DEPARTMENT OF THE ARMY
OFFICE OF THE CHIEF OF ENGINEERS
WASHINGTON, D.C. 20314-1000

CECW-PC (1105-2-10a) APR 30 2012

SUBJECT: Jacksonville Harbor Mile Point Navigation Study, Duval County, Florida

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress, the final feasibility report and environmental assessment on navigation improvements for Jacksonville Harbor Mile Point, Duval County, Florida. It is accompanied by the report of the district and division engineers. This report was prepared in response to a congressional resolution adopted on March 24, 1998 by the House Committee on Transportation and Infrastructure. Congress added funding in the appropriations for Fiscal Year 2000 to begin the reconnaissance phase of the feasibility study. This report constitutes the final report in response to this resolution. Preconstruction engineering and design activities for the Jacksonville Harbor Mile Point, Duval County, Florida Navigation Project will continue under the authority provided by the resolution cited above.

2. The report recommends authorizing a project that will contribute to the economic efficiency of commercial navigation. The recommended plan reduces the ebb tide crosscurrents at the confluence of the St. Johns River with the Intracoastal Waterway (IWW) by construction of a relocated Mile Point training wall. Relocation of the Mile Point training wall involves removal of the western 3,110 feet (ft) of existing Mile Point training wall, including land removal and dredging to open the confluence of the IWW and St. Johns River, construction of a new training wall western leg (~4,250 ft) and relocated eastern leg (~2,050 ft), restoration of Great Marsh Island as the least-cost disposal alternative and mitigation site providing beneficial use of dredged material, and construction of a flow improvement channel to offset project induced adverse impacts.

3. The reporting officers recommend the National Economic Development (NED) Plan to relocate/reconfigure the existing Mile Point Training Wall. The NED plan consists of the following improvements:

a. The training wall reconfiguration includes removal of the western 3,110 ft of the existing Mile Point training wall, construction of a relocated Eastern Leg training wall, approximately 2,050 ft, and a new West Leg training wall, approximately 4,250 ft. Total estimated quantity of material to be excavated is approximately 889,000 cubic yards (cy). All usable stone material recovered from the existing training wall will be stockpiled for use in either the West or East Leg of the relocated training wall and all other material excavated will be placed as beneficial use in the Salt Marsh Mitigation Area at Great Marsh Island and as foundation for the relocated training

wall. It is estimated that approximately 14,600 cy of armor stone can be recovered for reuse purposes; however, additional geophysical exploration will more precisely ascertain the exact quantities of stone available for reuse during the preconstruction, engineering and design phase.

b. The East Leg training wall incorporates a larger scour apron (25') than the West Leg (10') due to the predicted permanent shift of stronger currents in Pablo Creek towards the east, especially during the ebb tide. Channel migration of the IWW is anticipated and realignment of the channel to deep water may become necessary. The relocated East Leg consists of building approximately 2,050 ft of training wall tying into the existing structure on Helen Cooper Floyd Park and the West Leg consists of building approximately 4,250 ft of training wall across the breakthrough at Great Marsh Island. Estimated quantities associated with the East Leg are 26,900 cy of armor stone and 11,900 cy of bedding stone, and for the West Leg are 5,670 cy of concrete (567 units at 10cy/unit) and 32,000 square yards (sy) of geotextile fabric for bags and tubes to be filled with 40,500 cy of excavated material. Both legs will incorporate the use of a total of approximately 34,900 sy of filter fabric.

c. The least-cost disposal method is to restore the breakthrough at Great Marsh Island by constructing an approximate 4,250-foot Western Leg training wall and placing dredged material to restore the island. Restoration of this area provides an opportunity for beneficial use of dredged material and an opportunity to address impacts caused by the physical decay of the ecosystem through erosion of natural habitat caused by the crosscurrents. Without the project, Great Marsh Island will continue to erode. Restoring Great Marsh Island is both the least-cost alternative for dredged material and also provides up to 53 acres of salt marsh restoration. This alternative provides incidental environmental benefits, in addition to providing mitigation for approximately 8.15 acres of impacted salt marsh by the training wall removal.

d. The Flow Improvement Channel (FIC) would be constructed to offset any adverse effects that would be caused by closing off the breakthrough of Great Marsh Island. If Great Marsh Island is restored and the FIC is not built, then water quality is expected to be degraded within Chicopit Bay due to non-point source pollution loadings from the upstream watershed not being flushed out of the hydrological system. This would occur because the restoration would close off the recently formed channel through the eroded portion of Great Marsh Island, which now flushes the bay. The FIC would allow for improved water quality and environmental stability of the project area by potentially improving the flushing of sediment and other waterborne constituents into the adjacent IWW. The construction of the FIC would also restore the historic channel through Chicopit Bay, which has silted in with eroded material from Great Marsh Island. The FIC consists of dredging a channel 80 ft wide and 6 ft deep for a length of approximately 3,620 ft through Western Chicopit Bay. Dredged material from the FIC would be placed back into the Great Marsh Island restoration area.

e. Approximately 51.2 acres of land are under the control of the U.S. Navy. The U.S. Army Corps of Engineers (USACE) will coordinate with the U.S. Navy for a license that will allow

removal of the real property (uplands). Additionally, the federal government has navigational servitude over submerged lands impacted by the proposed project. The non-federal sponsor (Jacksonville Port Authority) owns lands in the vicinity of the proposed project, but those lands will not be impacted by the proposed project. The Nature Conservancy, Incorporated (Inc.) owns lands in the vicinity of the proposed project that may be required for construction of the western leg training wall through perpetual easement. The Nature Conservancy, Inc. is familiar with the proposed project and has indicated their support for the project.

4. Project Cost Breakdown Based on October 2011 Prices.

a. Project First Cost. The estimated project first cost is $35,999,000, which includes the cost of constructing the general navigation features (GNF) and the value of lands, easements, rights-of-way and relocations (LERR) estimated as follows: $32,812,000 for channel modification, turbidity and endangered species monitoring, and dredged material placement; $3,088,000 for environmental mitigation; and $99,000 administrative costs for the value of LERR. The Jacksonville Port Authority is the non-federal cost-sharing sponsor for all features.

b. Estimated Federal and Non-Federal Shares. The estimated federal and non-federal shares of the project first cost are $26,998,000 and $9,001,000, respectively, as apportioned in accordance with the cost sharing provisions of Section 101 of the Water Resources Development Act (WRDA) 1986, as amended (33 U.S.C. 2211), as follows:

(1) The cost for the general navigation features from greater than 20 ft to 45 ft will be shared at a rate of 75 percent by the Government and 25 percent by the non-federal sponsor. Accordingly, the federal and non-federal shares of the costs in this zone are estimated to be $26,924,000 and $8,976,000, respectively.

(2) In addition to the costs outlined in sub-paragraph (1) above, the project first cost includes administrative costs for LERR estimated at $99,000. The federal administrative costs include project real estate planning, review, and incidental costs between the U.S. Navy and the USACE. Accordingly, the federal and non-federal shares of the administrative costs are estimated to be $74,000 and $25,000, respectively. Credit is given for the incidental costs borne by the non-federal sponsor for LERR per Section 101 of WRDA 1986. Of the non-federal share, approximately $12,500, is eligible for LERR credit.

c. Additional 10 Percent Payment. In addition to the non-federal sponsor's estimated share of the total first cost of constructing the project in the amount of $9,001,000, pursuant to Section 101(a)(2) of WRDA 1986, as amended, the non-federal sponsor must pay an additional 10% of the costs of general navigation features of the project, $3,590,000, in cash over a period not to exceed 30 years, with interest. The value of the LERR provided by the non-federal sponsor under Section 101(a)(3) of WRDA 1986 as amended will be credited toward this payment.

d. Operations and Maintenance Costs. There are no additional costs of operation and maintenance for this recommended plan.

e. Associated Costs. Estimated associated costs of $431,000 include navigation aids, which is a U.S. Coast Guard expense.

f. Authorized Project Cost and Section 902 Calculation. The project first cost, for the purposes of authorization and calculating the maximum cost of the project pursuant to Section 902 of WRDA 1986, as amended, should include estimates for GNF construction costs, the value of LERR provided under Section 101(a)(3) of WRDA 1986, as amended. Accordingly, as set forth in paragraph 4.a. above, based on October 2011 prices, the estimated project first cost for these purposes is $35,999,000 with a federal share of $26,998,000 and a non-federal share of $9,001,000.

5. Based on October 2011 price levels, a 4-percent discount rate, and a 50-year period of analysis, the total equivalent average annual costs of the project are estimated to be $1,737,000. The average annual equivalent benefits are estimated to be $2,440,000. The average annual net benefits are estimated to be $703,000. The benefit-to-cost ratio for the recommended plan is 1.4.

6. Examination of the maximum flood and ebb tide current vectors indicate that flow velocities within the federal navigation channel are very similar between the existing and with-project condition and in isolated areas of the Mile Point turn are about 1 foot/second less under the with-project condition. This comparison suggests that little or no significant net increase in shoaling rates will occur in the Jacksonville Harbor federal channel over existing project conditions. A natural shift of the IWW at the entrance to Pablo Creek will be expected as a result of the realignment of the training wall. Lower water velocities will increase the opportunities for sedimentation on the western side of the entrance; while higher velocities along the eastern side have the potential to scour and undermine the location of the new training wall if unprotected against erosion. However, little or no significant net increase in shoaling of the IWW navigational channel is predicted as a result of the reconfiguration of the Mile Point training wall.

a. Historically, the training walls along the St. Johns River have performed well and required very little maintenance. With proper design and construction, it is anticipated that no maintenance of the relocated training wall legs will be required over the 50 year period of analysis. All dredged material for the recommended plan will be placed at Great Marsh Island; therefore, the selected plan will have no effect on future channel dredging maintenance activities for Jacksonville Harbor or the IWW.

b. Based on model investigations and current measurements, the resulting bottom current velocities from the relocated training wall legs and excavation and removal of a portion of the existing training wall and entire surrounding area to -13 ft Mean Low Water (MLW) are of such

magnitude to expect little deposition to occur in either of the channels. The Chicopit Bay FIC is also not expected to require maintenance dredging. Prior to the breakthrough of Great Marsh Island, a natural channel existed in the same location as the proposed FIC. Historical maps show water depths up to 10 ft due to tidal flushing of Chicopit Bay, as well as freshwater runoff from the neighboring creeks. Once Great Marsh Island is restored, the water from Greenfield and Mount Pleasant Creeks, as well as the large volume of water within Chicopit Bay's tidal prism, will flush in and out through the FIC. The water velocities in the channel are expected to be sufficient to prevent shoaling within the channel.

7. In accordance with the Corps Engineering Circular (EC) 1165-2-211 on sea level change, the study performed an analysis of three Sea Level Rise rates, a baseline estimate representing the minimum expected sea level change, an intermediate estimate, and a high estimate representing the maximum expected sea level change. Projecting the three rates of change provides a predicted low level rise of 0.12 meters (m) or approximately 0.39 ft, an intermediate level rise of 0.25 m or approximately 0.81 ft, and a high level rise of 0.66 m or approximately 2.17 ft. The impact of the low and intermediate level increases of 0.39 ft and 0.81 ft, respectively, would be inconsequential to the performance of the structure and the high level increase of 2.17 ft would only affect the performance of the structure during low probability events that exceeded the Mean Higher High Water (MHHW) level by more than 0.33 ft. Even during such low probability events, the structure will perform its intended purpose to train the river currents with the exception of that very small portion of the water column above the structure's crest. In addition, if over time the actual measured changes in relative sea level are closer to the Scenario III amounts or greater, then the structure's performance can easily be brought back to an optimal level by increasing the crest elevation by up to a foot without major expense. The salt marsh restoration design at Great Marsh Island is based on existing conditions, or current sea level, in order to achieve requisite elevations that would support low and high salt marsh as well as intertidal oyster beds. The restoration of these habitats cannot be performed using projected future sea level as the target species for these habitats would not be able to survive at current water levels. As an adaptive management measure to address future sea level rise, additional dredged material could be used when appropriate to increase the elevation of the Great Marsh Island restoration site and maintain salt marsh and other habitats.

8. In accordance with the Corps EC 1165-2-209 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 District Quality Control, Agency Technical Review, Policy and Legal Compliance Review, Cost Engineering Directory of Expertise Review and Certification, and Model Review and Approval. Given the nature of the project, an exclusion from the requirement to conduct a Type I Independent External Peer Review was granted on 23 September 2011.

9. Washington level review indicates the plan recommended by the reporting officers is technically sound, environmentally and socially acceptable, and on the basis of congressional

directives, economically justified. The plan complies with all essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation Studies. The recommended plan complies with other administration and legislative policies and guidelines. The views of interested parties, including federal, state and local agencies, have been considered. State and agency comments received during review of the final report/environmental assessment included concerns raised by the National Park Service related to channel realignment, unrecorded archaeological sites, cultural resources, and water quality within the Timucuan Ecological and Historical Preserve. These concerns were addressed through coordination and a multi-agency meeting and ultimately resolved in a Jacksonville District, USACE response dated February 27, 2012.

10. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that navigation improvements for Jacksonville Harbor Mile Point be authorized in accordance with the reporting officer's recommended plan at an estimated cost of $35,999,000 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. This recommendation is subject to the non-federal sponsor agreeing to comply with all applicable federal laws and policies including that the non-federal sponsor must agree with the following requirements prior to project implementation.

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

(1) Provide the non-federal share 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 ft; plus 25 percent of the total cost of construction of the GNFs attributable to dredging to a depth in excess of 20 ft but not in excess of 45 ft; plus 50 percent of the total cost of construction of the GNFs attributable to dredging to a depth in excess of 45 ft.

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

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 the GNFs less the amount of credit afforded by the Government for the value of the LERR is provided by the sponsor for the GNFs. If the amount of credit afforded by the Government for the value of LERR, and relocations, including utility relocations, provided by the sponsor equals or exceeds 10 percent of the total cost of construction of the GNFs, 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 LERR and relocations, including utility relocations, in excess of 10 percent of the total cost 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 operation and maintenance of the project over that cost which the federal government determines would be incurred for operation and maintenance if the project had a depth of 45 ft.

f. Accomplish all removals determined necessary by the federal Government other than those removals specifically assigned to the federal Government;

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

h. Hold and save the United States free from all damages arising from the construction or operation and maintenance of the project, any betterment, and the local service facilities, except for damages due to the fault or negligence of the United States or its contractors.

i. 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 are required, to the extent and in such detail as will properly reflect total cost 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 Code of federal Regulation (CFR), Section 33.20.

j. Perform, or ensure performance of, any investigations for hazardous substances that 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 United States Code 9601–9675, that may exist in, on, or under lands, easements,

right-of-ways, relocations and disposal areas (LERRD) that the federal government determines to be necessary for the construction or operation and maintenance of the GNFs. However, for lands, easements, or rights-of-way that the Government determines to be subject to the navigation servitude, only the Government shall perform such investigations unless the federal government provides the sponsor with prior specific written direction, in which case the sponsor shall perform such investigations in accordance with such written direction.

k. 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 LERRD that the federal government determines to be necessary for the construction or operation and maintenance of the project;

l. Agree, as between the federal Government and the non-federal sponsor, that the non-federal sponsor shall be considered the operator of the local service facilities for the purpose of CERCLA liability.

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

n. Comply with Section 221 of Public Law 91-611, Flood Control Act of 1970, as amended, (42 U.S.C. 1962d-5b) and Section 101(e) of the WRDA 86, Public Law 99-662, as amended, (33 U.S.C. 2211(e)) which provide that the Secretary of the Army shall not commence the construction of any water resources project or separable element thereof, until the sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element.

o. 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. 4601-4655) and the Uniform Regulations contained in 49 CFR Part 24, in acquiring lands, easements, and rights-of-way necessary for construction, operation, and maintenance of the project including those necessary for relocations, the borrowing of material, or the disposal of dredged or excavated material; and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

p. Comply with all applicable federal and state laws and regulations, including, but not limited to: Section 601 of the Civil Rights Act of 1964, Public Law 88-352 (42 U.S.C. 2000d), and Department of Defense Directive 5500.11 issued pursuant thereto; 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 U.S.C. 3141-3148 and 40 U.S.C. 3701-3708 (revising, codifying and enacting without substantive change the provisions of the Davis-Bacon Act (formerly 40 U.S.C. 276a et seq.), the Contract Work Hours and Safety Standards Act

(formerly 40 U.S.C. 327 et seq.), and the Copeland Anti-Kickback Act (formerly 40 U.S.C. 276c));

q. 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.

r. Not use funds from other federal programs, including any non-federal contribution required as a matching share therefore, to meet any of the sponsor's obligations for the project 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.

11. 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 the Congress, the State of Florida, the Jacksonville Port Authority (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.

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