DEPARTMENT OF THE ARMY
CHIEF OF ENGINEERS
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DAEN (1105-2-10a)

SUBJECT: Jacksonville Harbor Navigation Study Final Integrated General Reevaluation Report II and Supplemental Environmental Impact Statement, Duval County, Florida

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress the final integrated feasibility report and environmental impact statement on navigation improvements for Jacksonville Harbor, Duval County, Florida, located on the St. Johns River. It is accompanied by the report of the district and division engineer. This report was prepared as an interim response to a resolution from the Committee on Public Works and Transportation, United States House of Representatives, dated February 5, 1992. Preconstruction engineering and design activities for the Jacksonville Harbor, Duval County, Florida Navigation Project will continue under the authority provided by the resolution cited. The Port of Jacksonville is designated as a Strategic Port supporting the 832nd Transportation Battalion, as well as the Marines and Navy. It is also included in the President's "We Can't Wait" Initiative; Executive Order 13604 of March 22, 2012.

2. The reporting officers recommend a project that will contribute to the economic efficiency of commercial navigation. Based on an evaluation of alternative plan costs and economic benefits, the national economic development (NED) plan includes a channel depth of 45 feet with associated channel widening and turning basins. The non-federal sponsor, the Jacksonville Port Authority (JAXPORT), subsequently requested a locally preferred plan (LPP) of 47 feet deep with associated channel widening and turning basins. The LPP has positive net benefits and is economically justified. In accordance with U.S. Army Corps of Engineers (USACE) policy, the LPP was submitted for consideration to the Assistant Secretary of the Army for Civil Works (ASA-CW) and approved for consideration as the recommended plan on May 17, 2013. The recommended plan is the LPP and consists of the following improvements:

a) The project would be deepened from the existing 40-foot mean lower low water (MLLW) channel depth of the St. John's River to 47 feet MLLW from the entrance channel to approximately River Mile (RM) 13;

b) The following areas of widening are included as part of the new channel footprint for the LPP: Mile Point: Widen to the north by 200 feet for Cuts 8-13 (~(RM) 3-5), Training Wall Reach: widen to the south 100 feet for Cuts 14-16 (~RM 5-6) transitioning to 250 feet for Cut 17 (~RM 6) and back to 100 feet for Cuts 18-19 (~RM 6), and the St. Johns Bluff Reach: widen both sides of the channel varying amounts up to 300 feet for Cuts 40-41 (~RM 7-8);

c) The following turning basin areas are included in the recommended plan based on the ship simulation results: Blount Island: ~2,700 feet long by 1,500 feet wide located in Cut-42 (~RM 10) and Brills Cut: ~2,500 feet long by 1,500 feet wide located in Cut-45 (~RM 13).

d) Construction of the recommended plan involves dredging of approximately 18 million cubic yards of material. Fracturing (confined blasting) of consolidated sediments and underlying rock may be required prior to dredging. Based on analysis of the historical operation and maintenance (O&M) requirements and the proposed project expansion features, it is estimated that there will be an average annual increase of 137,000 cubic yards (CY) of shoal material to be dredged each year from the new project. All material dredged for construction is assumed to go to the ocean dredged material disposal site (ODMDS).

e) The following areas of advanced maintenance were identified; Area 1 (Entrance Channel to ~ River Mile 2) = Bar Cut-3 from Station 217+00 to Station 270+00 (Full Channel) plus Bar Cut-3 Station 270+00 to end/Station 300+00 (South side of channel or Range 0 to Range 380) plus Cut-4 entire length (South side of channel or Range 0 to Range 430) plus Cut-5 entire length (South side of channel or Range 0 to Range 455) plus Cut-6 entire length (South side of channel or Range 0 to Range 455); Area 2 (~River Mile 8) = Cut-41 Station 12+30 to Station 28+10 (North side of channel to include proposed widening or Range 0 to Range -500); Area 3 (~River Mile 9 to 11) = Cut-42 Station 19+79.05 to Station 135+00 (Full Channel); Area 4 (Adjacent to Cut-42) (~River Mile 10) = Entire Southern portion of Blount Island Turning Basin (Range -237.50 to Range -862.50); and Area 5 (~River Mile 13) = Entire Brills Cut Turning Basin (this covers the project channel by default from Cut-45 Station 3+18.43 to Station 28+18.43). Area 5 is the breakpoint where the project is going from the shallower and narrower 40-foot project depth to the new project depth of 47 feet which is deeper and will be wider with the incorporation of the Brill's Cut Turning Basin. It is expected that more shoaling will occur in this area as we have experienced historical increases in the Talleyrand area of the Terminal Channel where the depth goes from 34 feet to 40 feet. These areas represent similar surface areas to the previous advanced maintenance areas presented in the 2002 General Reevaluation Report (GRR) and also represent similar quantities of dredging. These items have been considered to maintain the lessened frequency of dredging in these areas.

f) An interagency assessment team was assembled to assist in conducting a Uniform Mitigation Assessment Method (UMAM) assessment for potential impacts and associated mitigation for the proposed deepening of Jacksonville Harbor. The team is composed of representatives from the following agencies: U.S. Environmental Protection Agency, USACE, Florida Department of Environmental Protection, Florida Fish and Wildlife Conservation Commission, National Marine Fisheries Service, and U.S. Fish and Wildlife Service. Numerous meetings and site visits were conducted to observe and discuss the characterization of the wetland areas/submerged aquatic vegetation (SAV), potential effects related to the proposed project and proposed compensatory mitigation. The effects assessment determined that the base

mitigation plan would offset impacts to wetlands (394.57 acres) and SAV (180.5 acres). On a functional value scale of 0-1, these resources would experience a functional loss of 0.1, which results in 39.46 units of compensatory mitigation for wetlands and 18.05 units of compensatory mitigation for SAV. Mitigation is required for wetlands and submerged aquatic vegetation affected by the deepening. A base mitigation plan, consisting of conservation land purchase of 638 acres of freshwater wetlands, uplands, river shoreline, and salt marsh wetlands has been proposed. The base mitigation plan total cost is $2,900,000. The USACE has determined that this plan would be sufficient to offset any minor effects that may occur as a result of the proposed project. As there were no discernible differences in the modeling results of impacts for the NED plan versus the recommended plan (LPP), there is no anticipated increase in mitigation needed for the LPP plan as compared to the NED plan. This total includes mitigation for fisheries effects.

g) Projected environmental impacts warrant initial mitigation (i.e. conservation land purchase) and monitoring during construction plus 1 year post construction. Although not required for the federal project, the non-federal sponsor has agreed to conduct additional monitoring and modeling efforts post construction at their cost. If based on the post construction monitoring the USACE determines that additional monitoring as part of the federal project is warranted, the USACE could share in the cost of the additional monitoring.

3. Project Cost Breakdown based on October 2013 Prices.

a) Project First Cost: The estimated project first cost is $600,900,000, which includes the cost of constructing the General Navigation Features (GNFs) and the lands, easements, rights of way, and relocations (LERR) estimated as follows: $600,200,000 for channel modifications, turbidity and endangered species monitoring, environmental mitigation, Planning Engineering and Design (PED), and Construction Management; and $700,000 for real estate administrative costs. The Jacksonville Port Authority is the non-federal cost-sharing sponsor for all features.

b) Estimated Federal and Non-federal Cost Shares: The estimated federal and non-federal shares of the project first cost are $362,000,000 and $238,900,000 respectively, as apportioned in accordance with the cost sharing provisions of Section 101 of WRDA 1986, as amended (33 U.S.C. 2211), as follows:

(1) The cost for the GNFs from greater than 20 feet to 45 feet MLLW will be shared at a rate of 75 percent by the government and 25 percent by the non-federal sponsor, plus

(2) 100 percent of the costs attributable to dredging to a depth below -45 feet MLLW;

(3) In addition to the costs outlined in sub-paragraph (1) above, the project first cost includes federal administrative costs for lands, easements, rights of way and relocations

estimated at $700,000. The non-federal portion of this cost is 25% of the administrative costs,

(4) $200,000, all of which 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 $238,900,000 pursuant to Section 101(a)(2) of WRDA 1986, as amended, the non-federal sponsor must pay an additional 10% of the costs for NED GNFs of the project, $50,500,000, in cash over a period not to exceed 30 years, with interest. The value of the lands, easements, rights-of-way and relocations 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. It is estimated that there will be an average annual increase of 137,000 cubic yards (CY) of shoal material to be dredged each year from the new project with an added annual O&M cost of $1,100,000. Much of the increase is due to the construction of two new turning basins that will be needed to accommodate the post-panamax container ships. With the incorporation of advanced maintenance zones into these turning basins, it may be possible to reduce the frequency of dredging required and thus reduce contract costs and equipment mobilization costs.

e) Associated Costs. Estimated associated federal costs of $1,300,000 include navigation aids, (a U.S. Coast Guard expense).

f) Local Service Facilities. The associated cost for local service facilities is approximately $82 million and is primarily for upgrading the bulkheads and berths at facilities which benefit from the deeper channel. These costs are 100% non-federal and are not included in the first total cost of the recommended plan.

g) 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 GNFs construction costs, the value of lands, easements, and rights-of-way and the value of relocations provided under Section 101(a)(3) of WRDA 1986, as amended. Accordingly, as set forth in paragraph 4.a. above, based on Price Level FY 2014, the estimated project first cost for these purposes is $600,900,000 with a federal share of $362,000,000 and a non-federal share of $238,900,000.

5. Based on October 2013 (FY2014) price levels, a 3.5-percent discount rate, and a 50-year period of analysis, the total equivalent average annual costs of the project are estimated to be $33,700,000. The average annual equivalent benefits are estimated to be $89,700,000. The average annual net benefits are $56,000,000. The benefit-to-cost ratio for the recommended plan is 2.7.

6. The federal government would be responsible for operation and maintenance of the navigation improvements proposed in this report upon completion of the construction contract.

The federal government currently maintains the existing project. The contractor would be responsible for all maintenance during the construction contract.

7. Risk and uncertainty were evaluated for economic benefits, costs and sea level rise. Economic sensitivities examined the effects of commodity forecasts which had lower growth rates or capped the growth earlier in the period of analysis. In accordance with the Corps Engineering Circular on sea level change the study analyzed four sea level rise rates; historic (baseline), intermediate, and high. The historic sea level rise rate was determined to be 0.0078 ft/year. The baseline, intermediate, and high sea level rise values at the end of the 50-year period of analysis were projected to be 0.39 ft, 0.87 ft, and 2.4 ft, respectively. In general, regional sea level rise (baseline, intermediate, and high) will not affect the function of the project alternatives or the overall safety of the design vessel. There is expected to be a minor impact to non-federal structures or berths that the non-federal sponsor would manage without effects to the project. The majority of salinity changes will occur due to sea level change; with only minor impacts attributable to the project.

8. In accordance with the Corps 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 District Quality Control (DQC), Agency Technical Review (ATR), Policy and Legal Compliance Review, Cost Engineering Directory of Expertise (DX) Review and Certification, Independent External Peer Review (IEPR), and Model Review and Approval. The IEPR was completed by Battelle Memorial Institute. A total of 13 comments were documented. The IEPR comments identified concerns in areas of the explanation of the economics, hydraulic analysis, and environmental analyses. This resulted in expanded narratives throughout the report to support the decision-making process and justify the recommended plan. All comments from the above referenced reviews have been addressed and incorporated into the final documents. Overall the reviews resulted in improvements to the technical quality of the report.

9. Washington level review indicates that 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 1983 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. The US Environmental Protection Agency (USEPA) submitted a comment regarding potential impacts of the project to

the existing source water supply, and the consequences for the Jacksonville water utility should the 8.45 million gallons per day (MGD) currently being withdrawn from the surficial aquifer have to be supplied by the Floridan aquifer. The Corps has determined that the existing report adequately addresses the effects to the existing water supply. This conclusion is based on the results of a USGS study that determined that the project will not significantly increase the surficial aquifer salinity exept at the boundary of the river channel where the surficial aquifer is likely already impacted from exposure to the high river salinity. The current consumptive use permit for the water utility permits a maximum base allocation of 142 MGD by the year 2021, thus, should an additional 8.45 MGD be required, additional pumping capacity would be available under the existing permit. Additionally, the USEPA, US Department of the Interior (USDOI), and Florida Department of Environmental Protection (FLDEP) requested that 10 years of post construction monitoring be done, and asked to be included as part of a Corrective Action Team (CAT) that would analyze monitoring results and advise the USACE on future potential actions related to monitoring and mitigation. The USACE will include these agencies as part of the CAT. The USACE has committed to cost share in monitoring efforts during the period of construction and one year post construction. In addition, the Port of Jacksonville has committed to funding on their own additional monitoring efforts up to 10 years post construction. The USACE will potentially cost share in the additional monitoring if we determine it is warranted based on the initial post construction monitoring results.

10. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that navigation improvements for Jacksonville Harbor be authorized in accordance with the reporting officers' recommended plan at an estimated first cost of $600,900,000 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, during the periods of design and construction, funds necessary to make its total contribution for commercial navigation equal to:

(1) 25 percent of the cost of design and construction of the GNFs attributable to dredging to a depth in excess of -20 feet MLLW but not in excess of -45 feet MLLW, plus

(2) 100 percent of the costs attributable to dredging to a depth below -45 feet MLLW.

b) Provide all lands, easement, and rights-of-way (LER), including those necessary for the borrowing of material and placement of dredged or excavated material, and perform or assure 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. Provide and maintain during the authorized life of the project the mitigation lands (approximately 638 acres) determined to be required for mitigation for impacts for the project.

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 NED GNFs less the amount of credit afforded by the government for the value of the LER and relocations, 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 LER, and relocations, including utility relocations, provided by the non-federal sponsor equals or exceeds 10 percent of the total cost of construction of the GNFs, the non-federal sponsor shall not be required to make any contribution under this paragraph, nor shall it be entitled to any refund for the value of LER and relocations, 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 government.

e) In the case of project features greater than -45 feet MLLW in depth, provide 100 percent of the excess cost of operation and maintenance of the project over that cost which the government determines would be incurred for operation and maintenance if the project had a depth of 45 feet.

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

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

h) 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 USC 9601–9675, that may exist in, on, or under LER that the 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 investigation unless the government provides the non-federal sponsor with prior specific written direction, in which case

the non-federal sponsor shall perform such investigations in accordance with such written direction.

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

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

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.

THOMAS P. BOSTICK
Lieutenant General, USA
Chief of Engineers