required, to the extent and in such detail as will properly reflect total cost of construction of the project, and in accordance with the standards for financial management systems set forth in the Uniform Administrative Requirements for Grants and Cooperative Agreements to state and local governments at 32 CFR, Section 33.20;

i. Perform, or ensure performance of, any investigations for hazardous substances as are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601-9675, that may exist in, on, or under LERRs that the government determines to be necessary for the construction or O&M of the GNFs. However, for LERRs that the government determines to be subject to the navigation servitude, only the government shall perform such investigation unless the federal government provides the non-federal sponsor with

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prior specific written direction, in which case the non-federal sponsor shall perform such investigations in accordance with such written direction;

j. Assume complete financial responsibility, as between the federal government and the sponsor, for all necessary cleanup and response costs of any hazardous substances regulated under CERCLA that are located in, on, or under LERRs that the federal government determines to be necessary for the construction or operation and maintenance of the project;

k. To the maximum extent practicable, perform its obligations in a manner that will not cause liability to arise under CERCLA;

l. Comply with Section 221 of the Flood Control Act of 1970, as amended (42 USC 1962d-5b), and Section 101(e) of the WRDA 1986, as amended (33 USC 2211(e)), which provides that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the non-federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element;

m. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (42 USC 4601-4655), and the Uniform Regulations contained in 49 CFR 24, in acquiring lands, easements, and rights-of-way, necessary for construction, O&M of the project including those necessary for relocations, the borrowing of material, or the placement of dredged or excavated material; and inform all affected persons of applicable benefits, policies, and procedures in connection with said act;

n. Comply with all applicable federal and state laws and regulations, including, but not limited to, Section 601 of the Civil Rights Act of 1964 (42 USC 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army"; and all applicable federal labor standards requirements including, but not limited to, 40 USC 3141-3148 and 40 USC 3701-3708 (revising, codifying and enacting without substantive changes the provision of the Davis-Bacon Act (formerly 40 USC 276a et seq.), the Contract Work Hours and Safety Standards Act (formerly 40 USC 327 et seq.), and the Copeland Anti-Kickback Act (formerly 40 USC 276c);

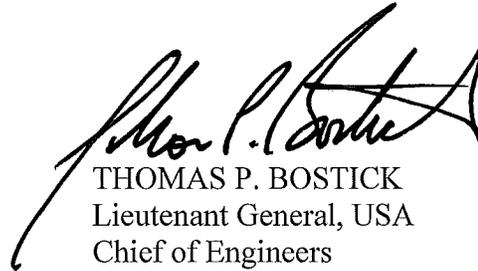
o. Provide the non-federal share of that portion of the costs of mitigation and data recovery activities associated with historic preservation that are in excess of 1 percent of the total amount authorized to be appropriated for the project; and

p. Not use funds from other federal programs throughout, including any non-federal contribution required as a matching share, therefore, to meet any of the sponsor's obligations for the project costs unless the federal agency providing the federal portion of such funds verifies in writing that such funds are authorized to be used to carry out the project.

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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 Congress as a proposal for authorization and implementation funding. However, prior to transmittal to Congress, the State of Texas, the Brownsville Navigation District, interested federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.



THOMAS P. BOSTICK
Lieutenant General, USA
Chief of Engineers