112th Congress, 2nd Session – – – – – – – – – – – – – House Document 112–135

JACKSONVILLE HARBOR MILE POINT NAVIGATION STUDY, DUVAL COUNTY, FLORIDA

COMMUNICATION

FROM

THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS), THE DEPARTMENT OF DEFENSE

TRANSMITTING

THE FINAL INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

SEPTEMBER 10, 2012.—Referred to the Committee on Transportation and Infrastructure and ordered to be printed

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HOUSE DOCUMENT NUMBER 112- 135

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON, DC 20310-0108

REPLY TO
ATTENTION OF

AUG 16 2012

Honorable John A. Boehner
Speaker of the House
of Representatives
Washington, D.C. 20515

Dear Mr. Speaker:

In response to a Congressional resolution adopted on March 24, 1998, by the House Committee on Transportation and Infrastructure, I am providing the Final Integrated Feasibility Report and Environmental Assessment (IFR/EA) for the Jacksonville Harbor Mile Point Navigation Study, Duval County, Florida Project. The Congressional resolution authorizes the review of the report of the Chief of Engineers on Jacksonville Harbor, Florida, published as House Document 214, Eighty-ninth Congress, 1st Session and other pertinent reports to determine whether any modifications of the recommendations contained therein are advisable at the present time in the interest of navigation and related purposes, with particular reference to erosion of the Mile Point shoreline. Congress added funding in the appropriations for Fiscal Year (FY) 2000 to begin the reconnaissance phase of the feasibility study which was completed in 2001.

The enclosed Jacksonville Harbor Mile Point Navigation Study, Duval County, Florida, dated March 2012, meets the requirements of the Congressional resolution by presenting the results of a navigation study for Mile Point and finds that the project is technically sound, environmentally acceptable, and economically justified. The goal of the proposed project is to reduce 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. The recommended plan includes the relocation of the Mile Point training wall, which involves removal of the western 3,110 feet 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 feet) and relocated eastern leg (~2,050 feet), disposal of dredged material at the Great Marsh Island as the least cost disposal alternative, and construction of a flow improvement channel to offset project induced adverse impacts.

The estimated project first cost is $35,999,000,which includes the cost of constructing the general navigation features and the value of lands, easements, rights-of-way and relocations 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 lands, easements, rights-of-way, and relocations. There are no additional costs of operation and maintenance for this recommended plan. The recommended project is the National Economic Development (NED) plan.

The Jacksonville Port Authority is the non-Federal cost-sharing sponsor for all features and is legally capable of fulfilling the requirements to be the non-Federal sponsor. Cost sharing is

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applied in accordance with the provisions of Section 101 of the Water Resources Development Act (WRDA) of 1986, as amended (33 U.S.C. 2211), as follows: the costs of the general navigation features at a project depth between 20 feet but not in excess of 45 feet are shared at a rate of 75 percent Federal and 25 percent by the non-Federal sponsor. Accordingly, the estimated Federal and non-Federal shares of the project first cost are $26,998,000 and $9,001,000, respectively. The Jacksonville Port Authority supports the Jacksonville Harbor Mile Point Navigation Project.

Based on October 2011 price levels, a discount rate of 4 percent, and a 50-year period of economic analysis, the average annual benefits are estimated to be $2,440,000 and the average annual costs of the project are estimated to be $1,737,000. The recommended plan has net benefits estimated at $703,000 and a benefit-to-cost ratio of 1.4 to 1. The recommended plan has been formulated to avoid, minimize and mitigate for potential environmental losses.

The Office of Management and Budget advises that there is no objection to the submission of the report to the Congress. However, OMB also advises that should Congress decide to authorize this project for construction, to please be aware that the project will be required to compete for funds with other proposed investments considered in future budgets. A copy of OMB's letter dated August 7, 2012 is enclosed. I am providing a copy of my letter to the House Committee on Transportation and Infrastructure Subcommittee on Water Resources and Environment and the House Committee on Appropriations Subcommittee on Energy and Water Development. I am providing an identical letter to the President of the Senate.

Very truly yours,

Jo-Ellen Darcy
Assistant Secretary of the Army
(Civil Works)

Enclosures

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Enclosures
1. Report of the Chief of Engineers, April 30, 2012
2. OMB Clearance Letter, August 7, 2012
3. Department of the Interior Letter to USACE, January 27, 2012
4. USACE Response to Department of the Interior, February 27, 2012
5. Department of the Interior Letter to USACE, February 29, 2012
6. Jacksonville Port Authority Letter to USACE, September 13, 2011
7. Integrated Feasibility Report and Environmental Assessment, March 2012

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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

Attachment 1

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

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(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.

MERDITH W.B. TEMPLE
Major General, USA
Acting Commander

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF MANAGEMENT AND BUDGET
WASHINGTON, D.C. 20503

August 7, 2012

The Honorable Jo-Ellen Darcy
Assistant Secretary of the Army (Civil Works)
108 Army Pentagon
Washington, DC 20310-0108

Dear Ms. Darcy:

As required by Executive Order 12322, the Office of Management and Budget has reviewed a March 2012 Army Corps of Engineers (Corps) feasibility study of the Jacksonville Harbor (Mile Point) Project, Duval County, Florida, with a first cost of $36.0 million (October 2011 prices).

Based on an analysis of costs and benefits, the Corps estimated that the benefit-cost ratio for the project is 1.4 to 1 at a discount rate of four percent, which is the discount rate that the Corps is required to use for FY 2012 under section 80 of the Water Resources Development Act of 1974 to evaluate and formulate its proposed water resources projects. According to the Corps, the equivalent benefit-cost ratio is 0.85 to 1 at a seven percent discount rate. This is the discount rate that the Administration uses in the Budget to measure the performance of Corps construction projects whose primary purpose is to provide an economic return to the Nation.

The Office of Management and Budget does not object to your submitting this report to Congress. However, when you do so, please advise the Congress that, should the Congress authorize this project for construction, the project would need to compete with other proposed investments for funding in future budgets.

Sincerely,

Paul Shawcross
Acting Deputy Associate Director
Energy, Science, and Water

Attachment 2

United States Department of the Interior

NATIONAL PARK SERVICE
Southeast Regional Office
Atlanta Federal Center
1924 Building
100 Alabama St., SW.
Atlanta, Georgia 30303

IN REPLY REFER TO:

(SER-PC)

JAN 27 2012

Samantha Borer
U.S. Army Corps of Engineers
Planning Division
P.O. Box 4970
Jacksonville Florida 32232-0019

Dear Ms. Borer:

The National Park Service (NPS) appreciates the opportunity to review the "Draft Integrated Feasibility Report and Environmental Assessment (EA) on Jacksonville Harbor (Mile Point) Navigation Study in Duval County, Florida." In accordance with 40 CFR Part 1503, the NPS offers a number of comments on the Draft reports for your consideration.

The Timucuan Ecological and Historic Preserve (Preserve) was authorized by Congress in 1988 through Public Law 100-249. A unit of the NPS, the Preserve was designated to protect and interpret the ecologic and historic resources of the area. The proposed project area contains significant areas of salt marsh and open waters enjoyed for their natural resource values, recreational fishing, and wildlife benefits. There are also potentially significant historic resources and prehistoric resources in the project area that could potentially be impacted by the proposed project.

The management of the national park system and NPS programs is guided by the Constitution, public laws, treaties, proclamations, executive orders, regulations, policies and directives of the Secretary of the Interior and the Director of the NPS. Neither the Draft Feasibility Report nor the EA mention or acknowledge the NPS Management Policies. The NPS Management Policies can be found at http://www.nps.gov/policy/mp2006.pdf. Given the location of this project, we recommend that the EA address the extent to which the proposed action is consistent with these policies.

Because this project is located within the authorized boundary of the Preserve, NPS has a responsibility to ensure that the project will not adversely impact these resources or values. We have a number of concerns that the project, as currently described in the EA, could have significant impacts to archeological sites, water quality, and jurisdictional wetlands within the Preserve boundary. Unfortunately the EA does not contain enough information for the NPS to adequately determine if there is potential for adverse effects or to recommend any potential mitigation. In the absence of detailed analysis, it is difficult to determine that a Finding of No

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Attachment 3

Significant Impact would be appropriate. Therefore, the NPS requests that the U.S. Army Corps of Engineers prepare and circulate a revised EA or an Environmental Impact Statement according to CEQ regulations (40 CFR Part 1502).

In addition to the general comments here provided, a list of specific comments is enclosed. We request the environmental analysis be revised to address these concerns. If you have any questions concerning these comments please contact Barbara Goodman, Superintendent, Timucuan Ecological and Historic Preserve, at 904-221-5568 or Barbara_Goodman@nps.gov or Anita Barnett, National Park Service, Southeast Regional Office, Planning and Compliance Division, at 404-507-5706 or Anita_Barnett@nps.gov.

Thank you for the opportunity to provide comments.

Sincerely,

Gordon Wissinger
Acting Regional Director
Southeast Region

Enclosure

Specific Comments on the Draft Integrated Feasibility Report and Environmental Assessment on Jacksonville Harbor (Mile Point) Navigation Study in Duval County, Florida:

1. On Page 6 of the Draft Feasibility Report and Environment Assessment, what actions would be anticipated in the realignment of the channel? Is this included in an adaptive management scenario along with the cost estimate and fund source?

2. On Page 8 of the Draft Feasibility Report and Environment Assessment, there may be unrecorded archaeological sites reported on islands to the south of the training wall. Unconfirmed reports indicate several historic era sites have been located on these islands, possibly related to French and Spanish contact and colonial eras as well as prehistoric sites. The release of the water being diverted by the training wall has the potential to cause erosion to matrix contained within the unrecorded sites resulting in the potential loss of valuable scientific information. If these sites are as reported, they contain information about eras in Florida and Southeastern U.S. History critical to our understanding of the European advance into the Americas. Further action is recommended by the agencies overseeing these land masses to ascertain the reliability of the reports concerning the sites on these islands. We recommend preparing Phase I and Phase II archaeological surveys of these properties to resolve these concerns.

3. On Page 12 of the Draft Feasibility Report and Environment Assessment, correction to name, National Park Service, Timucuan Ecological and Historic Preserve.

4. On Page 21 of the Draft Feasibility Report and Environment Assessment, the report fails to mention that the Mile Point project is entirely within the Timucuan Ecological and Historic Preserve authorized by Congress in 1988 through Public Law 100-249. The Timucuan Ecological and Historic Preserve was designated to protect and interpret the ecological and historic resources of the area. The proposed project area contains significant areas of salt marsh and open waters enjoyed for their natural resource values, recreational fishing, and wildlife benefits. Based on unconfirmed reports, there are also potentially significant historic resources and prehistoric resources in the project area.

5. The Draft Feasibility Report and Environment Assessment consider the potential effects of projected future sea-level rise on the project by discussing a range of potential sea level changes versus the height of the "affected structure," i.e. the constructed Mile Point training wall(s). However, there is no discussion regarding the projected sea-level rise on Chicopit Bay, the Flow Improvement Channel, or the restored Great Marsh Island. The Western Leg of the training wall to be constructed may provide some protection to the northern side of Great Marsh Island as sea-level rises, but Chicopit Bay should also experience a rise in water level as sea-level rises which may impact the southern shore of Great Marsh Island. We recommend the discussion of the effects of projected future sea-level rise also consider the effects of the projected sea-level change on Great Marsh Island by comparing the proposed elevations of the restored island to the estimated future sea levels. Large areas of the restored island may be inundated by at least one of the estimated sea level changes. Potential changes to the plant community, potential vertical accretion of sediments, and any potential additional settling and subsidence need to be addressed and factored in.

6. The Draft Feasibility Report and Environment Assessment do not discuss plans to monitor the effects of constructing the Flow Improvement Channel and the resulting water circulation changes or potential water quality changes within Chicopit Bay. The proposed Flow Improvement Channel will also pass close to the salt marshes on the northern shore of Greenfield Islands and may cause impacts to these areas. We recommend that monitoring be conducted for at least 3 years after project construction for water circulation and water quality within Chicopit Bay and changes in the salt marsh (erosion, accretion) along the northern shoreline of Greenfield Islands. Please provide the Superintendent and the Southeast Regional Planning and Compliance Division with copies of the monitoring plan as it is developed, and also with copies of the data and results of the monitoring. Address them to: Superintendent, Timucuan Ecological and Historic Preserve, 12713 Fort Caroline Road, Jacksonville, FL, 32225, and Anita Barnett, National Park Service, 100 Alabama Street S.W., 1924 Building, Atlanta, GA 30303.

7. In appendix A, the engineering appendix Plate A-7 illustrates holes for 'tidal exchange' in the concrete wall. How big are these holes? Tidal movement of juvenile aquatic species is important; therefore, the sizes of the holes need to be adequate for such movement of concerned species.

8. In appendix A, The Jurisdiction Memo on wetlands in the appendices indicates that the wetland delineation is only considered valid for 5 years. This was performed in 2005 and therefore no longer should be considered valid, especially in light of constant changes from erosional forces noted throughout the Environmental Assessment. It should, however, provide a good general idea of where wetlands currently exist.

9. In appendix D, under item #6 in the Mitigation Plan, the 4th bullet states that cover will be used to determine if the restored plant community is similar to those nearby. How much variation will be allowed in this analysis? This needs to be clearly spelled out. Also, the methodology is not adequately discussed. What methods will be employed? There are several standard methods to choose from that will be acceptable

10. Historically, after dredging projects, the Preserve's water quality has been degraded and multiple red tide events occurred contributing to large fish kill events. The shoaling that occurs in the Fort George River is the result of a history of USACE's installation of engineering structures in order to maintain the St. Johns River as a nationally significant navigation channel. The NPS has concerns that the proposed action could exacerbate these ongoing problems. There is no information in the Environmental Assessment that discusses these potential adverse cumulative impacts. The NPS recommends inclusion of additional analyses to address these concerns

11. Please provide threshold impact definitions, including the definition of significant impact for each impact topic, as well as the data and analysis used to arrive at these conclusions.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

Planning and Policy Division
Environmental Branch

FEB 27 2012

Mr. Gordon Wissinger
National Park Service
Southeast Regional Office
Atlanta Federal Center
1924 Building
100 Alabama St., SW.
Atlanta, GA 30303

Dear Mr. Wissinger,

The U.S. Army Corps of Engineers-Jacksonville District (Corps) provides the attached response to your letter dated January 27, 2012 (letter) in which your agency presented comments on the Draft Integrated Feasibility Report and Environmental Assessment (DIFR/EA) for the Jacksonville Harbor (Mile Point) Navigation Study, Duval County, Florida. My staff and I are committed to resolving any outstanding concerns as they relate to National Park Service (NPS) resources including the Timucuan Ecological and Historic Preserve.

The Corps recently concluded a productive meeting with Mr. Ben West, Ms. Barbara Goodman, and Ms. Shauna Allen of the NPS, and we look forward to our continued collaboration on the Mile Point project and future Jacksonville District efforts.

We look forward to your reply to assure we have addressed all your concerns. If you require any additional clarification of the responses herein, please contact Mr. Jason Spinning at his email address, jason.j.spinning@usace.army.mil, or telephone at 904-232-1231.

Sincerely,

Eric P. Summa
Chief, Environmental Branch

Enclosure

Attachment 4

CF:
Ms. Barbara Goodman, Timucuan Ecological and Historic Preserve, 12713 Fort Caroline Road, Jacksonville, FL 32225
Mr. Paul Anderson, Jacksonville Port Authority, P.O. Box 3005, 2831 Tallyrand Avenue, Jacksonville, FL 32206

Please find our responses to your comments below.

Comment from Cover Letter: "Neither the Draft Feasibility Report nor the EA mention or acknowledge the NPS (National Park Service) Management Policies. The NPS Management Policies can be found at http://www.nps.gov/policy/mp2006.pdf. Given the location of this project, we recommend that the EA address the extent to which the proposed action is consistent with these policies."

Response: The Jacksonville Harbor (Mile Point) Navigation Study was congressionally authorized by Resolution, Docket 2550, of the House Committee on Transportation and Infrastructure and adopted March 24, 1998 for Mile Point, Florida. This authorization states the following:

> Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That, the Secretary of the Army is requested to review the report of the Chief of Engineers on Jacksonville Harbor, Florida, published as House Document 214, Eighty-ninth Congress, 1st Session, and other pertinent reports to determine whether any modifications of the recommendations contained therein are advisable at the present time in the interest of navigation and related purposes, with particular reference to erosion of the Mile Point shoreline.

Congress added funding in the appropriations for Fiscal Year (FY) 2000 to begin the reconnaissance study which was completed in 2001. The feasibility study proceeded under that authorization in 2003. As this is a congressionally authorized project which directs the Secretary of Army to determine whether any modifications to Jacksonville Harbor are recommended, the U.S. Army Corps of Engineers-Jacksonville District (Corps) believes that the Mile Point study is consistent, to the greatest extent practicable, with the laws and rules governing this activity. For clarification, the uplands as well as the wetlands within the proposed Mile Point project footprint are owned by the U.S. Navy, and the Corps maintains the right to regulate navigable waterways within the project footprint per Federal navigational servitude. However, the Corps acknowledges that the project footprint is also located within the boundaries of the Timucuan Ecological and Historic Preserve (TEHP). As we have recently discussed with NPS staff, the project would provide substantial environmental benefits, i.e. restoration of salt marsh, oyster habitat, tidal channels, and coastal strand at Great Marsh Island as well as restoration of the natural flow-way from Mt. Pleasant Creek to the Intracoastal Waterway through Chicopit Bay. The Corps looks forward to working with NPS technical staff to make this restoration a success.

Comment from Cover Letter: "Because this project is located within the authorized boundary of the Preserve, NPS has a responsibility to ensure that the project will not adversely impact these resources or values. We have a number of concerns that the project, as currently described in the EA, could have significant impacts to archaeological sites, water quality, and jurisdictional wetlands within the Preserve boundary. Unfortunately the EA does not contain enough information for the NPS to adequately determine if there is potential for adverse effects or to recommend any potential mitigation.

In the absence of detailed analysis, it is difficult to determine that a Finding of No Significant Impact would be appropriate. Therefore, the NPS requests that the U.S. Army Corps of Engineers prepare and circulate a revised EA or an Environmental Impact Statement according to CEQ regulations (40 CFR Part 1502)."

Response: Your concerns that the proposed project may affect archaeological sites, water quality, and jurisdictional wetlands will be addressed in our subsequent responses. However, we would like to comment on your statement regarding whether a Finding of No Significant Impact is appropriate for this study. This determination was made in compliance with our regulations, ER 200-2-2. The Draft Integrated Feasibility Report and Environmental Assessment (DIFR/EA) were also reviewed by the U.S. Environmental Protection Agency (EPA). As you may be aware, EPA has a unique responsibility in the NEPA review process. Under Section 309 of the Clean Air Act, EPA is required to review and publicly comment on the environmental impacts of major federal actions. If EPA determines that the action is environmentally unsatisfactory, it is required by Section 309 to refer the matter to the Council on Environmental Quality. EPA concurred with our preparation of an EA and Finding of No Significant Impact for this study.

Comment #1: "On page 6 of the Draft Feasibility Report and Environmental Assessment, what actions would be anticipated in the realignment of the channel? Is this included in an adaptive management scenario along with the cost estimate and fund source?"

Response: As there is no statement that addresses realignment of the channel on page 6 of the DIFR/EA, you may be referring to our statement regarding realignment of the Intracoastal Waterway (IWW) on p. IV. The only action that may result from this realignment is the remarking of the IWW by the U.S. Coast Guard (USCG). We would like to also mention that there is a statement regarding realignment of the training wall on p. V. The actions that would result from the realignment of the wall are described in Chapters 5, 6, and 7 and further detailed in Appendix A-Engineering Design, Cost Estimates, and Cost Risk Analysis. An adaptive management scenario or plan along with the cost estimate and funding sources has not been prepared. However, the USCG would be responsible for maintaining any channel markers within the IWW. Maintenance of the realigned training wall would be authorized and funded through the Corps' Operations and Maintenance Program for the federally authorized Jacksonville Harbor project.

Comment #2: "On Page 8 of the Draft Feasibility Report and Environmental Assessment, there may be unrecorded archaeological sites reported on islands to the south of the training wall. Unconfirmed reports indicate several historic era sites have been located on these islands, possibly related to French and Spanish contact and colonial eras as well as prehistoric sites. The release of the water being diverted by the training wall has the potential to cause erosion to matrix contained within the unrecorded sites resulting in the potential loss of valuable scientific information. If these sites are as reported, they contain information about eras in Florida and Southeastern U.S. History critical to our understanding of the European advance into the Americas. Further action is recommended by the agencies overseeing these land masses to ascertain the reliability of the reports concerning the sites on these islands.

We recommend preparing Phase I and Phase II archaeological surveys of these properties to resolve these concerns."

Response: Based on the cultural resource survey and follow up diver identification investigation conducted for the Jacksonville Harbor deepening project (which included the proposed Mile Point project), a submerged prehistoric site has been identified within the project area. This site is located on Mayport Naval Station property; it is within the designated Timucuan Ecological and Historic Preserve boundaries. The islands south of the training wall, that might be affected by erosion, are all covered by dredge spoil placed in the early and middle of the twentieth century. The cultural resource survey conducted for the project established the "state of the art" for conducting underwater cultural resource surveys. It was the first such survey to identify buried features representing potential prehistoric habitation sites that were confirmed by diver identification. A second potential underwater prehistoric target was investigated near the mouth of Pablo Cr. with negative results. The Mayport Naval Air Station has conducted a "Phase I" survey for archeological sites on its property which includes the islands in question as well as the Timucuan Ecological and Historic Preserve's Phase I and II cultural resource surveys which reportedly cover this area. Additionally Corps archeologists have visited the islands in question and discovered no evidence of prehistoric sites.

The Corps has heard of the unsubstantiated reports of potentially significant historic materials from the project area. However, the individual refused to talk with a professional archeologist, or provide pictures of the reported artifacts. These reports include an assertion that the original "Ribault" monument is exposed on the island and that the individual actually sat on it. The individual also indicated that large amounts of French and Spanish artifacts were being looted and sold from these areas. If this were a credible report it would be the responsibility of the U.S. Navy who has jurisdiction to pursue, the Timucuan Ecological and Historic Preserve may also have responsibility under their operation and management plan; however the Corps of Engineers has no ARPA responsibility for this area. The Corps knows that there is a very active professional research program that is looking for any potential evidence of the French in the area. This investigation would have found evidence of such rumored activity. At this point two artifacts attributed to the French were recovered in the 1970's from dredge spoil; this dredge spoil came from the vicinity of the Fort Caroline replica. This research project also investigated a couple of artifacts recovered from private property in the Fort Caroline area. There has been no credible evidence of prehistoric or colonial period historic properties being identified on the spoil covered islands in the Mile Point area.

The Corps has conducted a complete Phase I survey and identification of the Area of Potential Effect identified for this undertaking. This survey identified two potential prehistoric sites; a follow up evaluation identified the presence of a prehistoric site (8DU21118) in the proposed Great Marsh Island salt marsh restoration area. This site was radio-carbon dated to 980+/-40 BP (Cal 970 to 1110 A.D., 840 to 980 BP). The second site is an Archaic age site located west of the Mile Point project area. The Corps determined that both sites were eligible for listing on the National Register of Historic Places.

The Corps also determined that the existing condition was having an adverse effect on the Mile Point site (8DU21118) and that the preferred alternative of creating a salt marsh behind a retaining wall would have "no adverse effect" on the site. No evidence of cultural material was recovered from the second potential target. The Florida State Historic Preservation Officer concurred with the Corps' determination that the survey was complete and that the Mile Point project would have "no adverse effect" on historic properties eligible for listing on the National Register of Historic Places. Consultation in accordance with Section 106 of the National Historic Preservation Act has been completed. As requested, copies of the cultural resources survey conducted by the Corps have been provided to TEHP and we look forward to future collaboration on upcoming projects.

Comment #3: "On Page 12 of the Draft Feasibility Report and Environment Assessment, correction to name, National Park Service, Timucuan Ecological and Historic Preserve."

Response: Reference in the DIFR/EA shall be changed to National Park Service, Timucuan Ecological and Historic Preserve.

Comment #4: "On Page 21 of the Draft Feasibility Report and Environment Assessment, the report fails to mention that the Mile Point project is entirely within the Timucuan Ecological and Historic Preserve authorized by Congress in 1988 through Public Law 100-249. The Timucuan Ecological and Historic Preserve was designated to protect and interpret the ecological and historic resources of the area. The proposed project area contains significant areas of salt marsh and open waters enjoyed for their natural resource values, recreational fishing, and wildlife benefits. Based on unconfirmed reports, there are also potentially significant historic resources and prehistoric resources in the project area."

Response: The presence of Timucuan Ecological and Historic Preserve is mentioned on p. 14 of the DIFR/EA. This reference shall be updated per our responses in this letter.

Comment #5: "The Draft Feasibility Report and Environment Assessment consider the potential effects of projected future sea-level rise on the project by discussing a range of potential sea level changes versus the height of the "affected structure, "i.e. the constructed Mile Point training wall(s). However, there is no discussion regarding the projected sea-level rise on Chicopit Bay, the Flow Improvement Channel, or the restored Great Marsh Island. The Western Leg of the training wall to be constructed may provide some protection to the northern side of Great Marsh Island as sea level rises, but Chicopit Bay should also experience a rise in water level as sea level rises which may impact the southern shore of Great Marsh Island. We recommend the discussion of the effects of projected future sea-level rise also consider the effects of the projected sea-level change on Great Marsh Island by comparing the proposed elevations of the restored island to the estimated future sea levels. Large areas of the restored island may be inundated by at least one of the estimated sea level changes. Potential changes to the plant community, potential vertical accretion of sediments, and any potential additional settling and subsidence need to be addressed and factored in."

Response: The Western Leg of the training should protect the restoration of Great Marsh Island from future erosion. However, the wall would not protect the island from inundation due to future sea level rise because the wall would not be impermeable, plus the other three sides of the restoration site would be open.

The entire project area, including TEHP, would be affected by future sea level rise. Per our coordination with Corps HQ in 2011, we have added language in Appendix D-Mitigation Plan and Incremental Analysis which states that supplemental dredged material could be placed within the Great Marsh Island restoration site to compensate for future sea level rise. This would be performed in order to maintain an elevation that would support salt marsh.

Comment #6: "The Draft Feasibility Report and Environment Assessment do not discuss plans to monitor the effects of constructing the Flow Improvement Channel and the resulting water circulation changes or potential water quality changes within Chicopit Bay. The proposed Flow Improvement Channel will also pass close to the salt marshes on the northern shore of Greenfield Islands and may cause impacts to these areas . We recommend that monitoring be conducted for at least three years after project construction for water circulation and water quality within Chicopit Bay and changes in the salt marsh (erosion, accretion) along the northern shoreline of Greenfield Islands. Please provide the Superintendent and the Southeast Regional Planning and Compliance Division with copies of the monitoring plan as it is developed, and also with copies of the data and results of the monitoring. Address them to: Superintendent, Timucuan Ecological and Historic Preserve, 12713 Fort Caroline Road, Jacksonville, FL, 32225, and Anita Barnett, National Park Service, 100 Alabama Street S.W., 1924 Building, Atlanta, GA 30303."

Response: Based on our coordination with the Florida Department of Environmental Protection (DEP), as well as the public comment we received during the designated review period of the DIFR/EA, the Corps has agreed to monitor the Flow Improvement Channel for 5 years. Meetings with the DEP have included discussion of how the monitoring would be conducted, and this plan is still under development. It is the Corps' position that the Flow Improvement Channel needs to provide capacity to accommodate the range of tidal variation for this area, and this was based on our tidal prism analysis which is included in the DIFR/EA (p. 76). The Corps agrees to coordinate with the NPS during future state permitting activities. We will also provide NPS with the data and results of the future monitoring.

Comment #7: "In appendix A, the engineering appendix Plate A-7 illustrates holes for 'tidal exchange' in the concrete wall. How big are these holes? Tidal movement of juvenile aquatic species is important; therefore, the sizes of the holes need to be adequate for such movement of concerned species."

Response: As a point of clarification, the Corps is considering different types of structures that could be used for the Western Leg of the training wall. One structure that could be used is a concrete unit which is pyrimid shaped and hollow on the inside.

In the event that such a structure is used, then the Corps has agreed with the U.S. Fish and Wildlife Service to limit the size of the openings within these concrete units to no more than 8 inches in diameter, and/or grating of openings larger than 8 inches. This size would be used in order to protect manatees from getting wedged within an opening. Whatever structure is used to build the Western Leg of the Training Wall it will allow for tidal exchange.

Comment #8: "In appendix A, The Jurisdiction Memo on wetlands in the appendices indicates that the wetland delineation is only considered valid for 5 years. This was performed in 2005 and therefore no longer should be considered valid, especially in light of constant changes from erosional forces noted throughout the Environmental Assessment. It should, however, provide a good general idea of where wetlands currently exist."

Response: The memo, which was prepared by the Corps, does reference that the wetland delineation for the area in question (Helen Cooper Floyd Park) was considered valid for 5 years. Therefore, in the fall of 2011, the Corps had the wetland line re-delineated by a wetland scientist and survey team. As expected, there was no significant change in the line. This area continues to be relatively stable. On the other hand, Great Marsh Island has lost much of its marsh area, and continues to actively erode, as noted in the DIFR/EA. Also, as noted in the DIFR/EA, the northern shoreline of the river's channel, aka Mile Point, has experienced erosion in past years as well.

Comment #9: "In appendix D, under item #6 in the Mitigation Plan, the 4th bullet states that cover will be used to determine if the restored plant community is similar to those nearby. Howe much variation will be allowed in this analysis? This needs to be clearly spelled out. Also, the methodology is not adequately discussed. What methods will be employed? There are several standard methods to choose from that will be acceptable."

Response: We have discussed this with our (Regulatory Division) wetland scientists. The Corps will require that a comparative plant community analysis be performed, as stated in the DIFR/EA. We will also require that the contracted wetland scientist provide a proposal on the method to perform the analysis. The analysis will need to provide what species are present, and if the plant community analysis shows that obligate low and high salt marsh species that have become established within the restoration site are similar to adjacent wetlands, then we would consider this particular criterion to have been successfully achieved. Our target elevations for high and low salt marsh will dictate success of the restoration, and since this will be a tidal area in the lower estuary, we anticipate that our planting and recruitment will result in successful establishment of the desired obligate wetland plant species. As previously stated, the Corps will coordinate with NPS technical staff on the restoration effort.

Comment #10: "Historically, after dredging projects, the Preserve's water quality has been degraded and multiple red tide events occurred contributing to large fish kill events. The shoaling that occurs in the Fort George River is the result of a history of USACE's installation of engineered structures in order to maintain the St. Johns River as a nationally significant navigation channel.

The NPS has concerns that the proposed action could exacerbate these ongoing problems. There is no information in the Environmental Assessment that discusses these potential adverse cumulative impacts. The NPS recommends inclusion of additional analyses to address these concerns."

Response: According to the Florida Fish and Wildlife Conservation Commission's database, there have been red tide events recorded along the northeast coast of Florida in 1980, 1999, and September 2007 through January 2008. These events are attributed to the transport of *Karenia brevis*, the organism primarily responsible for red tides in Florida, and its transport from the Gulf of Mexico to the east coast of Florida via the Gulf Stream. While the exact cause of why *K. brevis* greatly proliferates at certain times is still being researched, we see no correlation between our dredging events and red tide. Some red tide events have been linked to nutrient loading while others appear to be the result of coastal upwelling. Cyanobacteria (blue-green algae) blooms have also been recorded within the St. Johns River, and they originate upstream of our dredging operations and are related to in-stream nutrient levels. Per our recent meeting, NPS staff have agreed to follow-up on this comment and, if possible, provide any information they may have on how dredging of Jacksonville Harbor contributes to red tide.

The Mile Point study area and the Fort George River are very spatially separate; therefore, the Corps does not believe there is a relevant connection between the two. The Mile Point project would not exacerbate shoaling within the Fort George River. The Corps will address the Fort George River issue within the cumulative effects section of the Supplemental Environmental Impact Statement currently being prepared for the Jacksonville Harbor Deepening Study.

As stated in our December 30, 2009 letter to Ms. Goodman (TEHP) concerning the Ft. George Inlet Study; the Jacksonville District recognizes the concerns of your agency and many stakeholders have in regards to the water resource problem in this area and are committed to working toward a solution. At this time there is not a non-federal sponsor, as is required for Section 1135 studies, therefore no funds have been requested or provided for this new study.

Comment #11. "Please provide threshold impact definitions, including the definition of significant impact for each impact topic, as well as the data and analysis used to arrive at these conclusions."

Response: The Corps believes that the DIFR/EA is compliant with our regulations, ER 200-2-2, as well as 40 CFR Part 1508.7 which requires consideration of context and intensity of the proposed Federal action. The EA provides relevant resource identification, impact analysis and discussion sufficient to determine that a mitigated FONSI would be the appropriate level of analysis to comply with NEPA. For example, the proposed impacts to high and low salt marsh, oysters, tidal channel and coastal strand have been determined and would be fully compensated through in-kind mitigation. It is important to note that this project would provide navigation and shoreline benefits, and as previously stated, substantial environmental benefits. This includes up to 53 acres of salt marsh restoration at Great Marsh Island which more than compensates for the 8.15 acres of salt marsh wetlands impacted by this project.

United States Department of the Interior

NATIONAL PARK SERVICE
Southeast Regional Office
Atlanta Federal Center
1924 Building
100 Alabama St., SW.
Atlanta, Georgia 30303

IN REPLY REFER TO:

(SER-PC)

FEB 2 9 2012

Eric P. Summa
U.S. Army Corps of Engineers
Chief Environmental Branch
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Mr. Summa:

The National Park Service (NPS) received your comment response letter dated February 27, 2012, and appreciates your quick response and resolution of our concerns dealing with the "Draft Integrated Feasibility Report and Environmental Assessment (EA) on Jacksonville Harbor (Mile Point) Navigation Study in Duval County, Florida."

The mission of the NPS is to preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The NPS has a responsibility to ensure that units of the NPS system are not impaired by actions proposed by the NPS or any other agency. The NPS cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world. To achieve this mission, one of the principles we follow is to foster productive partnerships by collaborating with Federal, State, tribal and local governments, private organizations, and businesses to work toward common goals.

On that subject, we appreciate the U.S. Army Corps of Engineers-Jacksonville District (Corps) commitment to more directly involve the NPS in the future on additional Mile Point project activities, as well as other Jacksonville Harbor planning projects. As stated in our meeting with you on February 23, 2012, the NPS has a strong desire to not only be involved in the future monitoring and permitting for restoration efforts associated with the Mile Point project, but also for the broader Jacksonville Harbor Deepening Study and Supplemental Environmental Impact Statement. To further these objectives and as a followup to our February 23 meeting, the following NPS individuals are provided as points of contact for specific issues:

1. Please coordinate with NPS, Mark Ford, Wetland Ecologist, 419 Decatur Street, New Orleans, Louisiana 70130, phone 504-589-3882 extension 112, concerning salt marsh restoration and mitigation planning for the Mile Point project.
2. Thank you for providing copies of the cultural resource survey for the Mile Point project.

TAKE PRIDE IN AMERICA

Attachment 5

3. Please coordinate with the NPS during future State permitting activities and in the development of the monitoring plan for the Mile Point project. Contacts are Linda York, Coastal Geomorphologist, National Park Service, 100 Alabama Street, SW., 1924 Building, Atlanta, Georgia 30303, phone 404-507-5822, and Shauna Allen, Chief of Resource Stewardship Division, Timucuan Ecological and Historic Preserve, 13165 Mount Pleasant Road, Jacksonville, Florida 32225, phone 904-221-5568.

We look forward to increased coordination and an improved relationship between the NPS and Corps. To initiate coordination concerning future projects, please contact Barbara Goodman, Superintendent, Timucuan Ecological and Historic Preserve, 13165 Mount Pleasant Road, Jacksonville, Florida 32225, phone 904-221-5568, and Anita Barnett, National Park Service, 100 Alabama Street, SW., 1924 Building, Atlanta, Georgia 30303, phone 404-507-5706.

Sincerely,

David Vela
Regional Director
Southeast Region

JAXPORT
JACKSONVILLE PORT AUTHORITY

Post Office Box 3005
2831 Talleyrand Avenue
Jacksonville, Florida 32206-0005
www.jaxport.com

Office of the Chief Executive Officer

September 13, 2011

Colonel Alfred A. Pantano, Jr.
District Commander
U. S. Army Corps of Engineers
Jacksonville District
701 San Marco Boulevard
Jacksonville, FL 32207

Dear Colonel Pantano:

The letter serves to reaffirm the support of the Jacksonville Port Authority for the USACE Jacksonville Harbor (Mile Point) Integrated Feasibility Report and Environmental Assessment Study Project. The Jacksonville Port Authority is willing and has the financial capability to execute a project partnership agreement for this project.

The Jacksonville Port Authority understands that under the project partnership agreement it will be responsible for sharing in the costs of the project as the non-federal sponsor.

Sincerely,

A. Paul Anderson

A. Paul Anderson
Chief Executive Officer
Jacksonville Port Authority

cc:
Roy Schleicher, Sr. VP
Michael Poole, CFO
Chris Kauffmann, COO

Attachment 6

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY

DUVAL COUNTY, FLORIDA

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the Environmental Assessment (EA) for the proposed action. This Finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment enclosed hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement. Reasons for this conclusion are in summary:

a. Per the Recommended Plan, the existing Mile Point training wall would be reconfigured in order to redirect difficult crosscurrents. This should reduce or eliminate navigation restrictions impeding the movement of deep draft vessels. Dredged material resulting from the project would be used to restore salt marsh at nearby Great Marsh Island. This beneficial use of dredged material is also the least cost disposal option. A Flow Improvement Channel is being proposed in order to restore the historical connection between Chicopit Bay and the Intracoastal Waterway and St. Johns River. Reconfiguration of the training wall would result in the loss of approximately 8.15 acres of salt marsh and approximately 0.75 acres of oyster habitat; however, this loss would be more than offset by the restoration of up to 53 acres of salt marsh at Great Marsh Island and approximately 2.77 acres of oyster habitat at the island and along the reconfigured wall.

b. Coordination with the US Fish and Wildlife Service and the National Marine Fisheries Service has been completed per Section 7 of the Endangered Species Act.

c. An Environmental Resource Permit (Water Quality Certification) shall be obtained from the State of Florida, and the proposed work would be performed in compliance with Water Quality Certification conditions. A final determination of whether the project is consistent with the Florida Coastal Management Program shall be made by the State with issuance of the permit.

d. A significant cultural resource is located within the project area; however, there should be no adverse effects to this resource with the current project design. Coordination with the State Historic Preservation Officer and appropriate Federally recognized tribes has been completed with no adverse effect.

e. Measures to eliminate, reduce, or avoid potential impacts to environmental and cultural resources shall be implemented.

BARKLEY, BRUCE C.
LTC, EN
DEPUTY COMMANDER

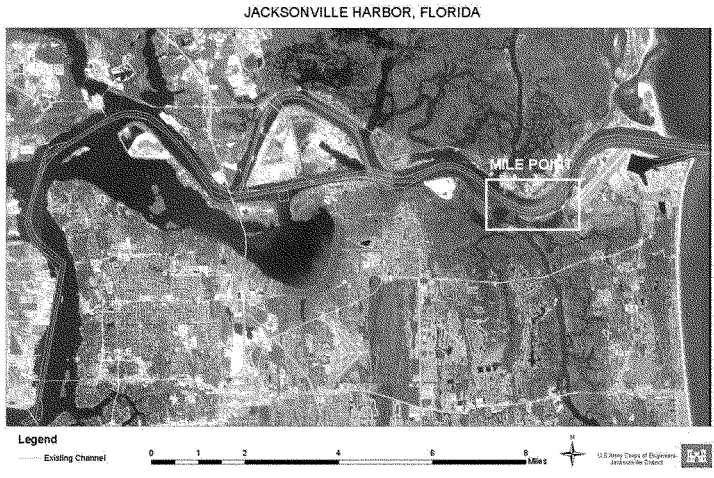
17 APR 12
Date

FOR: ALFRED A. PANTANO, JR.
Colonel, Corps of Engineers
Commanding

Jacksonville Harbor (Mile Point) Navigation Study, Duval County, Florida

FINAL
INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

March 2012



Navigation Study for Jacksonville Harbor (Mile Point), Final Report, Integrated Feasibility Report and Environmental Assessment, Duval County, Florida

FINAL INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT JACKSONVILLE MILEPOINT JACKSONVILLE, DUVAL COUNTY, FLORIDA

LEAD AGENCY: Jacksonville District, U.S. Army Corps of Engineers

Mile Point is located in Duval County, Florida. It consists of about 5000 feet of shoreline located along the north shore of the St. Johns River and east of the Intracoastal Waterway (IWW). The study will determine plans to evaluate the Mile Point erosion problem and to provide recommendations for reducing or relocating the difficult crosscurrents during the ebb flow at the confluence of the St. Johns River with the IWW that are interfering with safe navigation in the channel. The St. Johns Bar Pilots and the Captain of the Port, United States Coast Guard (USCG), have enacted a restriction which requires inbound vessels with a draft greater than 33 feet inbound and 36 feet outbound to be restricted to transiting close to or on a flood tide before entering the harbor to avoid the difficult ebb flow currents.

The Federal objective of water and related land resources planning is to contribute to National Economic Development (NED) consistent with protecting the nation's environment, in accordance with national environmental statutes, applicable executive orders, and other Federal planning requirements.

For more information, contact Samantha Borer, U.S. Army Corps of Engineers, Planning Division, P.O. Box 4970, Jacksonville, Florida 32232-0019, phone (904) 232-1066 or facsimile (904) 232-3442.

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P.O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY

DUVAL COUNTY, FLORIDA

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed the Environmental Assessment (EA) for the proposed action. This Finding incorporates by reference all discussions and conclusions contained in the Environmental Assessment enclosed hereto. Based on information analyzed in the EA, reflecting pertinent information obtained from agencies having jurisdiction by law and/or special expertise, I conclude that the proposed action will not significantly impact the quality of the human environment and does not require an Environmental Impact Statement. Reasons for this conclusion are in summary:

a. Per the Recommended Plan, the existing Mile Point training wall would be reconfigured in order to redirect difficult crosscurrents. This should reduce or eliminate navigation restrictions impeding the movement of deep draft vessels. Dredged material resulting from the project would be used to restore salt marsh at nearby Great Marsh Island. This beneficial use of dredged material is also the least cost disposal option. A Flow Improvement Channel is being proposed in order to restore the historical connection between Chicopit Bay and the Intracoastal Waterway and St. Johns River. Reconfiguration of the training wall would result in the loss of approximately 8.15 acres of salt marsh and approximately 0.75 acres of oyster habitat; however, this loss would be more than offset by the restoration of up to 53 acres of salt marsh at Great Marsh Island and approximately 2.77 acres of oyster habitat at the island and along the reconfigured wall.

b. Coordination with the US Fish and Wildlife Service and the National Marine Fisheries Service has been completed per Section 7 of the Endangered Species Act.

c. An Environmental Resource Permit (Water Quality Certification) shall be obtained from the State of Florida, and the proposed work would be performed in compliance with Water Quality Certification conditions. A final determination of whether the project is consistent with the Florida Coastal Management Program shall be made by the State with issuance of the permit.

d. A significant cultural resource is located within the project area; however, there should be no adverse effects to this resource with the current project design. Coordination with the State Historic Preservation Officer and appropriate Federally recognized tribes has been completed with no adverse effect.

e. Measures to eliminate, reduce, or avoid potential impacts to environmental and cultural resources shall be implemented.

BARKER, BRIANS C.
LTC, EN
DEPUTY COMMANDER

17 APR 12
Date

FOR ALFRED A. PANTANO, JR.
Colonel, Corps of Engineers
Commanding

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.

MERDITH W.B. TEMPLE
Major General, USA
Acting Commander

SUMMARY

FINAL
INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT
ON
JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY
DUVAL COUNTY, FLORIDA

The Mile Point Shoreline of Jacksonville Harbor (Jax Mile Point) is located between river miles four and five west of the Atlantic Ocean along the St. Johns River. This area on the north bank of the St. Johns River has been experiencing shoreline erosion. The confluence of the St. Johns River and the Intracoastal Waterway (IWW) is within the Mile Point study area. The IWW enters the main channel of the St. Johns River at an angle of approximately 45° from the north, out of Sisters Creek (**Figure 1)**. From the south, the IWW enters out of Pablo Creek at an angle almost parallel to the main channel flow out of Pablo Creek, with flow usually running in the opposite direction of the flow of the river. On the south bank of the St. Johns River is the Mile Point training wall, also known as the Little Jetties.

The non-federal sponsor is the Jacksonville Port Authority. The purpose of the Jacksonville Mile Point study is to assess Federal interest in navigation improvements and related purposes, with particular reference to erosion of the Mile Point shoreline. An evaluation of benefits, costs, and environmental impacts determines Federal interest. The feasibility study was authorized by a resolution of the House Committee on Transportation and Infrastructure adopted March 24, 1998 for Mile Point, Florida.

Need or Opportunity: The U.S. Army Corps of Engineers (USACE) has been studying the continued erosion of the Mile Point shoreline and the effects of the navigation restrictions. The following erosion and navigation problems related to the existing Mile Point area necessitated this feasibility study. There have been catastrophic failures on the north Mile Point shoreline due to erosion. **Figure 2** highlights a failure event at parcel no.8856 on the Mile Point shoreline. In this particular case, the head scarp appears to have eroded 75 to 100 feet back from the seawall. Other erosion events are documented in **Figure 3** and date from 1986 to 1997. Due to difficult crosscurrents at the confluence of the IWW and the St. Johns River during the ebb tide (**Figure 1**), the St. Johns Bar Pilots have enacted navigation restrictions for inbound vessels with a transit draft greater than 33 feet to avoid transiting during the ebb tide. Due to the angle of entry of the flow at the confluence, there is a danger that large vessels could turn in response to the current and leave the channel resulting in groundings or collisions.

FIGURE 1: CROSSCURRENTS PRODUCED BY PERPENDICULAR INTERSECTION OF THE IWW WITH THE ST. JOHNS RIVER AT PABLO CREEK

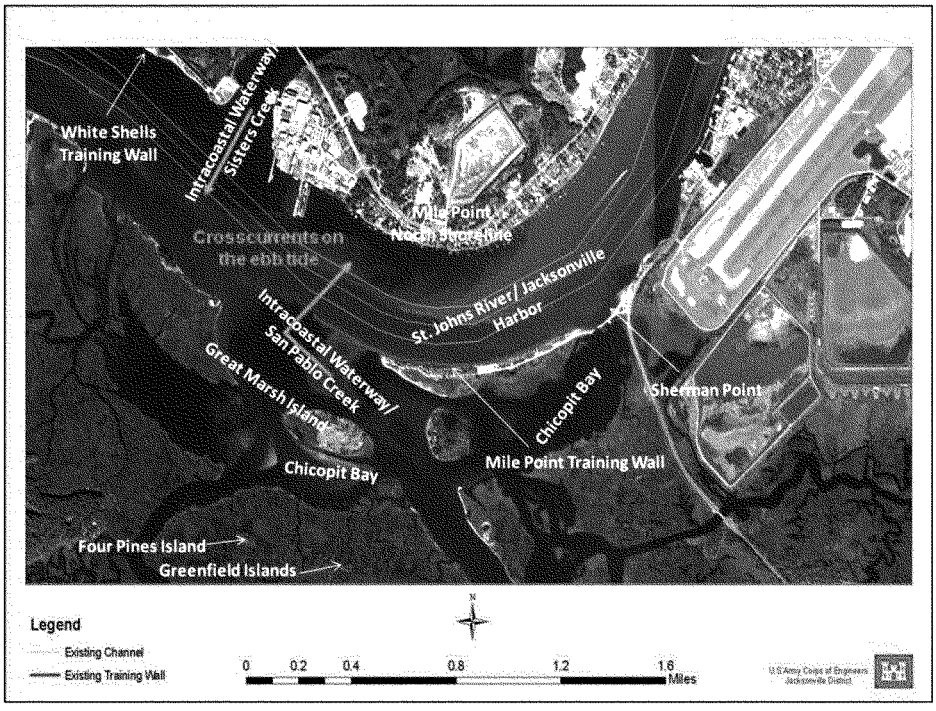


FIGURE 2: POST-EROSION EVENT ON THE NORTH SHORELINE DEC 1990

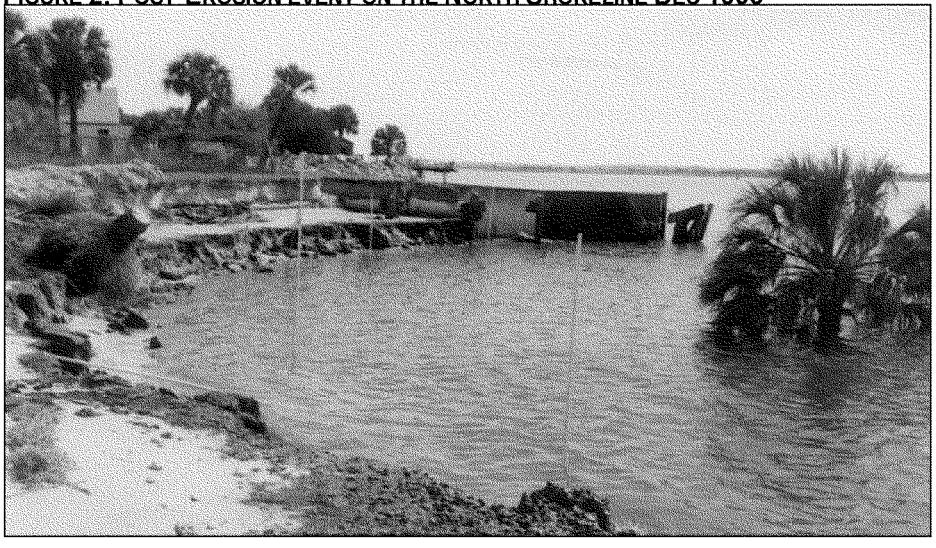
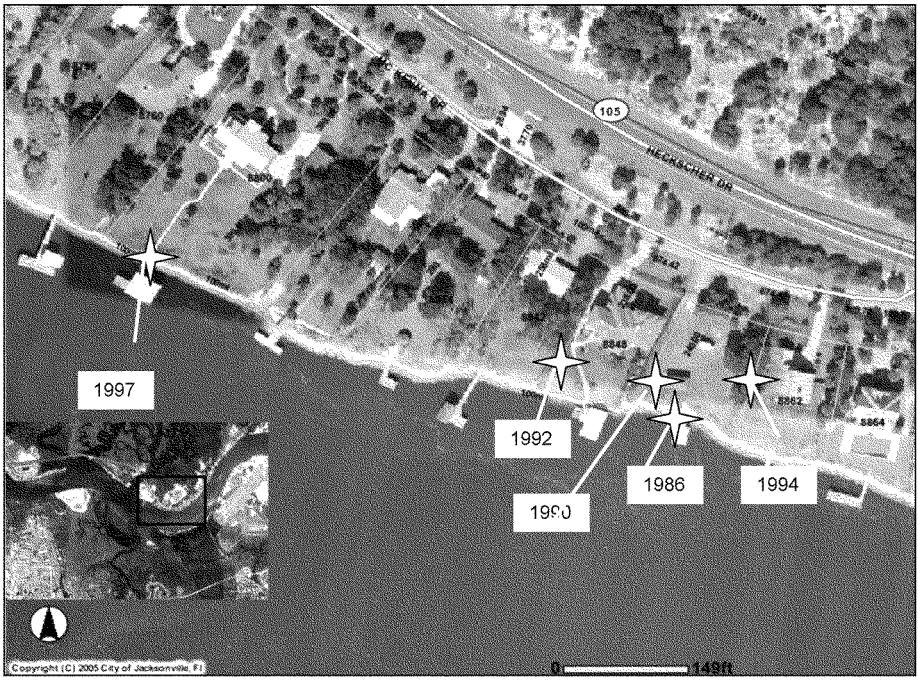


FIGURE 3: EROSION EVENTS DOCUMENTED ON MILE POINT NORTH SHORELINE.



Major Findings and Conclusions: The proposed actions of this report are in the national interest and can be constructed while protecting the environment from unacceptable impacts. Benefits of the proposed action would minimize the impacts of the flows out of the IWW during the ebb tide, slow or redirect the velocities away from the north bank, and slow the progression of erosion. Reducing or redirecting the difficult crosscurrents in the harbor would allow the pilots to reduce or eliminate navigation restrictions impeding the free movement of vessels. As is detailed in the Engineering Appendix (Appendix A) on page A-4, numerical modeling results indicate that the potentially dangerous crosscurrents exiting the IWW southern channel under ebb tide can be redirected to more closely parallel the alignment of the Federal navigation channel instead of being focused toward the erosion prone areas along the northern shoreline of Mile Point. Adverse impacts from the project, that would be mitigated, would include loss of salt marsh adjacent to the existing Mile Point training wall. Measures were taken to avoid, minimize, and compensate for adverse impacts. The restoration of Great Marsh Island is the least cost dredging alternative. It provides beneficial use of dredged material through the creation of habitat beyond the required mitigation. The creation of a flow improvement measure is proposed to prevent any adverse impacts on water quality within Chicopit Bay from restoring Great Marsh Island.

Alternatives: Alternatives that were evaluated include a number of non-structural and structural alternatives.
Non-structural alternatives include:

- Operational measures such as light-loading, use of tide, additional tugs
- No action alternative

Structural alternatives include:

- North shoreline groin field
- San Pablo Creek IWW submerged weir
- Rebuilding of Mile Point Training Wall to original dimensions
- 150-foot training wall reach channel widening of the channel
- Eastern Chicopit Bay diversion channel
- Relocating (Reconfiguration) Mile Point Training Wall
- Short cut widening of the channel
- Removal of the waterward portion of the Mile Point Training Wall under the O&M Program

Combinations of these alternatives were also evaluated.

Preferred Alternative (**Figure 4**): The preferred alternative is to relocate/reconfigure the Mile Point training wall and include a Chicopit Bay Flow Improvement Channel (FIC) (referred to as Alternative VE-3B+FIC in the report). This is the Recommended Plan which combines the reconfiguration of the existing training wall, restoration of Great Marsh Island which is the least cost disposal option, and the creation of a FIC in Chicopit Bay. The training wall reconfiguration includes removal of the western 3,110 feet of the existing Mile Point training wall and the construction of a relocated eastern leg training wall of approximately 2,050 feet. 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 Restoration 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 is needed to more precisely ascertain the exact quantities of stone available for reuse.

The east leg training wall incorporates a larger scour apron (25 feet) than the west leg (10 feet) 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 feet of training wall to tie into the existing structure on Helen Cooper Floyd Park, and the west leg consists of building approximately 4,250 feet of training wall along 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.

The least cost disposal method is to restore the breakthrough at Great Marsh Island by placing dredged material at the island and constructing an approximate 4,250 foot Western Leg training wall. Restoration of this area provides an opportunity to address impacts caused by the physical decay of the ecosystem from 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 disposal of 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 the approximate 8.15 acres of salt marsh impacted by the training wall removal.

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 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 Intracoastal Waterway. 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 feet wide and 6 feet deep for a length of approximately 3,620 feet through Western Chicopit Bay. Dredged material from the FIC would be placed back into the Great Marsh Island restoration area. Monitoring and corrective action, if needed, of the FIC will be implemented by the USACE for 5 years.

The Recommended Plan was the only alternative that provides for a redirection or reduction of the erosive ebb flow currents from the Mile Point shoreline and allows for the St. Johns Bar Pilots to lift the restrictions to navigation. There was an extensive Value Engineering (VE) study to refine the design of this alternative which incorporates the beneficial use of dredged material to create a salt marsh mitigation area to restore wetlands lost on Great Marsh Island; the original plan utilized an existing upland site, Buck Island, for disposal of dredged material.

Hydrodynamic modeling of this alternative showed a reduction in the crosscurrents in the navigation channel. It is anticipated that the new realignment of the Mile Point training wall would produce flows coming out of the IWW from the south that are more aligned with the Federal channel. This is expected to provide a decrease in water velocity in the areas north of the channel at Mile Point and possibly slow the progression of the erosion that has occurred

at the north bank of Mile Point. A ship simulation was run to test the effects of the alternatives on the crosscurrents at Mile Point. Members of the St. Johns Bar Pilot Association participated in the ship simulation process. Under the recommended alternative, the ship simulation showed favorable results in reducing the crosscurrents at Mile Point. As expressed in a letter sent by the St. Johns Bar Pilots on May 15, 2008, the results were supported by the majority of the St. Johns Bar Pilots that under these conditions the pilots would reduce or eliminate the restrictions associated with IWW crosscurrents.[1] A second ship simulation was run September 14-17, 2009 to test the Widening Only alternative, as well as the Relocation of the Mile Point training wall alternative. The pilots, after using the wideners in the simulation, stated that they felt the wideners would not reduce tidal restrictions for Mile Point. The second simulation confirmed the first analysis, showing favorable results for the Relocation of the Mile Point training wall alternative in reducing or eliminating tidal restrictions at Mile Point.

The Recommended Plan provides national economic development (NED) benefits from alleviating the navigation restrictions, incidental environmental benefits from restoring Great Marsh Island, and potential incidental erosion benefits from potentially reducing the effects of the crosscurrents on the adjacent shoreline (**Figure 4).** Relocation of the Mile Point Training wall (VE-3B+FIC) has a benefit-to-cost ratio (BCR) of 1.4 with average annual equivalent (AAEQ) Net Benefits of $0.7 million. AAEQ Benefits equal $2.44 million and AAEQ Costs equal $1.74 million. **Table 1** outlines the project costs.

Approximately 51.2 acres of land are under the control of the U.S. Navy. The 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, Inc. owns lands in the vicinity of the proposed project that will not be negatively impacted. The Nature Conservancy, Inc. is familiar with the proposed project and has indicated their support for the project.

[1] Letter in Appendix E (Pertinent Correspondence): St. Johns Bar Pilot Association Letter, May 15, 2008.

TABLE 1: TOTAL PROJECT COSTS (OCTOBER 1, 2011 PRICE LEVELS AND FY2012 DISCOUNT RATE)

(October 1, 2011 Price Levels and FY12 discount rate) Cost Summary Relocation (Reconfiguration) + Flow Improvement VE-3B+FIC			
	Total Cost	Federal Share	Non-federal Share
General Navigation Features	20-45 ft.	75%	25%
Mobilization	$2,378,000	$1,783,000	$594,000
Dredging and Disposal[1]	$6,687,000	$5,015,000	$1,672,000
Turbidity and Endangered Species Monitoring	$451,000	$338,000	$113,000
Bank Stabilization, Dikes & Jetties (Reconfigured Training Wall)	$19,299,000	$14,474,000	$4,825,000
Environmental Mitigation	$3,088,000	$2,316,000	$772,000
Salt Marsh Mitigation	$1,592,000	$1,194,000	$398,000
Oyster Bed Mitigation	$565,000	$424,000	$141,000
Biological Survey	$488,000	$366,000	$122,000
Mitigation Monitoring	$443,000	$332,000	$111,000
Planning, Engineering, and Design	$2,087,000	$1,565,000	$522,000
Construction Management (S&I)	$1,910,000	$1,433,000	$478,000
Subtotal Construction of GNF	$35,900,000	$26,924,000	$8,976,000
Lands and Damages.	$99,000	$74,000	$25,000
Total Project First Costs	$35,999,000	$26,998,000	$9,001,000
Aids to Navigation[2]	$431,000	$431,000	$0
Credit for non-Federal LERR[3]	-	$13,000	($13,000)
10% GNF Non-Federal[4]	-	($3,590,000)	$3,590,000
Total Cost Allocation	$36,430,000	$23,852,000	$12,578,000
AAEQ Benefits			$2,440,000
AAEQ Costs			$1,737,000
AAEQ Net Benefits			$703,000
Benefit-to-Cost Ratio (BCR)			1.40

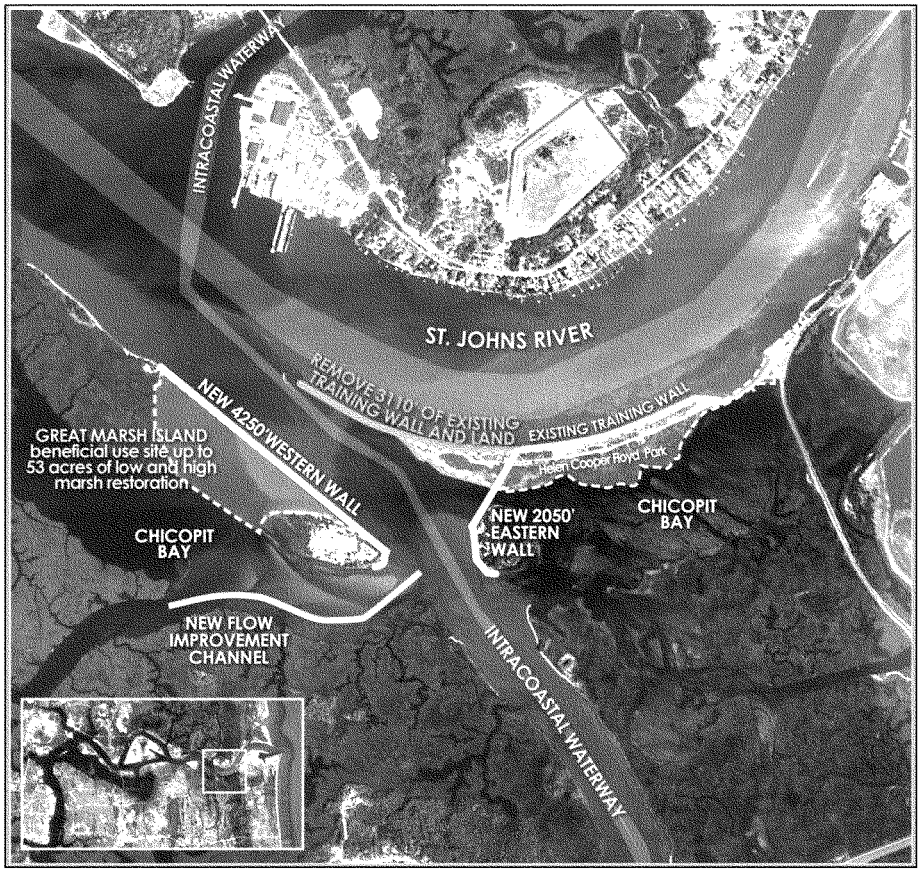
1. Includes Pipeline Dredging Cost.

2. Navigation Aids - 100% Federal

3. Real Estate Costs: Credit is given for the incidental costs borne by the non-Federal sponsor for lands, easments, rights of way and relocations per Section 101 of WRDA 86. The Federal real estate acquisition/ incidental costs include the project real estate planning, review , and incidental (license) costs between the Navy and the USACE.

4. The Non-Federal Sponsor shall pay an additional 10% of the costs of GNF, pursuant to Section 101 of WRDA 86. The value of LERR shall be credited toward the additional 10% payment.

FIGURE 4: THE RECOMMENDED PLAN -RELOCATE (RECONFIGURE) MILE POINT TRAINING WALL AND FLOW IMPROVEMENT CHANNEL



Economics Scenario Run Case 1: Case 1, as discussed in the Economic Appendix B, uses the existing fleet plus an additional container service at 5 weekly calls with growth for the 50-year analysis. The results show NED benefits of $93 million, which justifies the project with a 2.5 Benefit-to-Cost Ratio and AAEQ Net Benefits of $2.6 million.

Issues Raised by the Public and Agencies:

The Florida Department of Environmental Protection (DEP) has stated that the proposed Flow Improvement Channel (FIC) must be maintained. Also, construction sequencing of the western training wall, restoration site, and the FIC must be addressed to prevent flushing impairment within Chicopit Bay. If these issues are not addressed, then the DEP may not have reasonable assurance to

provide State Water Quality Certification for the project. Residents living along Greenfield and Mt. Pleasant Creeks (south of the project area) have also stated that construction of the western training wall, restoration site, and FIC should be properly sequenced so that they have continued access to the IWW and the St. Johns River. The residents have also requested that future maintenance dredging of the FIC be included within the project authorization (please refer to **Section 7.24.4** for more information on this issue). Monitoring and corrective actions, if needed, for a 5-year period have been added to address these concerns. Construction sequencing will be evaluated during the pre-construction engineering and design (PED) phase in order to minimize disruptions to the residents.

Homeowners on the north bank of the river at Mile Point have seen severe erosion of their property and are seriously concerned about future property losses. They have speculated that this erosion has been caused by hydrodynamic effects of dredging done by the USACE in the past, installation of the large Atlantic Marine dry dock, as well as the deterioration of the Mile Point training wall. Hydrodynamic modeling of the Recommended Plan shows a reduction in currents along the north bank with its implementation.

The U.S. Coast Guard (USCG), most harbor pilots, commercial towing company representatives, and tug/barge operators identified the IWW/St. Johns River confluence as the harbor location with the greatest risk. Currently, submerged sections of the Mile Point training wall present a challenge to recreational boaters not familiar with the area. One towing company representative noted that boaters sometimes run aground on unseen submerged sections of the training wall. The recommended plan removes the submerged sections so should improve public safety.

The U.S. Environmental Protection Agency (EPA), Florida Department of Environmental Protection (DEP), Florida Fish and Wildlife Conservation Commission (FWC), St. Johns River Water Management District (SJRWMD), and the public provided comments on the draft Integrated Feasibility Report and Environmental Assessment (refer to **Section 7.24.4** to view the comments and responses).

Areas of Controversy: As previously described, the DEP has stated that the proposed Flow Improvement Channel (FIC) must be maintained and the work properly sequenced. Residents living along the Greenfield and Mt. Pleasant creeks have also expressed concerns about construction sequencing and future maintenance dredging of the FIC so that they retain the ability to access the IWW and St. Johns River. The USACE, Jacksonville District regards the FIC as mitigation for project related impacts, specifically the closure of the breakthrough at Great Marsh Island, which would adversely affect both water quality within Chicopit Bay and local boating access.

Summary of Coordination: A scoping letter, dated August 4, 2004, was sent to stakeholders soliciting views and comments regarding environmental and cultural resources, study objectives, and important features within the study area. Federal and state agencies attended the Jacksonville Harbor (Mile Point) Feasibility Scoping Meeting held on July 30, 2004. The scoping letters were sent to all appropriate agencies. Pursuant to Section 7 of the Endangered Species Act, coordination with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) has been completed. The Jacksonville District and the USFWS have jointly prepared a Memorandum for Record which states that both agencies have agreed to utilize the National Environmental Policy Act review and Endangered Species Act consultation processes to complete coordination responsibilities under the Fish and Wildlife Coordination Act.

The USACE, Jacksonville District met with all landowners within or immediately adjacent to the footprint of the proposed work in January of 2008. These meetings were held in order to discuss the project. They were attended by staff from the Mayport Naval Station, The Nature Conservancy, and the National Park Service-Timucuan Ecological and Historic Preserve. A second scoping letter was issued to all stakeholders on March 31, 2008. Informal coordination between the USACE Jacksonville District and the USFWS, NMFS, Timucuan Ecological and Historic Preserve, Florida Department of Environmental Protection (DEP), as well as The Nature Conservancy was conducted during 2008. As requested, site visits were also made with the USFWS, NMFS, and The Nature Conservancy. A meeting to discuss the numerical hydrodynamic modeling results for the proposed work was held on August 26, 2008 and was attended by the USFWS, NMFS, The Nature Conservancy, and the Mayport Naval Station. Agency coordination letters can be found in Appendix E. A Notice of Availability for the Draft Integrated Feasibility Study and Environmental Assessment was mailed to interested parties on July 07, 2011. Copies of the draft report were made available in selected libraries within the study area and placed on the District website, along with other pertinent study documents. A public workshop was held on August 15, 2011(refer to Section 7.24.4 to view comments received during the workshop as well as comments received on the draft Integrated Feasibility Report and Environmental Assessment). A site visit, as requested, was conducted in August 2011 with the DEP, USFWS, and FWC in order to discuss the mitigation.

Unresolved Issues: There are no unresolved issues. As a result of agency and public coordination, the USACE-Jacksonville District will develop a monitoring and corrective action plan for the FIC. The USACE, Jacksonville District shall continue to coordinate the proposed plan with the USACE, South Atlantic Division and USACE, Headquarters as well as the local sponsor, agencies and concerned public.

FINAL
INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT
ON
JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY
DUVAL COUNTY, FLORIDA

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1.0 STUDY INFORMATION*

1.1 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), Jacksonville District is investigating difficult crosscurrents at the confluence of the St. Johns River with the IWW. This area is known as Mile Point and is located in Jacksonville, Duval County, Florida. Due to these crosscurrents there is a navigational restriction on the ebb tide that affects all vessels that have a transit draft greater than 33 feet inbound and 36 feet outbound, inhibiting the free movement of vessel traffic. The crosscurrents at Mile Point are also of concern for the Mile Point north shoreline, which has experienced erosion.

The investigations described in this report address the feasibility of reducing the effects of the crosscurrents on the Mile Point shoreline and the St. Johns Bar Pilots navigation restrictions in place because of the crosscurrents at Mile Point.

1.2 STUDY AUTHORITY

Resolution, Docket 2550, of House Committee on Transportation and Infrastructure adopted March 24, 1998 for Mile Point, Florida states:

> Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That, the Secretary of the Army is requested to review the report of the Chief of Engineers on Jacksonville Harbor, Florida, published as House Document 214, Eighty-ninth Congress, 1st Session, and other pertinent reports to determine whether any modifications of the recommendations contained therein are advisable at the present time in the interest of navigation and related purposes, with particular reference to erosion of the Mile Point shoreline.

Congress added funding in the appropriations for Fiscal Year (FY) 2000 to begin the reconnaissance study which was completed in 2001. The feasibility study proceeded under that authorization in 2003.

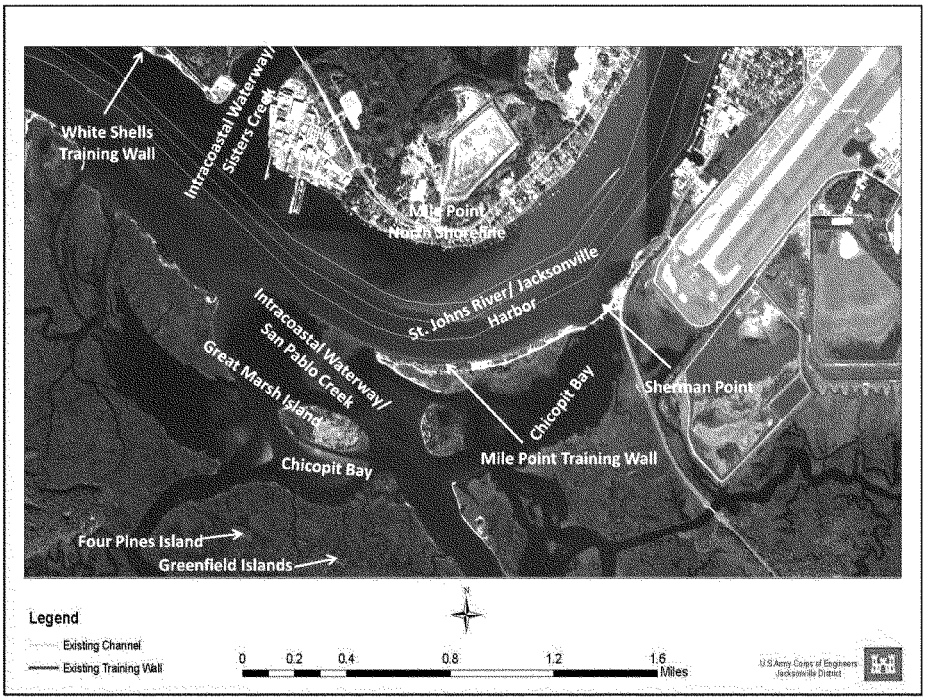
1.3 PURPOSE AND SCOPE

The purpose of this study is to develop and evaluate alternate plans to reduce effects of the crosscurrents on the Mile Point shoreline and recommend alternatives that would allow the St. Johns Bar Pilots to remove the restrictions to navigation for vessels transiting Jacksonville Harbor. The objective of this feasibility report is to investigate and recommend solutions to the water resources problems at Mile Point. The results of this study include documentation of environmental compliance.

1.4 LOCATION OF THE STUDY AREA

Mile Point consists of 5,000 feet of shoreline located along the north shore of the St. Johns River and east of the Intracoastal Waterway (IWW). Great Marsh Island and the Mile Point training wall divide Chicopit Bay from the St. Johns River. Chicopit Bay is located to the south of the Mile Point area (**Figure 5).** Mile Point is in the 4th Congressional District. Congressman Ander Crenshaw supports efforts to determine the cause and prevention of the erosion and navigational restrictions.

FIGURE 5: LOCATION OF JACKSONVILLE MILE POINT



1.5 HISTORY OF THE INVESTIGATION

A Reconnaissance Analysis for the Mile Point Shoreline of Jacksonville Harbor, Duval County, Florida was completed in 2001, under Section 905(b) Water Resources Development Act (WRDA) 1986. The purpose of the analysis was to evaluate the potential for Federal interest in investigations to determine the source of the Mile Point erosion problem and to recommend appropriate mitigation measures for prevention of the erosion as part of the Jacksonville Harbor and Intracoastal Waterway projects. During the course of the analysis, it was noted that the same crosscurrents affecting the erosion of the shoreline also presented problems for deep draft navigation in the Federal channel. The

analysis determined that a Federal interest exists to investigate, study, plan, and implement structural and nonstructural measures for the prevention or mitigation of Mile Point shore damages attributable to the Jacksonville Harbor and Intracoastal Waterway Federal navigation works. Feasibility objectives were outlined to determine the cause of shoreline erosion and to identify measures that reduce and/or relocate the difficult and erosive crosscurrents so that restrictions on deep draft vessel navigation may be removed.

In 2000, new container lines began to call at Talleyrand. This prompted the Jacksonville Port Authority to raise concerns about the restrictions at Mile Point. Letters from Hamburg-Sud (Columbus Line USA, Inc.), the Jacksonville Port Authority, and the St. Johns Bar Pilots dated 2000-2003 can be found in Appendix E.

As a result of the determination of Federal Interest, a feasibility cost sharing agreement was executed March 12, 2003. The study is cost shared at 50/50.

1.6 PRIOR REPORTS AND EXISTING PROJECTS

1.6.1 Prior Reports

In addition to the Reconnaissance Report mentioned above, several other studies were initiated or completed related to the Mile Point area. The Jacksonville District prepared an environmental assessment (EA) for placement of dredged rock at the Mile Point area. The EA titled "Shoreline Protection Structure and Alternative Placement Site Construction" evaluated placing rock from the Jacksonville Harbor navigation project at the Mile Point Training Wall. The finding of no significant impact (FONSI) for that EA was signed on February 20, 2003. A Continuing Authorities Program (CAP) Section 1135 study to examine the potential for environmental improvements to the Chicopit Bay area was initiated but not completed. The Section 1135 study was put on hold pending the results of this Mile Point feasibility study. There are two navigation projects that are adjacent to the Mile Point area including the deep draft ship channel, Jacksonville Harbor Federal navigation project, (**Figure 6**); and the Intracoastal Waterway (IWW). The Intracoastal Waterway extends from Trenton, New Jersey to Miami, Florida, along the east coast of the United States. **Figure 7** illustrates the portion of the IWW from Jacksonville to Miami, Florida.

1.6.2 Existing Projects

1.6.2.1 Jacksonville Harbor Federal Navigation Project (Mile Point Area)

The Chief of Engineers Report dated May 19, 1965 recommended modification of the existing project for Jacksonville Harbor, Florida, "to provide for maintenance of the existing ocean entrance 42 and 40 feet deep, deepening of the interior channel to 38 feet to the Municipal Docks and Terminals, and

widening the channel near mile 5 and mile 7 by 100 feet and 200 feet, respectively." The Water Resources Development Act of 1999 modified some of the project features. Recent project features from WRDA 1999 include a 40-foot project depth from the Entrance Channel to mile 14.7, and a 38-foot project depth for cuts F and G. Channel widths vary from approximately 400 feet to 1,200 feet. Public Law 109-103, Section 129 of the FY 2006 Appropriations Act, dated November 19, 2005 authorized deepening and widening of miles 14.7 to 20 to the new project depth of 40 feet. Funding was provided through the American Recovery and Rehabilitation Act (ARRA) of 2009 and the project was completed in 2010.

The federally authorized Jacksonville Harbor project provides for Federal maintenance of an existing channel depth of 40 feet with bottom widths ranging from 400 to 1,200 feet from the Atlantic Ocean to Mile 20 of the St. Johns River. The authorized widths in the Mile Point area range from 1,025 feet at reach 7 to 625 feet from reaches 8 to 13 and down to 475 feet at reaches 14 to 15. All vessels transiting to the Jacksonville Port Authority (Jaxport) must pass through the Mile Point area to do so. An important feature of the Federal navigation project which separates the St. Johns River near Mile Point from the east side of Chicopit Bay is the Mile Point training wall. The training wall extends about 6,000 feet from Sherman Point past the confluence of Pablo Creek with the St. Johns River **(Figure 5)**.

1.6.2.2 Intracoastal Waterway

The Intracoastal Waterway (IWW) crosses the St. Johns River south of the Mile Point training wall at Pablo Creek and to the north at Sisters Creek. The IWW has an authorized bottom width of 125 feet at a depth of 12 feet both on the north and south side of the river. The first Federal authorization for the Intracoastal Waterway (at Pablo Creek) from Jacksonville to Miami occurred in the River and Harbor Act of January 21, 1927. Using an existing private canal, the USACE took possession of the waterway on December 11, 1929. That first project called for a canal 8 feet deep by 75 feet wide and has subsequently been deepened and widened. Construction began when the United States snagboat D-1 moved from the St. Johns River into Pablo Creek and headed south clearing obstructions. The first Federal authorization for the Atlantic Intracoastal Waterway (AIWW), which includes Sisters Creek, occurred under the acts of March 4, 1913, and provided for a channel 7 feet deep by 100 feet wide (found in document H. Doc. 898/62/2).

1.6.2.3 History of the Mile Point Area

As shown in an 1895 survey, the St. Johns River originally flowed around both sides of Great Marsh Island from about Sherman Point to St. Johns Bluff. At that time near Mile Point, the river was about 4,000 feet wide with a shoal area.

In 1892 a USACE project for improvement of the channel in the St. Johns River from a controlling depth of 12.5 feet to 18 feet received approval from the Secretary of War. The project proposed improvement of shoal areas at Dames Point, Cedar Creek, and Mile Point by means of training dikes and dredging. To expedite those improvements the citizens of Duval County obtained permission from the Secretary of War to accomplish that work at their own expense. As a result of those efforts, a navigable 18-foot channel existed by May 1894.[2]

From 1903 to 1907 the Jacksonville Harbor project was deepened to 24 feet. Mile Point did not seem to change during that period. By 1910 a request to deepen the harbor to 30 feet included a recommendation to continue construction of the Mile Point training wall by augmenting the small part that already existed.

That recommendation noted that the flood tide is deflected off a shell bank at Sherman Point sharply across the point of sands locally known as Mile Point, while the ebb is deflected by the outflow from Sisters Creek against Great Marsh Island. The Mile Point training wall was planned to properly train those currents into one channel and to avoid the troublesome crosscurrents from the several creeks entering the river between Great Marsh Island and Sherman Point. Construction of the Mile Point training wall must have started sometime prior to the 1910 report date since that report mentions an improvement of conditions as a result of initial construction of a small part of the training wall.

A similar situation existed approximately two or three river miles to the west of the Mile Point area along a section of the Federal channel between White Shells and St. Johns Bluff. The same 1910 document mentioned above proposed to shut off conflicting crossing currents by a training wall extending from the mouth of Clapboard Creek to Brunswick Island and further extending along the shoal between Brunswick Island and the head of White Shells training wall for the purpose of training the ebb and flood currents into one channel between St. Johns Bluff and the existing White Shells Training Wall.[3]

An examination of the training wall was performed in 1928.[4] According to that examination, the training wall ranged in height from an original design height of 6 feet above local mean low water (MLW) to areas with a height of only 0.5 feet above MLW. Maintenance work around 1931 rebuilt the training wall to an original design elevation of 6 feet above MLW.[5] Work began under contract on

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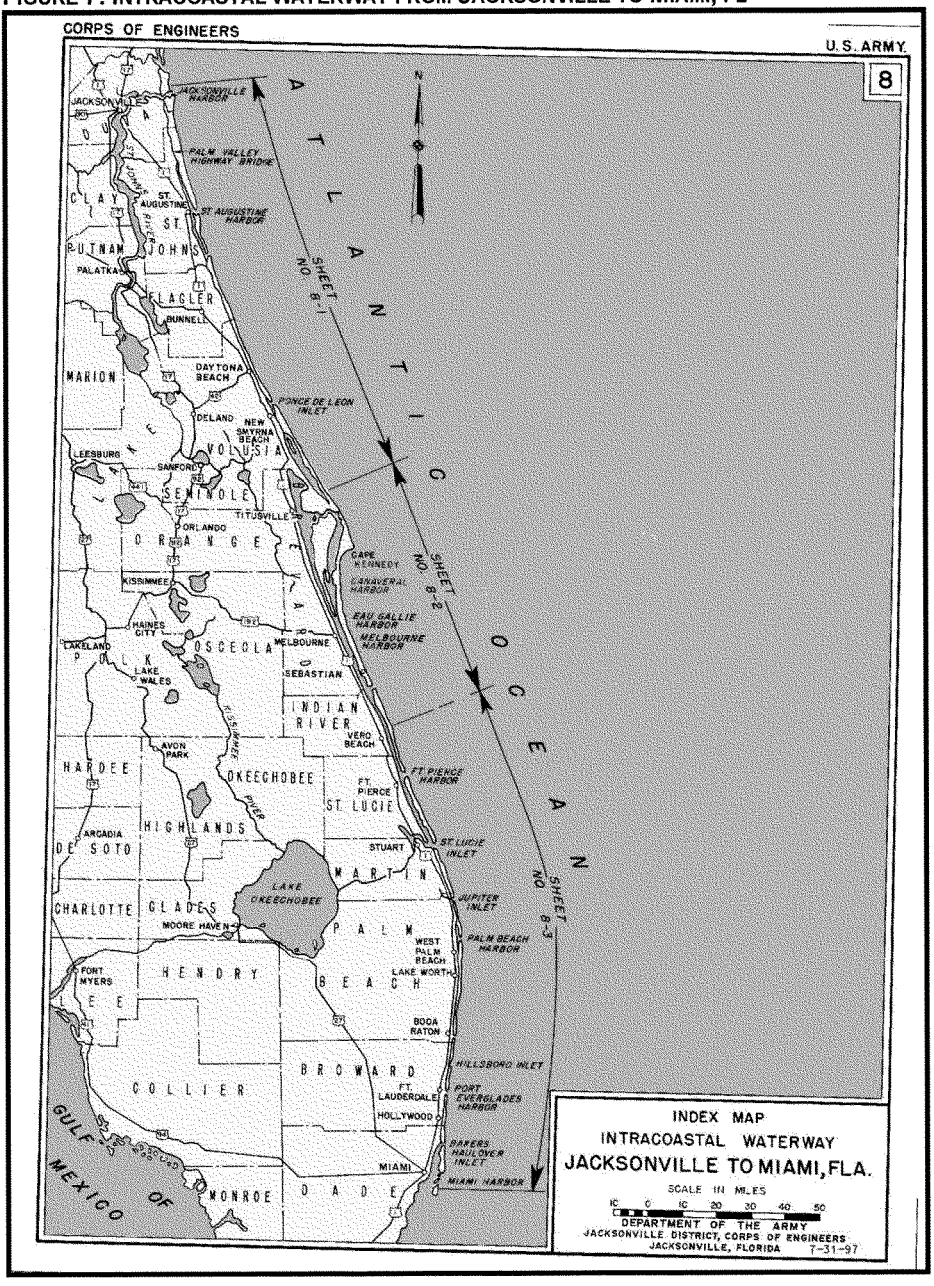
[2] House of Representatives Ex. Doc. 346, 53rd Congress, 3rd Session, June 3, 1896, Pages 3-4.
[3] House of Representatives Document No. 611, 61st Congress 2nd Session, January 29, 1910, Pages 17-18.
[4] Drawing File No. 1-9100. St. Johns River, Florida, Jacksonville to the Ocean. Examination of Training Walls & Revetments. August 20 to November 24, 1928.
[5] Drawing File No. 1A-8846, St. Johns River, Florida, Jacksonville to the Ocean, Proposed Repairs to Training Walls and Revetments, Mile Point Training Wall. U.S. Engineer Office, Jacksonville, Fla. November 21, 1930. To Accompany Proposal Number 31-434, Dated January 19, 1931.

April 21, 1931 and resulted in the repair of 5,990 linear feet of the training wall. Over 18,000 tons of granite averaging in weight from 1,000 to 1,500 pounds per stone was placed in the Mile Point training wall.[6] The Mile Point training wall underwent maintenance work to the eastern portions of the wall along Sherman Point in 2001. No maintenance work has been performed on the training wall since 2001.

[6] Annual Report of the Chief of Engineers, 1931, Extract. Report Upon the Improvement of Rivers and Harbors in Jacksonville, Fla., District. P. 741.

FIGURE 6: JACKSONVILLE HARBOR FEDERAL PROJECT

FIGURE 7: INTRACOASTAL WATERWAY FROM JACKSONVILLE TO MIAMI, FL



1.6.3 Other Studies

A Jacksonville Harbor General Reevaluation (GRR-II) study is underway to evaluate deepening and widening Jacksonville Harbor. The Mile Point feasibility study and the GRR-II study relate to one another. Lifting the restrictions at the Mile Point shoreline, as outlined in this report, will have a direct impact on the benefiting vessels for the GRR-II. The recommendations of this report will be included as a part of the without-project condition for the GRR-II.

1.7 PLANNING PROCESS AND REPORT ORGANIZATION

The USACE planning process follows the six-step process defined in the Principles and Guidelines (P&G) for Water and Related Land Resources Implementation Studies. This process, used for all planning studies conducted by the USACE, provides a structured approach to problem solving, and provides a rational framework for sound decision making. The six steps are:

Step 1: Identify problems and opportunities
Step 2: Inventory and forecast conditions
Step 3: Formulate alternative plans
Step 4: Evaluate alternative plans
Step 5: Compare alternative plans
Step 6: Select a plan

This feasibility study started with the issuance of initial Federal feasibility funds, following execution of the feasibility cost sharing agreement (FCSA), and terminates on the date the feasibility report is submitted to the Office of Management and Budget by the Assistant Secretary of the Army for Civil Works (ASA (CW)) for review of consistency with the policies and programs of the President. The feasibility phase may also be terminated if it is determined that there is no clear Federal interest in a project or if no project would meet the current policies or budget priorities. (See paragraph 4-3c(6) in ER 1105-2-100). The products of the feasibility phase include the feasibility report, integrated NEPA documentation, and a Chief of Engineers Report.

The feasibility report should document the planning process and all assumptions and rationale for decision making. The report will present the recommended plan and, if applicable, the degree of, and rationale for, departure from the National Economic Development (NED) plan. The non-federal sponsor cost sharing requirements, including their responsibilities for implementation and operation of the project must be clearly documented. Two project cost estimates shall be displayed in the feasibility report, one based on constant dollars, and one based on projected inflation rates.

Projects which produce NED benefits will result in a "best recommended plan;" resulting in a plan with the highest NED benefits over total project costs.

2.0 EXISTING CONDITIONS*

2.1 GENERAL

Jacksonville Harbor is a part of the St. Johns River. The St. Johns River is the longest river in eastern Florida; it is approximately 310 miles long and flows from the south to the north into the Atlantic Ocean. Deep draft vessels transit Jacksonville Harbor from the Atlantic Ocean to the Main Street Bridge in downtown Jacksonville. Jacksonville Harbor has an authorized depth of 40 feet from mile 0 to mile 20 and an authorized depth of 34 feet to mile 22. Vessels traveling through Jacksonville Harbor pass the Mile Point area to reach commercial terminals located between mainly mile 9 and mile 20.

The Intracoastal Waterway (IWW) crosses the St. Johns River at nearly right angles about 5 miles west of the mouth, at about 30°23.1'N., 81°27.8'W.[7] The IWW crosses the St. Johns River from the north at Sisters Creek and from the south at Pablo Creek. The confluence angle, in which the IWW meets with the St. Johns River, causes strong crosscurrents mainly during the ebb tide. The IWW has a controlling depth of 12 feet in the area of Jacksonville Mile Point. This area is used by barge tows traveling the IWW, requiring navigation through the Mile Point area and the crosscurrents.

Pablo Creek is a navigable waterway that experiences significant flow rates. Flows in excess of 55,000 cubic feet per second during ebb tide have been measured during Acoustic Doppler Current Profile (ADCP) surveys. This flow coming from the south, out of Pablo Creek can exceed 25 percent of the total flow of the St. Johns River at Mile Point. The confluence angle of Sisters Creek and Pablo Creek is more than 130 degrees. As the St. Johns River flows in a southeasterly direction during ebb flow, Pablo Creek flow collides with the river in a northwesterly direction. This combination of high flow and extreme confluence angle causes a deflection of the main channel flows to the northeast (**Figure 1**).

There are no bridges or other air restrictions from the Atlantic Ocean to the Mile Point Shoreline area. There are no utilities that would require relocation in the Mile Point area and there are no permits that have been issued or pending that would interfere with-project modifications in the Jacksonville Mile Point project area.

2.2 PHYSICAL CONDITIONS

The St. Johns River discharges into the Atlantic Ocean at Mayport in Duval County. The total elevation drop from its headwaters to the Atlantic Ocean is less than 30 feet (an average slope of about one inch per mile). Over most of its

[7] United States Coast Pilot 4, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, 2007 (39th) Edition

length, the average depth of the river is relatively shallow. However, the 26-mile stretch of river from the mouth to downtown Jacksonville (the deepest segment) has an average depth of approximately 30 feet. Many small rivers, creeks, and tributaries feed into the St. Johns River, increasing the overall river flow, and affecting the tidal signal, especially during storm events.

The St Johns River runs through the city of Jacksonville, located in northeast Florida. Deep draft vessels transit as far as downtown Jacksonville, or about 24 miles upriver from the confluence with the Atlantic Ocean. Upstream from downtown Jacksonville, commercial traffic is light, and comprised mostly of tug-assisted barges.

Acoustic Doppler Current Profiler (ADCP) surveys show that during flood tide, the majority of the flow in the Mile Point area is fast moving (>5 feet per second) and concentrated toward the southern bank of the river (outer bend) with very slow moving water along the northern bank (inner bend). This is the flow distribution one would expect to see at a river bend; however, during the ebb tide the flow distribution is drastically shifted/deflected to the north. Fast moving water flows can be seen along the northern shoreline, with water moving significantly faster along the northern (inner) bend compared to the southern (outer) bend where the Federal navigation channel is located.

Mile Point is located on the inside of the river bend, where typically sedimentation, not erosion, usually occurs. The unique geometric configuration of the intersection of the IWW and the St. Johns River produces a dramatic shift in the St. Johns River currents. This phenomenon has been verified visibly at the project site, measured with multiple ADCP surveys, reproduced in both two- and three-dimensional modeling, and verified by the St. Johns River Bar Pilots. These dangerous crosscurrents are the reason for the Bar Pilots' navigation restrictions.

In the recent past, homeowners on the north bank of the river at Mile Point have seen severe erosion of their property and are seriously concerned about future property losses. Bow wakes are not found to be a cause of erosion in this area. If bow wakes were the source of the problem, it would be expected that there would be the same level of catastrophic erosion all along the river or at least in multiple other locations, which is not the case. Large vessels move regularly in and out of most portions of the harbor during both ebb and flood tide.

Also of concern in this area is the breakthrough of Great Marsh Island on the southern bank of the St. Johns River at Mile Point, allowing water to flow directly from the St. Johns River into nearby Chicopit Bay. This has caused severe shoaling in parts of Chicopit Bay. At low tide, the water depth in some parts of the bay is less than six inches deep.

2.2.1 Tides

Based on NOAA Tide Gauge Station ID 8720224 (Mayport, St. Johns River) the tide range from mean lower low water (MLLW) to mean higher high water (MHHW) is 4.96 feet. The effect of tides on the river is significant. The exact point where the river becomes non-tidal will constantly change, depending on the strength of the tide signal (e.g., spring or neap tides), and the interaction of the tide with the variable river flow. The total flow in the lower reaches of the river is comprised of about 80%-90% tide-induced flow, with the remaining flow caused by wind, freshwater inflow (from tributaries and rain), and industrial and treatment plant discharges. The river flow generally increases downstream, with the highest flows occurring at the mouth of the river. The total discharge of the river is normally greater than 50,000 cubic feet per second (cfs), and will often exceed 200,000 cfs. River flow is seasonal, generally following the seasonal rain patterns with higher flows occurring in the late summer to early fall, and lower flows occurring in the winter months. The average annual non-tidal discharge at the river mouth is approximately 15,000 cfs.

2.2.2 Currents

Dangerous crosscurrents, in the Mile Point area, are a major concern to deep-draft commercial navigation. Meetings with the St. Johns Bar Pilots Association have highlighted the difficult and intense nature of the crosscurrents at the confluence of the St. Johns River with Sisters Creek to the north and Pablo Creek to the south. The area of the river where the IWW crosses the St. Johns River produces currents that can actually turn an inbound and under powered ship around. In addition, the U.S. Coast Guard (USCG) describes the junction of the IWW with the St. Johns River as one of particular concern, subject to strong and unpredictable crosscurrents at various stages of tide.

To avoid those difficult ebb flow crosscurrents, the St. Johns Bar Pilots and the Captain of the Port have enacted a restriction on vessels transiting the Harbor with a draft greater than 33 feet on the ebb tide (vessels that have called at the port and have proven to have exceptional handling characteristics, transiting to TraPac or Blount Island Terminals, are restricted if transiting with a draft greater than 34 feet).[8] Inbound vessels, with transit drafts greater than 33 feet are subject to navigation restrictions on the ebb tide; outbound vessels, vessels with a transit draft of 36 feet or more are subject to navigation restrictions on the ebb tide. The sponsor, the Jacksonville Port Authority, has requested the USACE to recommend measures that will allow the St. Johns Bar Pilots and the Captain of the Port to remove those restrictions.

In this study the changes in current velocities of the proposed plans were tested using a two-dimensional hydrodynamic model. An examination of the maximum flood and ebb tide current vectors were used to examine the flow velocity

[8] 2010 Pilot's Book, St. Johns River Navigational Guidelines

magnitudes within the Federal navigation channel to determine the effects of a change in the conditions at Mile Point on the crosscurrents.

2.2.3 Sea Level Rise

Relative sea level (RSL) refers to local elevation of the sea with respect to land, including the lowering or rising of land through geologic processes such as subsidence and glacial rebound. It is anticipated that sea level will rise within the next 100 years. To incorporate the direct and indirect physical effects of projected future sea level change on design, construction, operation, and maintenance of coastal projects, the USACE has provided guidance in Engineering Circular, EC 1165-2-211. This EC provides both a methodology and a procedure for determining a range of sea level change estimates based on global sea level change rates, the local historic sea level change rate, the construction (base) year of the project, and the design life of the project. Three estimates are required by the guidance, a baseline estimate representing the minimum expected sea level change, an intermediate estimate, and a high estimate representing the maximum expected sea level change.

The local rate of vertical land movement is found by subtracting the regional mean sea level (MSL) trend from the local MSL trend. The regional mean sea level trend is assumed equal to the eustatic mean sea level trend of 1.7 mm/year. Therefore, at Mile Point, there is 0.70 mm/year of subsidence. Adjusting equation (2) to include the historic global mean sea-level change rate of +1.7 mm/year results in updated values for the variable b equal to 2.36E-5 for modified National Research Council (NRC) Curve I (intermediate), 6.20E-5 for modified NRC Curve II, and 1.005E-4 for modified NRC Curve III (high).

Equation (3) of EC 1165-2-211 Appendix B calculates eustatic sea level change over the life of the project. E(t) is eustatic sea level change and b is a constant provided in EC 1165-2-211; t1 is the time between project construction date and 1986; and t2 is the time between a future date at which one wants an estimate for sea-level change and 1986 (or t2 = t1 + number of years after construction (Knuuti, 2002)). For example, if a designer wants to know the projected eustatic sea-level change at the end of a project's period of analysis, and the project is to have a fifty year life and is to be constructed in 2009, t1 = 2009 – 1986 = 23 and t2 = 2059 – 1986 = 73.

Modifying equation (3), to include site-specific sea level change data, results in an equation for Relative Sea Level (RSL). This equation is used to estimate baseline, intermediate and high sea level change values over the life of the project. Based on historical sea level measurements taken from NOS gage 8720218 at Mayport, Florida, the historic sea level rise rate (e+M) was determined to be 2.40 +/- .31 mm/year (0.0076 feet/year) http://tidesandcurrents.noaa.gov/sltrends/index.shtml). The project base year was specified as 2009, and the project life was projected to be 50 years. The

average baseline, intermediate, and high sea level change rates were found to be +2.40 mm/year (0.0079 feet/year), +4.67 mm/year (0.015 feet/year), and +12.05 mm/year (0.039 feet/year), respectively.

2.3 ENVIRONMENTAL AND HISTORIC RESOURCES

2.3.1 General Environmental Setting

The study area includes the confluence of the lower St. Johns River and the Intracoastal Waterway (IWW), which is located within the City of Jacksonville, Duval County, Florida. This is a tidally influenced estuarine environment, where fresh water mixes with salt water and salinity can vary considerably. Tides in this area are semi-diurnal, which means two high and low tides per day, and the mean tidal range are approximately 3.9 feet (NOAA 2007). The lower St. Johns is a broad and meandering river, and is part of the Federal system of navigation channels for Jacksonville Harbor. As such, the portion of the river within the study area is dredged at regular intervals to the authorized depth of 40 feet. The IWW is also periodically dredged to the authorized depth of 12 feet, plus 2 feet of allowable overdepth, to a depth of 14 feet.

The northern boundary of the Mile Point study area is situated along the north shoreline of the St. Johns River. As previously described, the point is comprised of residential development and has been vulnerable to erosion for a number of years. The upland portion of this area was created by placing dredged material on top of salt marsh in the early 1900s. Helen Cooper Floyd Park is situated in the Mile Point area along the southern shoreline of the river. The park is part of t Naval Station Mayport, but it is leased to and managed by the City of Jacksonville. The area where the park is located was created in the early 1900's by side casting dredged material to the south side of the Mile Point training wall. Higher elevations of this spoil area supports upland plant species while the lower elevations have evolved into salt marsh. Immediately to the west of Helen Cooper Floyd Park is Great Marsh Island, and as the name suggests, this island is primarily comprised of salt marsh but it has a small amount of disturbed uplands consisting of old dredged material. The island has been subjected to erosion and a substantial portion of the marsh has been lost in recent years. All of the uplands and wetlands within the proposed project footprint are owned by the U.S, Navy. However, the project footprint also lies within the boundaries of the National Park Service, Timucuan Ecological and Historic Preserve. The preserve was designated to protect and interpret the ecological and historic resources of the area. The U.S. Army Corps of Engineers continues to coordinate with the preserve on the Mile Point study as well as other local projects.

In summary, the study area is a mix of river channels which are dredged to accommodate deep draft vessels, but also an estuary with extensive salt marshes and adjacent hardwood hammocks that continues to support a diverse

community of plants and animals. It is important to also note that the St. Johns River has been designated an American Heritage River.2.3.2 Threatened and Endangered Species

Threatened and Endangered species that may occur in the study area, and that may be affected by the proposed work, can be found in **Table 2**.

TABLE 2: STATUS OF LISTED SPECIES THAT MAY OCCUR WITHIN THE STUDY AREA

Species	*State Listing**	*Federal Listing**
West Indian (Florida) Manatee	LE	LE
Piping Plover	LT	LT
Wood Stork	LE	LE
Loggerhead Sea Turtle	LT	LT
Green Sea Turtle	LE	LE
Leatherback Sea Turtle	LE	LE
Kemp's Ridley Sea Turtle	LE	LE
Short-nosed Sturgeon	LE	LE
Smalltooth Sawfish	LE	LE
Northern Right Whale	LE	LE

* LE=Endangered and LT=Threatened

2.3.2.1 West Indian (Florida) Manatee

The West Indian (Florida) manatee (*Trichechus manatus latirostris*) is known to occur in the study area primarily during the spring, summer, and fall months. As water temperatures decline during the winter months, manatees generally leave the St. Johns River, as well as the IWW, and move to warm water refugia such as springs or industrial warm water discharges (O'Shea, T.J., and M.E. Ludlow 1992). Since 1993, researchers at Jacksonville University have been conducting year round bi-weekly aerial and aquatic manatee surveys of the St. Johns River and other water bodies within Duval County. Surveys conducted during 2007 through 2009 recorded approximately 7 manatees within one mile, and several others were recorded between one and two miles of the study area. This data can be viewed at the following website:

http://www.ju.edu/marco/

Demographic analysis reported by Runge et al. (2004 and 2007) indicates that manatee populations are increasing or stable over much of Florida except for the Southwest Region. The analysis suggests that the Atlantic Coast Region is experiencing a population growth rate of 3.7% per year. Other researchers have also indicated that wintering populations of manatees along the Atlantic Coast have been increasing at rates of 4-6% per year since 1994 (Craig and Reynolds 2004). The Florida Fish and Wildlife Conservation Commission (FWC) reported a total of 4,834 manatees during the annual manatee synoptic survey conducted in 2011. A total of 5,076 animals were reported in 2010.

The Mile Point study area lies within designated critical habitat of the manatee. Per CFR 50, parts 1 to 199, the designation encompasses the St. Johns River.

2.3.2.2 Piping Plover

Over-wintering piping plovers (*Charadrius melodus*) may forage on the mud flats and shorelines at, or adjacent to, Helen Cooper Floyd Park. However, the species has not been observed by USACE biologists who have visited the park during the fall and winter months. Piping plovers were observed during these same time periods at Huguenot Memorial Park, which is approximately 3 miles to the northeast and located on the Atlantic coast. This species is primarily associated with barrier beaches during the winter period (Nicholls 1996).

Since its 1986 listing, the Atlantic Coast piping plover population estimate increased 234%, from approximately 790 pairs to an estimated 1,849 pairs in 2009. The portion of the population has almost tripled, from approximately 550 pairs to an estimated 1,597 pairs (USFWS 2011a).

The nearest designated critical habitat for wintering piping plover is unit FL 35, which is located approximately 3 miles from the study area. Unit FL-35 includes Huguenot Memorial Park.

2.3.2.3 Wood Stork

Wood storks (*Mycteria americana*) have not been observed in the study area. Nevertheless, it is very likely that this species does occasionally forage within the tidal channels of Helen Cooper Floyd Park and other nearby shallow water habitats. The study area appears to lie within the 13 mile core foraging area of at least one documented wood stork colony (Pumpkin Hill).

Presently, the wood stork breeding population is believed to be greater than 8,000 nesting pairs (16,000 breeding adults). The southeast United States breeding population of the wood stork declined from an estimated 20,000 pairs in the 1930s to about 10,000 pairs by 1960, and to a low of approximately 5,000 pairs in the late 1970s (USFWS 2005).

Critical habitat has not been designated for the wood stork.

2.3.2.4 Loggerhead Sea turtle

During previous dredging events, the USACE endangered species observers have occasionally seen loggerhead sea turtles (*Caretta caretta*) within the study area. A review of the USACE Sea Turtle Data Base indicates that a total of 3 loggerheads were taken during hopper dredging activities within Jacksonville Harbor between 1994 and 2008, and all occurred below the study area between

St. Johns River mile 4 and the entrance channel. As stated above, the study area primarily lies between St. Johns River miles 4 and 5.

Along northeast Florida beaches, the primary nesting season for loggerheads is mid-May through August. From 2004 through 2008, 346 loggerhead sea turtle nests and 262 false crawls have been documented during surveys by the Florida Fish and Wildlife Conservation Commission (FWC) on northeast Florida beaches. Recent analyses of nesting data from the Index Nesting Beach Survey program in southeast Florida show the population is declining. Similarly, long-term nesting data show loggerhead nesting declines in North Carolina, South Carolina, and Georgia (NMFS 2011a).

Critical habitat has not been designated for this species.

2.3.2.5 Green Sea Turtle

USACE endangered species observers have not recorded green sea turtles (*Chelonia mydas*) within the study area. The USACE Sea Turtle Data Base indicates that one green sea turtle was taken during hopper dredging activities within Jacksonville Harbor between 1994 and 2008, and the take occurred below the study area between St. Johns River mile 4 and the entrance channel. As stated above, the study area primarily lies between St. Johns River miles 4 and 5.

From 2004 through 2008, nine green sea turtle nests and 12 false crawls have been documented during surveys by the FWC on northeast Florida beaches. According to the 5-year review performed by the USFWS and NMFS in 2007, the nesting population of green sea turtles in Florida was increasing.

The study area does not occur within designated critical habitat for this species.

2.3.2.6 Leatherback Sea Turtle

The leatherback sea turtle (*Demochelys coriacea*) has not been seen in the study area by USACE endangered species observers nor has it ever been taken by a USACE dredge operating in Jacksonville Harbor. Leatherbacks are commonly known as pelagic (open ocean) animals, but they also forage in coastal waters (NMFS 2011b).

From 2004 through 2008, three leatherback sea turtle nests and no false crawls have been documented during northeast Florida beach surveys by the FWC. The International Union for the Conservation of Nature (2011) reports that populations of leatherbacks nesting on beaches along the Pacific Ocean, once the stronghold of the species, has declined by more than 80%. However, the small nesting population within Florida is increasing. Nesting populations at all 68 beaches evaluated within the state are increasing from 3.1% to 16.3% per

year, and the number of nests across the state has been increasing by 10.2% per year since 1979 (Stewart et al 2011).

The study area does not occur within designated critical habitat for this species.

2.3.2.7 Kemp's Ridley Sea Turtle

USACE endangered species observers have not recorded the Kemp's ridley sea turtle (*Lepidochelys kempii*) within the project area, and this species has never been taken by a USACE dredge operating in Jacksonville Harbor. However, this sea turtle is known to occur in nearshore waters along the east coast of Florida ((Schmid and Ogren 1992).

Kemp's ridley sea turtles have not been recorded nesting on Florida beaches or along the eastern coast of the United States (USFWS 2011b). Nesting primarily occurs along isolated areas of Mexico with limited nesting along the Texas coast (Lutz et al 1997). This species has declined more than any other sea turtle, but nesting populations appear to be increasing (NMFS 2011c).

Critical habitat has not been designated for the Kemp's ridley sea turtle.

2.3.2.8 Shortnose Sturgeon

The shortnose sturgeon (*Acipenser brevirostrum*) historically occurred in the St. Johns River (Gilbert, C.R. 1992); however, this species has experienced significant declines within its southern geographic range (Rogers and Weber 1994, Kahnle et al. 1998, and Collins et al. 2000). Beginning in the spring of 2001, the Florida Fish and Wildlife Research Institute (FFWRI) and U.S. Fish and Wildlife Service (USFWS) began research on the population status and distribution of the species in the St. Johns River. After approximately 4,500 hours of gill-net sampling from January through August of 2002 and 2003, only one shortnose sturgeon was captured in 2002.

No critical habitat has been designated for this species.

2.3.2.9 Smalltooth Sawfish

The smalltooth sawfish (*Pristis pectinata*) is widely distributed within the coastal waters of the eastern and western Atlantic (Last and Stevens 1994). However, according to C.A. Simpendorfer et al (2008), this species' eastern Atlantic population was dramatically reduced during the 20th century, from widespread and abundant, to very rare with a restricted population range. They reported that the present core range of the eastern Atlantic population extends along the southern coast of Florida from the Ten Thousand Islands to Florida Bay, with moderate occurrence in the Florida Keys and at the mouth of the Caloosahatchee River. They also reported that smalltooth sawfish observations

have not been recorded within the St. Johns River from 1950 to 2008 (C. A. Simpfendorfer et al. 2008). The occurrence of this species within the project area is highly unlikely.

No critical habitat has been designated for the sawfish.

2.3.3 Essential Fish Habitat

Pursuant to the Magnuson-Stevens Fishery Conservation and Management Act of 1996, waters and substrate within the study area have been identified as Essential Fish Habitat (EFH) by the South Atlantic Fishery Management Council (1998). EFH is defined as those waters and substrate necessary for fish to spawn, breed, feed, or grow to maturity. Estuarine/inshore EFH within the study area consists of an estuarine water column with an unconsolidated substrate. Salt marsh, which has been designated as a habitat area of particular concern, and a small tidal channel are also present within the proposed project footprint at Helen Cooper Floyd Park. Species managed by the National Marine Fisheries Service that may occur within the study area can be found in **Table 3**, and possible prey species in **Table 4**.

TABLE 3: FEDERALLY MANAGED SPECIES OF FISH THAT MAY OCCUR WITHIN THE STUDY AREA.

Species	Life Stage	Substrate Preference*	
		Unconsolidated Sediment	Salt Mash and Tidal Channel
Brown shrimp (*Farfantepenaeus aztecus)*	A, J, L	A, J, L	J, L
Pink shrimp (*Farfantepenaeus duorarum)*	A, J	A, J	J
White Shrimp (*Litopenaeus setiferus)*	A, J	A, J	J, L
Black seabass (*Centropristis ocyurus)*	A, J	A, J	
Gag (*Mycteroperca microlepis)*	A, J	A, J	
Crevalle jack (*Caranx hippos)*	A, J	A, J	A, J
Spotted seatrout (*Cynoscion nebulosus)*	A, J	A, J	A, J
Weakfish (*Cynoscion regalis)*	A, J	A, J	A, J
Gray snapper (*Lutjanus griseus)*	A, J, L	A, J, L	A, J, L
Atlantic spadefish (*Chaetodipterus faber)*	A, J	A, J	
Sheepshead (*Archosargus probatocephalus)*	A, J, L	A, J	J, L
Red drum (*Sciaenops ocellatus)*	A, J, L	A, J, L	J, L
Black drum (*Pogonias cromis)*	A, J	A, J	

Source: Dennis et al 2001; SAFMC 1998; University of Florida 2008.
***Substrate preference, unconsolidated sediment and salt marsh habitats occur in or near the project area.A=adult; J=juvenile; L=larvae**

TABLE 4: PREY SPECIES THAT MAY OCCUR WITHIN THE STUDY AREA.

Species	Life Stage	Substrate Preference*	
		Unconsolidated Sediment	Salt Marsh & Tidal Channel
Ladyfish (*Elops saurus*)	A	A	
Striped anchovy (*Anchoa hepsetus*)	A, J, L	A, J, L	
Bay anchovy (*Anchoa mitchilli*)	A, J, L	A, J, L	
Scaled sardine (*Harengula jaguana*)	J	J	
Atlantic thread herring (*Opisthonema oglinum*)	A, J, L	A, J, L	
Sheepshead minnow (*Cyprindon variegates*)	A, J, L	A, J, L	A, J, L
Atlantic menhaden (*Brevoortia tyrannus*)	A, J, L	A	J, L
Yellowfin menhaden (*Brevoortia smithi*)	A, J, L	A	J, L
Bay scallop (*Argopecten irradians*)	A, J, L	A, J	L
Atlantic rangia (*Rangia cuneata*)	A, J, L	A, J, L	A, J, L
Quahog (*Mercenaria sp.*)	A, J	A, J	
Grass shrimp (*Palaemonetes pugio*)	A, J		A, J
Striped mullet (*Mugil cephalus*)	A, J	A, J	
Spot (*Leiostomus xanthurus*)	A, J	A	
Atlantic croaker (*Micropogonias undulates*)	A, J	A, J	
Silversides (*Menidia sp.*)	A, J, L	A, J, L	A, J, L
American eel (*Anguilla rostrata*)	A, J, L	J, L	A, J, L
Hardhead catfish (*Arius felis*)	A, J, L	A, J, L	
Gafftopsail catfish (*Bagre marinus*)	A, J, L	A, J, L	
Inshore lizardfish (*Synodus foetens*)	A, J, L		A, J, L
Oyster toadfish (*Opsanus tau*)	J	J	
Atlantic needlefish (*Strongylura marina*)	A, J, L	A, J, L	
Timucu (*Strongylura timucu*)	J	J	
Killifish (*Fundulus sp.*)	A, J, L		A, J, L
Sailfin molly (*Poecilia latipinna*)	A, J, L		A, J, L
Pipefish (*Sygnathus sp.*)	A, J, L		A, J, L
Sea robin (*Prionotus sp.*)	J	J	
Mojarra (*Eucinostomus sp.*)	A, J	A, J	
Pinfish (*Lagodon rhomboides*)	A, J, L	A, J, L	A, J, L
Silver perch (*Bairdiella chrysoura*)	A, J, L	A, J, L	
Kingfish (*Menticirrhus sp.*)	A, J	A, J	
Gobies (*Bathygobius sp., Gobionellus sp.*)	A, J, L	A, J, L	A, J, L

Source: Dennis et al 2001; SAFMC 1998; University of Florida 2008.
*Substrate preference, unconsolidated sediment and salt marsh habitats occur in or near the project area.
A=adult; J=juvenile; L=larvae

2.3.4 Shellfish and Wildlife Resources

In addition to the protected species and EFH resources described above, the study area supports other marine, as well as terrestrial biota. Oysters can be found on the mud flats adjacent to Helen Cooper Floyd Park, and to a lesser extent within the nearby salt marsh and tidal channels. Other macroinvertebrates commonly found in soft-bottom estuarine habitat in northeast Florida include annelids, a variety of mollusks besides oysters, arthropods, sponges and polyps (Hoffman and Olsen 1982).

The terrestrial or upland habitat at Helen Cooper Floyd Park is dominated by sabal palm, various grasses, cacti, and shrubs. Some species of migratory birds, especially common passerines, are likely to nest there. Common species of wading birds and shorebirds have been observed foraging on the nearby mud flats and tidal channels. Small mammals and a few terrestrial species of reptiles are also likely to occur within the upland habitat of the study area.

2.3.5 Cultural Resources

With the long maritime history of the St. Johns River, especially the Mile Point area, there is a high potential for submerged historic properties that may be adversely impacted by the proposed project. Sherman Point just east of the project area was a major shipping and coaling station. Pablo Creek provided access to a number of Spanish and British occupation settlements. The 1959 Nassau Sound to Jacksonville navigation chart shows a shipwreck on the edge of the channel near the western edge of the proposed project area. This shipwreck is not illustrated on later charts; however, a shipwreck is shown near the eastern portion of the project area on 1970s charts. The Mile Point training wall dates to the late 19th century, and the USACE is in the process of evaluating this property. Recent evaluations (1996 and 2003) of similar Jacksonville Harbor training walls have resulted in them being determined not eligible for listing on the National Register of Historic Places.

In 2009 the USACE contracted Panamerican Consultants, Inc to conduct a cultural resource survey for the Jacksonville Harbor GRR, Cultural Resources Remote Sensing Survey of the Jacksonville Harbor Project GRR2 Duval County, Florida. The Mile Point project area was included in this survey. A number of magnetic, side scan and sub-bottom profiler targets were identified in the proposed Mile Point project area. In 2010 the USACE contracted Panamerican to conduct diver identification of the potentially significant targets identified by their survey. This report, Diver Identification and Archaeological Testing: Addendum to Cultural Resources Remote Sensing Survey of the Jacksonville Harbor Project GRR2 Duval County, Florida, resulted in the identification of one potentially significant historic property (SB-10) in the Mile Point project area. This prehistoric site is located approximately three feet below the bottom surface on the eastern side of the proposed restoration fill area at Great Marsh Island.

While no definitive artifacts were recovered, such as pottery or lithics, the materials recovered during the diver identification are indicative of a prehistoric coastal shell midden. This type of site is dominated by shell and animal bone; given the small sample size, the lack of definitive artifacts is not unusual. Radiocarbon dating of the materials resulted in an estimated age of 980 ± 40 years before present (present = 1950), with a calibrated date of 970 to 1110 A.D. While there is sufficient information to identify the presence of a prehistoric site, the level of work is not sufficient for a determination of eligibility for listing on the National Register of Historic Places. In accordance with the National Historic Preservation Act and the implementation regulations for Section 106 of the Act it will be treated as if it were eligible until a determination can be made.

The remote sensing survey resulted in a magnetic target near the location of the shipwreck symbol on the 1959 navigation chart. However, the diver identification investigation indicated that this magnetic anomaly was from a 30-foot long section of wire rope. No evidence of the mapped shipwreck was found.

The existing Mile Point training wall is under evaluation for eligibility in the National Register of Historic Places. The wall is a historic structure and its significance is still under evaluation. If it is determined that the structure is significant and that project implementation will create an adverse effect, the following steps will be undertaken:

- Determine if project alterations are possible that will avoid or minimize the effect. If avoidance is not possible then develop a memorandum of agreement (MOA) to outline mitigation of effects. Implement mitigation of adverse effects.[9]

2.3.6 Water Quality

Waters within the study area have been designated by the state of Florida as Class III - Recreation, Propagation and Maintenance of a Healthy, Well-Balanced Population of Fish and Wildlife. In addition, the study area is just south of the Nassau River-St. Johns River Marshes Aquatic Preserve.[10]

Two tributaries which flow into the project area at Chicopit Bay, Greenfield Creek and Mt. Pleasant Creek, have been identified by the state as not meeting Class III surface water standards for fecal coliform bacteria. Thus, they have been designated by the state as 303(d) list verified impaired water bodies. As a result, Total Maximum Daily Loading (TMDL) allocations for discharges within the watersheds have been established. This allocation was based upon the assumption that the existing watershed hydrology would be maintained while remediation efforts are conducted within the watershed by state and local agencies. Since flow through Chicopit Bay is currently restricted by shoal

[9] Of note: These mitigation costs are 100% Federal.
[10] A map of the preserve can be viewed at the following link: http://www.dep.state.fl.us/coastal/sites/nassau/map.htm

material, blocking off the current channel through Great Marsh Island would likely substantially limit the flushing capacity of Greenfield Creek and Mt. Pleasant Creek, thus adversely affecting the implementation of the state and local TMDL remediation activities.

2.3.7 Hazardous, Toxic, and Radioactive Waste (HTRW)

A Phase 1 Environmental Site Assessment was conducted in conformance with the scope and limitations of American Society of Testing and Materials (ASTM) Practice E 1527. The review of available HTRW data, historical sediment and water quality data, aerial and water site visits, and the frequency of dredging activity within the project area all indicate that the site is highly likely to be free of hazardous and toxic materials and waste (USACE 2004).

2.3.8 Air Quality

According to the Florida Department of Environmental Protection, Florida is one of only three states east of the Mississippi River to meet all national air quality standards. Local emissions appear to be minimal.

2.3.9 Noise

The ambient (or surrounding) noise level of the Mile Point study area includes human-caused (recreational boat traffic, ship engines, occasional military aircraft, construction activities, etc.) and natural (wind, waves, birds, etc.) sources. All of these sources are intermittent; their strength, as well as frequency, can vary considerably due to the type of activity, distance from receptor, and weather conditions. The U.S. Environmental Protection Agency (EPA) has established that construction noise resulting in an hourly equivalent sound level of 75 dBA at a sensitive receptor (e.g., hospital, residence, church) would represent a significant impact. During operation, heavy equipment and other construction activities generate noise levels ranging typically from 70 to 90 dBA at a distance of 50 feet. That portion of the study area where construction would occur is located within or adjacent to Helen Cooper Floyd Park and Great Marsh Island. These locations are over 2,000 feet from the nearest development, i.e. residential or commercially zoned properties.

In addition to noise in the air, pile driving and other construction and/or upgrade activities can produce underwater noise. For underwater environments, ambient noise includes tides, currents, waves, as well as noise produced by marine mammals and by humans. Human-caused noise can be generated from the operation of vessels or boats, aircraft, dredging equipment, and other activities.

2.3.10 Aesthetics

The study area lies in the near vicinity of commercial port facilities, businesses, and residential neighborhoods. However, this portion of the St. Johns River also has many scenic qualities and perhaps the most remarkable of which are the salt marshes.

2.3.11 Recreation

Recreational boat traffic regularly transits through the study area via the St. Johns River and IWW. Recreational boaters from Mt. Pleasant Creek also use the eroded breakthrough at Great Marsh Island in order to gain access to the river. Fishing is a very popular recreational activity, and many fishermen can typically be observed using Helen Cooper Floyd Park. The park has a public fishing pier, an accessible shoreline, and some people climb onto the Mile Point training wall to fish.

2.4 ECONOMIC CONDITIONS

Jacksonville Harbor allows for transportation of international and domestic cargo to and from the terminals located along the Federal channel. All vessels traveling to the Port of Jacksonville and many of the terminals along the channel must pass through the Mile Point area of Jacksonville Harbor. As is discussed in this report there are strong crosscurrents located at the confluence of the St. Johns River and the IWW; due to these crosscurrents the St. Johns Bar Pilot Association (Pilots) restricts some vessels to ebb tide movements inbound and outbound to and from the upstream river terminals. The Pilots' St. Johns River Navigational Guidelines (2011) stipulate ebb tide restrictions for inbound and outbound vessel movements are attributable to the without-project Mile Point conditions as follows: [11]

Inbound Vessels

> Vessels with draft over 33 feet (fresh water) but no more than 36 feet (fresh water) shall start in no sooner than 15 minutes before start of flood current on the bar. Vessels with greater than 36 feet of draft (fresh water) shall start in no sooner than 30 minutes after start of flood current on the bar. Stop taking in vessels with draft over 33 feet (fresh water) one hour before start of ebb current. [12] Vessels that have called at the port and have proven to have exceptional handling characteristics, transiting to TraPac or Blount Island Terminals, with a fresh water draft of 34 feet or less, may start in anytime and any stage of the tide.

[11] St. Johns Bar Pilot Association, pages 8 and 9 (2010).
[12] Other outbound sailing draft restrictions are assumed to be raised to Blount Island standards (36 feet) effective with the completion of the 40-foot channel as authorized beyond Dames Point to Talleyrand Terminals.

Outbound Vessels

> Vessels leaving Blount Island with a draft over 36 feet (at their berth) sailing time shall be no sooner than the start of flood current (emphasis supplied). Cut off time is the beginning of ebb current.

Effectively, vessels entering the St. Johns River are restricted whenever their sailing drafts exceed 33 feet (fresh water), and vessels departing the St. Johns River are restricted whenever their sailing drafts exceed 36 feet (fresh water). The Mile Point ebb tide restrictions effectively function as a tidal delay for vessels with sailing drafts within the authorized channel depth less normal underkeel clearance.[13]

Detailed vessel call lists, projections, and vessel delays by type are available in Appendix B (Economics Appendix). The majority of vessels that were affected by the tidal delay were inbound vessels, with only a slim amount of outbound vessels transiting over 36 feet. For the entire Jacksonville Harbor, Mile Point tide delayed inbound calls are nearly 20 percent of all calls with only two to three percent of outbound vessels

Bulk, tanker, container, and general cargo vessels are the majority of constrained vessels due to the Mile Point restrictions. The major commodity groups by tonnage for Jacksonville Harbor are petroleum and related products, crude materials, coal, manufactured equipment, machinery and products, and primary manufactured goods. These commodities transit primarily on Container, Liquid Bulk and Dry Bulk vessels. The Jacksonville Port Authority (JPA) has been moving to aggressively exploit its undeveloped terminal sites for both bulk and containerized cargo. Prior to the development of the Mitsui terminal, Jacksonville was primarily a regional container port for Puerto Rico and the Caribbean, with some limited service to South America.

JPA has also attracted new bulk commodity shippers such as CEMEX/Rinker that will bring upwards of 2.0 million tons of aggregate into the port at a site nearing completion adjacent to the Martin Marietta site. Also, Vulcan Materials will likely secure a similar site in proximity to the existing berth that will serve Martin Marietta and CEMEX/Rinker. Interviews with these aggregate firms suggest that the local market is limited to within about 100 miles of the port and will experience modest growth reflecting changes in population.

Population growth rates were used as the basis for increasing the cargo volumes handled through Jacksonville Harbor except for liquid bulk cargo for which no

[13] The authorized project depth for the channel at Mile Point is minus 40 feet. With a two-foot underkeel clearance, allowance vessels should be able to enter and exit the St. Johns River up to 38 foot drafts without any tidal delay. Effectively, Mile Point inbound restriction of 33 feet adds five feet of tidal delay (38-33 = 5) for inbound vessels and two feet of tidal delay for outbound vessels (38 – 36 = 2).

growth was assumed because of the preponderance of automotive fuel imports which are not expected to grow.

Jacksonville Harbor has long served as a regional port for Puerto Rico, other Caribbean trades, and South America for containers and general cargo and for a local distribution of imported bulk cargo. Container tonnage has been dominated by Puerto Rico. Jacksonville is the principal domestic port for this trade, dominating with several services characterized by both self-propelled vessels and barges. Container trades to world areas other than Puerto Rico, the Caribbean, and South America have been relatively undeveloped until recently (Asia). The port also handles refined petroleum imports for the local region (north Florida and south Georgia) as well as dry bulk (coal, cement, and aggregates). Finally, the port is a regional distribution point for automobile imports into the southeast U.S.

Jacksonville clearly dominates the Caribbean (Puerto Rico) trade, with about a 95 percent share (top commodities) compared to Savannah and Charleston. Otherwise, Jacksonville has a much smaller market share in other major regional markets that it serves such as East Coast South America (ECSA) at about 34 percent (imports and exports)and West Coast South America (WCSA) at about 14 percent (imports and exports). Outside of the regional markets, Jacksonville has a very small share of the global markets. Recently, Jacksonville has entered the Asia market and re-entered the European market with direct services, both arising from relatively new container services that initiated services to the port at the TraPac Dames Point terminal in 2009.

The vessel fleets outlined in the Economic Appendix B were projected based on expected growth in commodities and trades. Jacksonville Harbor is expecting significant growth in the number and sizes of container vessels expected to call as a result of the completion of the TraPac container terminal and the subsequent development of the planned Hanjin container terminal. TraPac is currently served by major eastwest global container services using Panamax and Post-Panamax container ships that are also calling other East Coast U.S. ports, including Savannah Harbor. After expansion of the Panama Canal, Far East services are expected to always be Mile Point sailing draft restricted for inbound and outbound movements. The shifts in the container fleet at Jacksonville Harbor have a major impact on delays associated with Mile Point. Container vessels are also the most expensive to operate on a time basis compared to bulk, tanker, and general cargo vessels. See Section 4.2 of the Economics Appendix for detailed projections.

The economic consequences of the no action scenario are the continued incidence of the additional resource costs of commodity transport associated with vessel tide delays. Vessels anchored off the coast as a result of tide delay waste fuel and labor, as well as both private and public sector capital resources. The private capital wasted is the vessel, which could be otherwise used for its

intended function (commodity transport). The public sector capital resource wasted is a 40 feet deep navigation channel restricted to operating as a 33 feet deep channel for significant periods of time. Given the tendency of the world fleet to operate at increasingly deeper sailing drafts, this problem is likely to be exacerbated over time. As older vessels reach the end of their service life, they are likely to be replaced with newer vessels that tend to operate at deeper sailing drafts. The alleviation of these inefficiencies is the navigation benefit associated with the recommended channel improvements.

2.4.1 MOL and Hanjin Alliances and Global Presence

The new TraPac Container Terminal (built in 2009), has two 1,200-foot berths that line a 158-acre facility used by Mitsui O.S.K. Lines (MOL) and its terminal operating partner, TraPac, to load and unload container ships sailing to and from ports in Asia. Jaxport (Jacksonville Port Authority) is leasing this space to Tokyo-based MOL. The TraPac Container Terminal is located between two existing Jaxport facilities: the Jaxport cruise terminal just off of Heckscher Drive and Jaxport's existing bulk cargo terminals at the southern end of the Dames Point peninsula. Jaxport and the Florida Department of Transportation (FDOT) have completed road improvements at State Road 9-A/Heckscher Drive and Heckscher Drive/New Berlin Road to better accommodate vehicular and truck movement through the area.

MOL's liner route network coverage is global, and there are plans for future global expansion. In 1995, MOL's leadership helped create a world strategic alliance with other carriers. To better serve trans-Pacific, trans-Atlantic, and Asia-Europe routes, MOL, APL of Singapore, and Hyundai Merchant Marine of South Korea formed the New World Alliance (NWA), which plays a key role in cargo trade on these international routes. The NWA growth is particularly strong in Asia, which has seen tremendous economic expansion in recent years, and in South America and Africa, markets where MOL traditionally has held an advantage. The Alliance also serves the Middle East, Russia, and Australia. MOL operates liner routes with a fleet of over 100 containerships. These vessels range in size up to 8,000 TEUs. MOL continues to launch new vessels to boost efficiency and competitiveness. MOL has expanded its container inventory in step with the growth of its containership fleet to include maintenance of reefer containers to meet growth.

MOL has 8 owned-and-operated container terminals worldwide (Tokyo, Yokohama, Osaka, Kobe (Japan), Laem Chabang (Thailand), Los Angeles, Oakland, Jacksonville (USA)). To meet expanding needs, new terminals are now being built at Cai Mep Port in Vietnam, and in Maasvlakte 2 Zone in the Port of Rotterdam, the Netherlands. MOL terminals have state-of-the-art systems and equipment.

MOL also serves the global auto industry with a large, flexible fleet. MOL launched Japan's first ship designed to transport cars. Since then, MOL service has expanded from handling Japanese exports to serving global auto production centers including Japan/South Korea, North America, Europe, and Southeast Asia. Today's car carriers are designed to ship all types of motor vehicles, from automobiles to construction machinery. Since the cargo can move under its own power, these roll on/roll off carriers need no specialized loading equipment other than rampways used to drive the vehicles on and off the ships. The largest car carrier in service today can accommodate 5,300 vehicles on 13 cargo decks. The Blount Island terminal at Jaxport is 754 acres, Jaxport's largest marine facility terminal, and is one of the largest vehicle import/export centers in the United States. The terminal also handles Ro/Ro, heavy lift, breakbulk and liquid bulk cargoes.

As of the first quarter of 2011, MOL featured a total of 88 service lanes, 7 lanes for Asia to Africa and the Middle East, 6 lanes for Asia to Europe, 2 lanes for Asia to the Mediterranean, 16 lanes for Asia to North America, 5 lanes for Asia to Oceania, 10 lanes for Asia to South America and Latin America, 4 lanes for Europe to Africa, 1 lane for Europe to North America, 23 lanes for Intra-Asia services, 5 lanes for Latin America services, 7 lanes for North America to Latin/South America, 1 lane for North America to South Africa, and 1 lane for South America to Africa service.

Out of the 16 Asia to North America lanes, 5 service lanes call the east coast of the U.S. (routes CNY, NYX, SVE, NUE and SZX, of which the first three call Jacksonville). The CNY port rotation has a Panama Canal transit and calls the following U.S. ports: Miami, Jacksonville, Savannah, Charleston, Norfolk, and New York (different calls under eastbound and westbound rotations). The NYX rotation calls New York, Norfolk, Savannah, Jacksonville, and Miami. The SVE rotation is a Suez transit westbound calling New York (after Halifax), Norfolk, Jacksonville, followed by Savannah (and returns westbound around the cape of Africa to Singapore). The NUE rotation is a Panama transit calling New York, Norfolk, and Charleston. The SZX rotation is a Suez Canal transit calling New York, Charleston, Savannah, and Norfolk. The other 11 service lanes are from Asia to the west coast of the U.S. (i.e., Los Angeles/Oakland, Pacific Southwest, Pacific Northwest, and west coast Canada).

The Europe to North America trade route (APX) has the following U.S. port calls, eastbound: New York, Norfolk, Charleston, Savannah, Jacksonville, Miami, followed by a Panama Canal transit to Los Angeles and Oakland. The North America to South Africa trade route (via APX) has New York, Charleston, Savannah, Jacksonville, and Miami as port of loadings with intermediate ports in rotation to Europe. For the North America Latin/South America trade route, Jacksonville is a port of call to MOL for 4 out of the 7 trade routes (ACW, CNY, ECX, and NYX).

In December 2008, Jaxport executives and representatives of the Hanjin Shipping Company of Seoul, Korea signed a 30-year lease agreement calling for construction of a 90-acre container facility at the Dames Point Marine Terminal. The lease contains an option for further expansion (with an option for a 10-year extension). The $300 million Hanjin Container Terminal at Dames Point is expected to open for business in 2016 and will be a key hub operation for Hanjin's east coast port activity.

The construction of Hanjin terminal operations will be located on Jaxport's Dames Point Marine Terminal adjacent to the TraPac container terminal (next to the MOL facility). The Hanjin shipping alliance and the developed container terminal facility with Jaxport will have the following to offer:

- As part of the CKYH Alliance, Hanjin is allied with China-based China Ocean Shipping Co. (COSCO), Japan-based Kawasaki Kisen Kaisha Ltd. ("K" Line) and Taiwan-based Yang Ming Line. The CKYH Alliance has enabled Hanjin Shipping to broaden its service coverage, offering Express Services, and sharing space with the allies to lower costs.
- The Hanjin fleet includes some 200 containerships and bulk and liquefied natural gas carriers.
- Jaxport will design, permit and finance the Hanjin terminal project and perform and complete the construction.
- The terminal will include two berths able to accommodate post-Panamax vessels.
- Terminal capacity is designed for annual handling of more than 800,000 twenty-foot-equivalent container units, or TEUs.
- A dual operating system will utilize rubber-tired gantries and rail-mounted gantry cranes.
- A computerized operating system will facilitate free flow of information between the terminal, customers and government agencies.

As South Korea's largest container carrier, Hanjin moves more than 100 million tons of cargo annually and operates in more than 50 countries, which also makes the company the sixth largest container carriers in the world (as of 2010). In the U.S., Hanjin subsidiary Total Terminal International presently runs dedicated terminal operations in Seattle, Long Beach and Oakland. The Hanjin Container Terminal will be the company's first dedicated U.S. operation outside the west coast, a strategic move meant to capitalize on the expansion of the Panama Canal and the anticipated increase in container traffic along the east coast.
In 2010, Hanjin shipping featured a total of 57 service lanes, 19 lanes for Trans-Pacific service, 3 lanes for Trans-Atlantic, 14 Asia- Europe service, 14 Intra-Asia and Australia service, 5 Latin America services and 2 Africa service. Hanjin Shipping's 200 vessels visit ports of call all over the world. Most of the company's revenue comes from its container shipping operations, which include service on Trans-Pacific, Europe and Atlantic, and Intra-Asia and Australia routes. Along with containerships, Hanjin Shipping's fleet includes bulk carriers, both for dry

cargo such as coal, grain, and iron ore, and for liquid cargo such as crude oil and petroleum products, and LNG (liquefied natural gas) carriers. The company also provides logistics and terminal management services.

The three Hanjin Trans-Atlantic services are as follows: (1) India-Mediterranean-USA Service (IMU) calling the following U.S. ports: New York, Norfolk, and Savannah; (2) MED-Canada Service (MC1) calling only Montreal in North America; (3) North Trans- Atlantic Express Service (NTA) calling New York, Norfolk, and Charleston.

3.0 FUTURE WITHOUT-PROJECT CONDITIONS

Under the without-project future conditions there would be no Federal action to address the navigation restrictions and the erosion problems at the Mile Point shoreline. Projections were made to include the period of analysis starting 2015 and ending 2065. Under this condition both the navigational restrictions that are enacted due to the crosscurrents at Mile Point and the erosion problems caused by these crosscurrents would continue to be in effect. As is described under section 2.4 Economic Conditions; the navigational restrictions primarily affect Bulkers, Tankers, Container Vessels, and General Cargo vessels. Jacksonville Harbor is experiencing growth for both Container and Bulk Vessels. Container service for the new Mitsui terminal is now in operation. The development of the Mitsui terminal is expected to bring major east-west global services to Jacksonville Harbor.

Under the future without-project condition, Bulk vessels and Container vessels are projected to grow particularly with the addition of new terminals as described in the previous section. Tanker vessels are expected to stay steady and not grow due to uncertain market conditions. General Cargo vessels are expected to experience minimal growth with market conditions. Under the without-project condition vessel traffic is expected to increase and overall transportation costs are expected to increase due to vessel delays.

Homeowners on the north bank of the river at Mile Point have experienced catastrophic shoreline erosion to their property and have serious concerns about future property losses; this is detailed in the next section of this report under Problems and Opportunities. The expected future condition (without-project) for the Mile Point shoreline consists of continued progressive erosion of the shoreline progressing from the west to east.

In addition to shoreline erosion on the north shore of Mile Point; there has been a breakthrough at Great Marsh Island on the southern bank of the St. Johns River that has caused severe shoaling of Chicopit Bay. Under the without-project, the shoaling of Chicopit Bay would continue. The shoaling of Chicopit Bay has been ongoing and resulted in the Great Marsh Island breakthrough. Prior to the breakthrough at the confluence of Mt. Pleasant Creek with Chicopit Bay and the IWW, there were depths of 7 to 10 feet in Chicopit Bay; however after the breakthrough, the area has mainly shoaled in. See **Figures 8, 9, and 10** in Section 4 for aerial pictures of this area and the breakthrough development over time. The recently formed channel through the eroded portion of Great Marsh Island now flushes the bay. The salt marsh at Great Marsh Island is expected to continue eroding under the without-project condition. Other environmental conditions are expected to remain unchanged.

Prior to the breakthrough of Great Marsh Island and the continued erosion, salt marsh was present. The marsh at this location has been eroding over the years, and recent site inspections have indicated that it is still actively eroding.[14] For a representative future without-project condition see the Hydrology and Hydraulics section, Engineering Appendix A that details the effects of the Mile Point issues on the surrounding areas. Sea level rise is expected to exacerbate the loss of salt marsh under both the with-project and without-project conditions.

A single prehistoric site has been identified within Great Marsh Island. There is insufficient information for an evaluation of eligibility for listing on the National Register of Historic Places. Until such evaluation is made, Historic Preservation guidelines require that the site be treated as if it was listed. The existing conditions have resulted in substantial erosion and loss of Great Marsh Island, exposing the prehistoric site. This erosion is expected to continue with an eventual loss of the archeological site.

Additional future without-project conditions include the addition of a new container service Hanjin. This service is in addition to the new Mitsui O.S.K. Lines, Ltd (MOL) container service. Hanjin will bring container vessels that typically have a design draft greater than 33 feet and, as such, could be subject to the navigational restrictions at Mile Point. In addition, the Panama Canal expansion, facilitating the use of larger vessels, is expected to be operational in 2014. The existing Panama Canal dimensions can accommodate a maximum vessel draft of 39.5 feet (tropical fresh water), maximum vessel beam of 106 feet, and maximum vessel length of 965 feet. The expanded canal is designed to accommodate a maximum vessel draft of 50 feet (tropical fresh water), a maximum vessel beam of 160 feet, and a maximum vessel length of 1,200 feet. Vessels that may be affected by the Panama Canal expansion that could transit Jacksonville Harbor with additional deepening include post-Panamax Containerships. Post-Panamax container vessels that transit on Asia trade routes currently call on the west coast of the United States with land bridge service (rail and truck) to the rest of the United States. With the Panama Canal expansion, these vessels will be able to transit to the east coast United States ports. Affected vessels include the Maersk S-Class which has vessel dimensions of a maximum draft of 48 feet, beam of 141 feet, and length of 1,139 feet. This class of vessel is more than three times the length of an American football field.

[14] Appendix D: Mitigation Plan and Incremental Analysis, Attachment 5: Historical Maps and Aerial Photos, Attachment 3: Photos 3 and 4.

4.0 PROBLEMS AND OPPORTUNITIES

The existing conditions at Jacksonville Mile Point require vessels to be restricted on the ebb tide due to difficult crosscurrents at the confluence of IWW and the St. Johns River. According to the St. Johns Bar Pilots, the area of the river where the IWW crosses the St. Johns River produces crosscurrents that can actually turn an inbound, under powered ship around. The U.S. Coast Pilot[15] describes that area as one of particular concern, describing the junction of the IWW with the St. Johns River as subject to strong and unpredictable crosscurrents at various stages of tide.

The crosscurrents at Mile Point are also of concern for erosion on the Mile Point shoreline. In the recent past, homeowners on the north bank of the river at Mile Point have seen severe erosion of their property and are seriously concerned about future property losses. The homeowners speculate that the cause of the erosion is due to hydrodynamic effects of dredging done by the U.S. Army Corps of Engineers, installation of the Atlantic Marine dry dock, and deterioration of the Mile Point training wall.

4.1 PUBLIC AND AGENCY CONCERNS

During a April 15, 1997 risk analysis meeting for Jacksonville Harbor at the Jacksonville Office of the U.S. Coast Guard (USCG), most harbor pilots, commercial towing company representatives, and tug/barge operators identified the Intracoastal Waterway (IWW)/St. Johns River confluence as the harbor location with the greatest risk.

On September 4, 1997, and October 6, 1997, meetings with towing company and bar pilot personnel confirmed two different opinions relating to the repair of the Mile Point training wall. Most operators of tugs towing the large roll-on/roll-off triple deck barges wanted a shorter period of time to deal with the crosscurrents. The bar pilot representative indicated that a longer period of time with a reduced crosscurrent strength might be preferred for the commercial ships.

Currently, submerged sections of the Mile Point training wall present a challenge to recreational boaters not familiar with the area. One towing company representative noted that boaters sometimes run aground on unseen submerged sections of the training wall. In his discussion of the historical deepening of Jacksonville Harbor from a depth of 18 feet to 24 feet during the construction years of 1905 through 1909 in *Sun, Sand and Water*, Dr. Buker notes the impact that construction of the jetties and deepening had on the shorelines of the St.

[15] The United States Coast Pilot 4, published by the National Ocean Service (NOS) and National Oceanic and Atmospheric Administration (NOAA), Atlantic Coast: Cape Henry to Key West, 2008 (40th Edition), p. 390. http://www.nauticalcharts.noaa.gov/nsd/coastpilot/files/cp4/CP4-40ed-reduced.pdf

Johns River: "The effect the jetties had upstream soon demanded notice. The current flow had increased due to the bar project and the river dredging. The riverbanks in some places became undercut and vast amounts of earth fell into the riverbed. St. Johns Bluff and Dames Point were especially hard hit. St. Johns Bluff was set back several hundred feet within a period of 10 years. This latest problem called for building retaining walls and throwing up riprap (a sustaining wall of stones put together without any formal order, as in deep water or on embankments to prevent erosion) at various places along the river bank. Chaining the St. Johns bar spread construction upriver."[16]

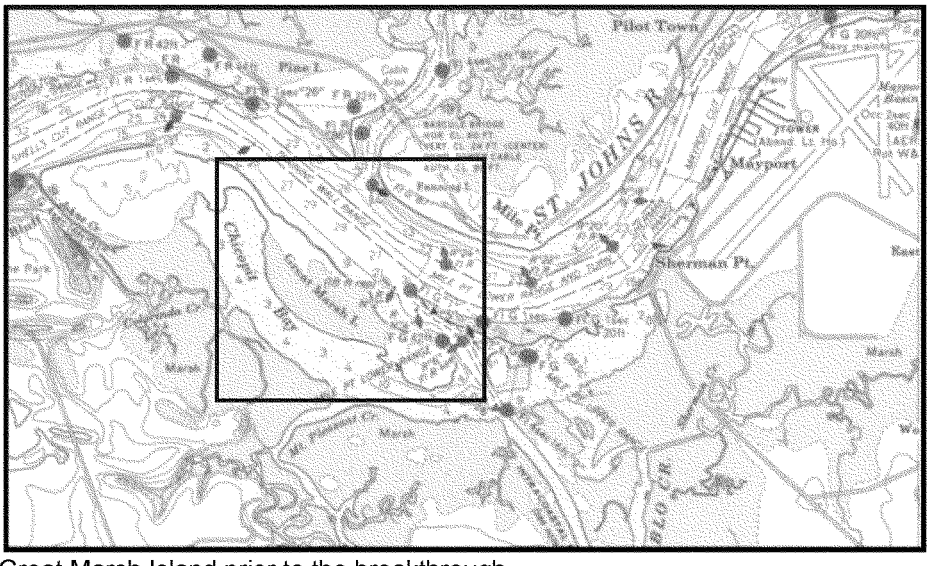
The undercutting of the Mile Point shoreline apparently started in the late 1960s or early 1970s according to the enclosed Heckscher Drive Community Club (HDCC) position paper.[17] Long time HDCC residents state that, in the 1960s, one could ride a bicycle on a beach along the Mile Point shoreline from the Mayport Ferry slip to the Intracoastal Waterway. Prior to the 1960s early photographs and surveys dated 1933 through about 1953 indicate the Mile Point north shoreline consisted of a marsh area covered by gradually increasing areas of dredged material.

The U.S. Army Corps of Engineers (USACE), Jacksonville District met with environmental resource agencies and adjacent landowners on August 26, 2008 to discuss the Jacksonville Mile Point study and the numerical hydrodynamic modeling results. The purpose of the hydrodynamic modeling is to provide recommendations for reducing or relocating the difficult crosscurrents during the ebb flow at Mile Point. The results of the modeling were favorable for one of the alternatives; relocate the Mile Point training wall. During the meeting, the following concerns were expressed: how changes to the local sedimentation or shoaling rates would prevent future erosion; if the predicted velocity rates indicate an effect on future erosion; and if the work would affect salt marsh associated with Four Pines Island and Greenfield Islands **(Figure 5)**. There was a concern by the representatives at the meeting that the proposed project would affect the flows from Chicopit Bay. National Marine Fisheries Service (NMFS) and the United States Fish and Wildlife Service (USFWS) stated that they would support a Flow Improvement Channel (FIC) in Chicopit Bay. They also stated that they would support the concept of expanding the Great Marsh Island Restoration Area to the south. During the meeting, the Mayport Naval Station agreed to follow-up on the required real estate license at the appropriate time. The port also expressed their support of the proposed work. **Figures 8, 9 and 10,** show the development of the breakthrough of Great Marsh Island over time. As can be seen in the 1957 aerial where Great Marsh Island is shown prior to the breakthrough, there were depths of 7 and 10 feet in Chicopit Bay. After the breakthrough in 2004 **(Figure 10)**, areas of Chicopit Bay started to shoal in.

[16] George E. Buker, PhD, Sun, Sand, and Water, A History of the Jacksonville District U.S. Army Corps of Engineers 1821-1975k, U.S. Army Corps of Engineers, 82-83.
[17] HDCC Position Paper located in Appendix E (Pertinent Correspondence). The letter is dated January 11, 1998.

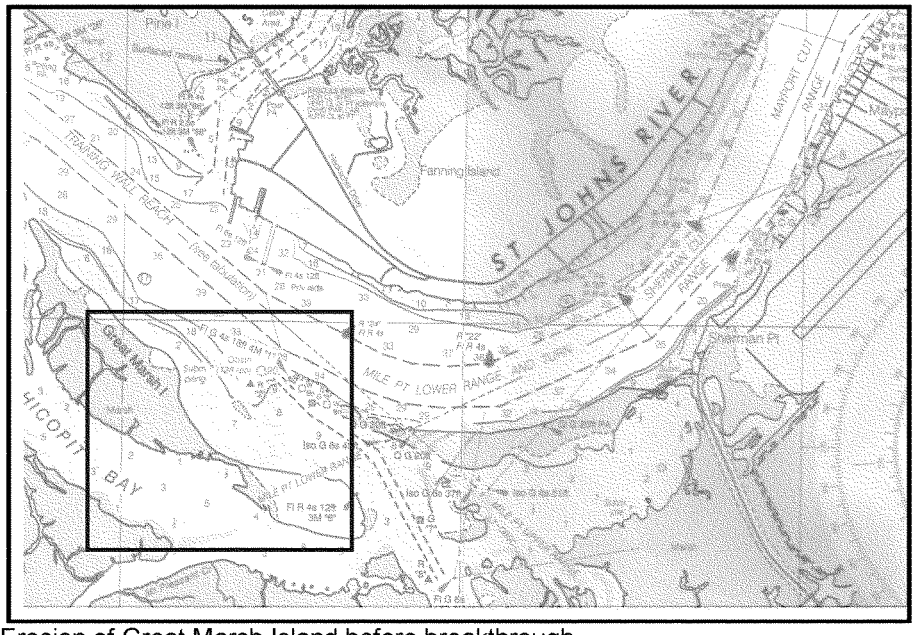
A public workshop was held on August 15, 2011 to provide agencies and the general public additional opportunity to discuss the draft Integrated Feasibility Report and Environmental Assessment. The Florida Department of Environmental Protection (DEP) reviewed the report, and has stated that a FIC must be maintained. Also, construction sequencing of a western training wall, restoration site, and FIC must be addressed to prevent flushing impairment within Chicopit Bay. If these issues are not addressed, then the DEP may not have reasonable assurance to provide State Water Quality Certification for the project. Residents living along Greenfield and Mt. Pleasant Creeks have also stated that construction of a western training wall, restoration site, and FIC should be properly sequenced so that they have continued access to the IWW and St. Johns River. The residents have also requested that future maintenance dredging of an FIC be included within the project authorization (please refer to Section 7.24.4 for more information on this issue).

FIGURE 8: NAV CHARTS 577 FEBRUARY 1957



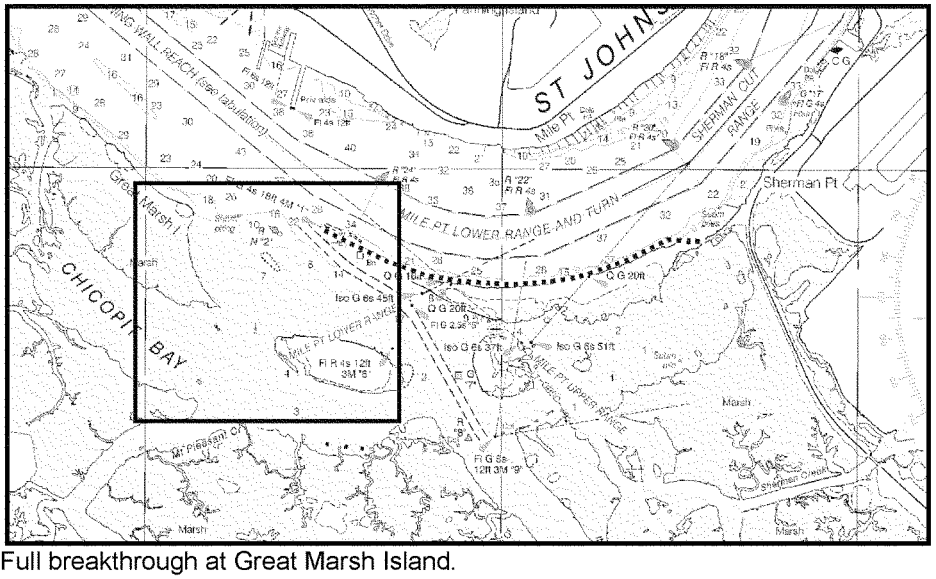
Great Marsh Island prior to the breakthrough.

FIGURE 9: NAV CHART 11491 MARCH 2001



Erosion of Great Marsh Island before breakthrough.

FIGURE 10: NAV CHART 11491 DEC 2004



Full breakthrough at Great Marsh Island.

4.2 COAST GUARD CASUALTY DATA

United States Coast Guard (USCG) casualty data dating from 1982 to 2004 contained over 500 casualties in and around the St. Johns River. The USCG Casualty data consists of reported collisions, allisions (a collision between a moving vessel and a stationary object), groundings, events of pollution, loss of vessel control, damage to environment, capsizing, equipment failure, and flooding. The majority of the casualty data points are located in the northern portion of the river, beginning at the Matthews Bridge (downtown Jacksonville) and increasing northward to the mouth of the river (**Figure 11**). The earliest data points collected have a tendency to deviate from the river and tributary boundaries due to the smaller accuracy of GPS recording at that time. In the vicinity of the Mile Point project area, collisions, allisions, groundings, one pollution event, loss of vessel control, and one damage to the environment event were all reported (**Figure 12**). None of the data points shown include the type of vessels affected by the navigation issues. These findings highlight the concern and safety risk posed by the present hydrodynamics of Mile Point and demonstrates that the St. Johns Bar Pilots restrictions are effective at reducing risk.

It is difficult to maintain control of an under-powered vessel in river reaches and channel cuts subject to strong currents. Vessels with mechanical failure are included in this category. A vessel with inadequate power that is moving at 2 knots against a 3 knot current can go backwards while facing in the direction intended by the crew in control.

A risk assessment dated February 3, 2004 was completed by the USCG[18] relating to a permit request by Atlantic Marine, Inc. (AMI). The assessment evaluated impacts to navigation in the main Federal channel in the St. Johns River and the IWW. The assessment stated:

> "The west drydock and pier extension as described to the workgroup involved extending the length of the existing pier by 160 feet and mooring a floating drydock to the eastern side of the pier. The river pilots opposed this part of the project because of the effect it would have on navigating large deep draft ships up bound or down bound in the river. The pilots said that the 160-foot pier extension and likelihood that berthed ships will overhang the pier and drydock, created an unacceptable navigation hazard."

While the proposed pier extension did not extend into the channel or setback limits, the pilots asserted that "during certain times, the current into the St. Johns River from Sisters Creek (north IWW) was especially strong, and allowing for an extra margin of safety in distance between the channel and end of the pier was necessary to prevent the possibility of an allision with the pier."

[18] Risk Analysis Coast Guard Pages from Document SAJ-1994-9814340580

The decision resulted in the St. Johns Bar Pilots agreeing with the USCG and AMI to reduce the length of the 160-foot pier extension by 80 feet. The revised design at 80 feet was acceptable based on the crosscurrent conditions and the distance from the channel. The risk assessment evaluated the affects of erosion caused by the proposed pier extension on the shoreline in the vicinity of the project. The results of the modeling showed under a "worst-case" scenario, the result would only be a "negligible change in flow velocities." The risk assessment affirms that strong currents in the vicinity of the IWW and the St. Johns River create additional safety concerns, affecting both navigation and berthing facilities along that area.

FIGURE 11: USCG CASUALTY DATA – JACKSONVILLE HARBOR

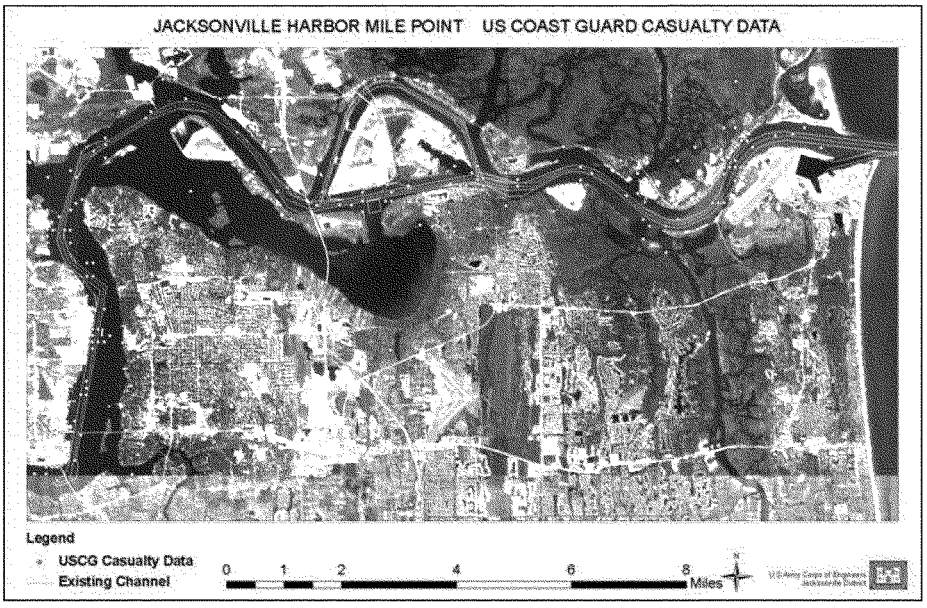
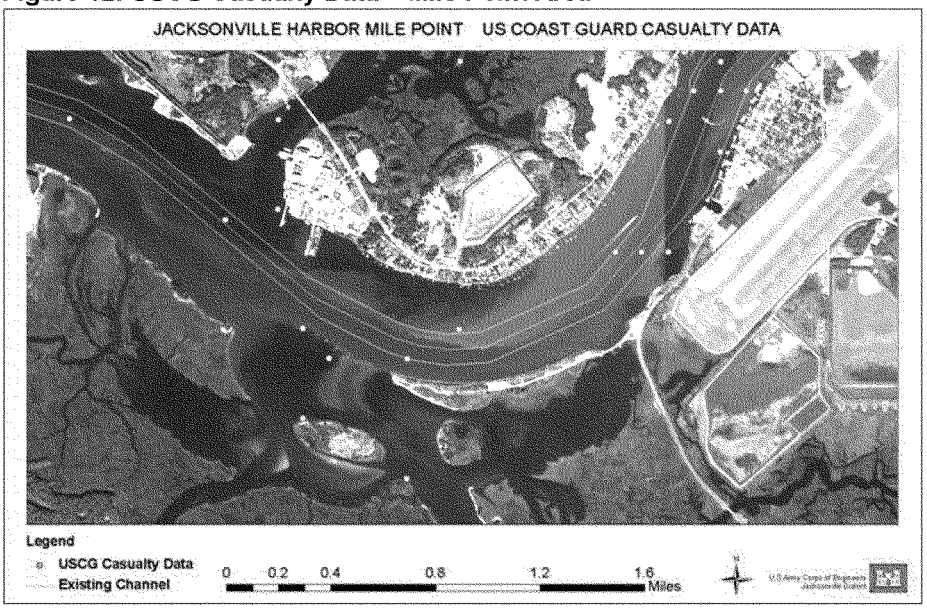


Figure 12: USCG Casualty Data – Mile Point Area



4.3 PLANNING OBJECTIVES

4.3.1 Federal objectives

The Federal objective of water and related land resources planning is to contribute to National Economic Development (NED) consistent with protecting the nation's environment, in accordance with national environmental statutes, applicable executive orders, and other Federal planning requirements.

1) The objective of this feasibility study is to provide solutions to the previously defined problems in accordance with the Federal objective, objectives of the non-federal sponsor and other interested parties. Planning objectives are statements that describe the desired results of the planning process. Their goal is to solve the problems and take advantage of the opportunities that are identified for the study. Study planning objectives must:

- Be clearly defined
- Provide information on the effect desired
- State what will be accomplished
- State the location of where the action will take place
- State when the action would take place

2) Four accounts are established in the Principles and Guidelines (P&G) to facilitate the evaluation and display of effects of the plans. The accounts are:

- National economic development account: changes in the economic value of the national output of goods and services
- Environmental quality account: non-monetary effects on ecological, cultural, and aesthetic resources including positive and adverse effects of ecosystem restoration plans
- Regional economic development account: changes in the distribution of regional economic activity (eg. income and employment)
- Other social effects account: plan effects on social aspects such as community impacts, health and safety, displacement, energy conservation, and others

4.3.1.1 Study Objectives

The objective of the Mile Point Feasibility Study is to reduce the effects of the crosscurrents at the confluence of the St. Johns River with the IWW resulting in:

1) Eliminating the navigation restrictions on the ebb tide due to the crosscurrents at Mile Point; and
2) Reducing the effects of the crosscurrents on the Mile Point north shoreline

4.4 PLANNING CONSTRAINTS

Constraints are restrictions that limit the planning process. Plan formulation involves meeting the study objectives while not violating the constraints. Specific study constraints include:

1) Atlantic Dry Dock Corporation received a permit in 2006 to add two new dry docks, one 625 feet long, and the other 853 feet long that will extend from the north shoreline to about 300 feet from the edge of the Federal channel at the intersection of the Intracoastal Waterway and the St. Johns River. Widening in this area would require purchase of a business property.

2) As previously stated, the uplands and wetlands within the project footprint are owned by the U.S. Navy. However, the project footprint also lies within the boundaries of the National Park Service, Timucuan Ecological and Historic Preserve. The preserve contains a mosaic of salt marsh, oyster beds, and other high value environmental habitats. The project would seek avoidance of impacts to the extent practicable. The U.S. Army Corps of Engineers continues to coordinate with the preserve on the Mile Point study as well as other local projects.

3) The City of Jacksonville constructed a public fishing pier from the Mile Point training wall into the St. Johns River and developed the Little Jetties Park on dredged material placed behind the Mile Point training wall. The project will seek to minimize disruption to this pier during project construction.

4) The public has built homes and docks on dredged material along the north shoreline of Mile Point. Project construction will seek to avoid impacting homeowners' access to their property.

5) Atlantic Dry Dock, per permit SAJ-1994-981-JJS, has a minimum setback criterion of 300-foot from the near bottom edge of the Federal channel. This setback restricts widening on the north side of the Mile Point area. The setback criterion is a result of the U.S. Coast Guard Navigation Risk Assessment.[19]

4.5 RELATED ENVIRONMENTAL DOCUMENTS

The proposed action is included in sections of this integrated feasibility report and environmental assessment in order to satisfy the requirements of the National Environmental Policy Act (NEPA). Other NEPA documents prepared by the USACE related to the planned action include the Environmental Impact Statement (EIS) on the Jacksonville Harbor Navigation Channel Deepening (1998); a Jacksonville Harbor Navigation Study, General Re-Evaluation Report and Environmental Assessment (2002); and the Environmental Assessment (2003) entitled Shore Protection Structure and Alternative Placement Site Construction, Mile Point, Jacksonville Harbor, Duval County, Florida. The Jacksonville District is currently preparing the integrated General Re-Evaluation Report and Supplemental Draft Environmental Impact Statement on further deepening of Jacksonville Harbor.

4.6 DECISIONS TO BE MADE

This integrated feasibility report and environmental assessment will provide recommendations for reducing erosion along the Mile Point shoreline and improving navigation at the confluence of the St. Johns River with the Intracoastal Waterway. Various alternatives were evaluated and specific protective measures are suggested to minimize, avoid, or mitigate for adverse effects to local resources.

4.7 AGENCY GOAL OR OBJECTIVE

Planning objectives of the feasibility study involve the use of available information and hydrodynamic modeling to evaluate navigation improvements at the confluence of the Intracoastal Waterway with the St. Johns River over the 50-year period of analysis from 2015-2065. Specific planning objectives for the feasibility phase of the Mile Point navigation study include:

[19] Atlantic Dry Dock Inc., Permit SAJ-1994-981

1) Determine navigation improvements that may reduce or eliminate erosion of the Mile Point shoreline.

2) Reduce and/or relocate the difficult and erosive Intracoastal Waterway crosscurrents so that the St. Johns Bar Pilots and the Captain of the Port (USCG) agree to remove restrictions on deep draft navigation traffic.

3) Identify the plan for Mile Point which most efficiently and safely maximizes net benefits for Jacksonville Harbor existing and future ship traffic while protecting, conserving and/or restoring natural and recreational resources.

4.8 SCOPING AND ISSUES

Timing of the interim measures, such as placement of dredged material from the current Jacksonville Harbor deepening project along the Mile Point shoreline to slow the erosion process while more detailed studies continue, will require timely coordination of the current permitting process. Safety concerns relating to prevention of the next potential catastrophic slope failure (future without-project condition), may require emergency dredging to place material along the Mile Point shoreline. Potential competition for the beach quality dredge material between various interests will require coordination to assure each group that only a portion of the available material is required for placement along the Mile Point shoreline.

4.8.1 Relevant Issues

The following issues were identified as relevant to the current investigations and appropriate for further evaluation: the consideration of threatened and endangered species including the Florida manatee, piping plover, wood stork, sea turtles, shortnose sturgeon, and smalltooth sawfish; Essential Fish Habitat (including salt marsh); other fish and wildlife resources; cultural resources; water quality; air quality; hazardous, toxic, and radioactive waste; aesthetics; recreation; noise; socio-economics (including navigation).

4.8.2 Impact Measurement

See the detailed impact assessments in the integrated environmental assessment regarding specific alternatives section.

4.8.3 Issues Eliminated from Further Analysis

Impacts to housing and population dynamics were eliminated from further analysis. The proposed action of this project is expected to have little or no impact on these issues.

4.9 PERMITS, LICENSES, AND ENTITLEMENTS

4.9.1 Water Quality Certification

This project would be performed in compliance with State of Florida water quality standards. The Florida State Clearinghouse stated by letter dated September 9, 2011 that based on the information contained in the draft Integrated Feasibility Study and Environmental Assessment, the project appears to be consistent with the Florida Coastal Management Program (see Appendix E: Pertinent Correspondence). A final consistency determination would be performed concurrently with the issuance of the state water quality certification (FDEP Environmental Resource Permit).

4.9.2 Endangered Species Act- Section 7 Coordination

In accordance with Section 7 of the Endangered Species Act, the USACE has completed informal consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (refer to Section 7.2 for additional information on effects determinations).

5.0 FORMULATION AND EVALUATION OF ALTERNATIVE PLANS*

Preliminary plans were formulated by combining management measures. Each plan was formulated in consideration of the following 4 criteria described in the Principles and Guidelines (P&G):

- Completeness: Extent to which the plan provides and accounts for all necessary investments or actions to ensure realization of the planning objectives
- Effectiveness: Extent to which the plan contributes to achieving the planning objectives
- Efficiency: Extent to which the plan is the most cost-effective means of addressing the specified problems and realizing the specified opportunities, consistent with protecting the nation's environment
- Acceptability: Workability and viability of the alternative plan with respect to acceptance by Federal and non-federal entities and the public, and compatibility with existing laws, regulations, and public policies

5.1 PLAN FORMULATION RATIONALE

Step 3 of the Planning Process as described in ER 1105-2-100 is "Formulation of Alternative Plans."

1. Alternative plans are formulated to identify ways of achieving planning objectives within the project constraints, in order to solve the problems and realize the opportunities listed in Step 1 of the Planning Process which is to "Specify Problems and Opportunities."
2. Identify structural and non-structural management measures. Combine management measures to form alternative plans.
3. Planners will keep focus on complete plan(s) while doing individual tasks, to ensure their plans address the problems of the planning area.
4. Section 904 of the WRDA (Water Resources Development Act) of 1986 requires the U.S. Army Corps of Engineers to address the following in the formulation and evaluation of alternative plans:
    a. Enhancing national economic development (NED)-including benefits to particular regions that are not transfers from other regions.
    b. Protecting and restoring the quality of the total environment
    c. The well-being of the people of the United States
    d. Preservation of cultural as well as historical values
5. Non-structural measures must be considered in the plan formulation process as means to address problems and opportunities.
6. Costs of mitigation, if any, will be included in the final cost-benefit analysis.

In accordance with this policy, alternative plans were formulated for the Jacksonville Mile Point study and evaluated on the basis of their potential to minimize the impacts of the flows out of the IWW during ebb tide, to both navigation and erosion on the Mile Point shoreline.

5.2 MANAGEMENT MEASURES

1) A management measure is a feature or activity that can be implemented at a specific geographic site (**Figure 13**) to address one or more planning objectives. Management measures are used to create plans and can be categorized as non-structural or structural. The following measures were identified to reduce the effects of the crosscurrents on the Mile Point shoreline and restrictions to navigation for vessels transiting Jacksonville Harbor.

2) The following non-structural management measures were identified to reduce the effects of the crosscurrents on navigation through the Mile Point area:

a) Additional Tugs: Vessels to use more tugs to transit through the Mile Point area
b) Light Loading: Light load larger vessels since vessels are restricted by transit draft

3) The following structural management measures were identified to meet the objectives (as defined in Section 4.3) of reducing the effects of the crosscurrents on the erosion of the Mile Point shoreline.

a) Structural Erosion Protection: Build a bulkhead, groins, or beach fill along the Mile Point shoreline on the north side of the channel

4) The following structural management measures were identified to meet the objectives to eliminate the navigation restrictions on the ebb tide due to the crosscurrents at Mile Point and to reduce the effects of the crosscurrents on the Mile Point shoreline.

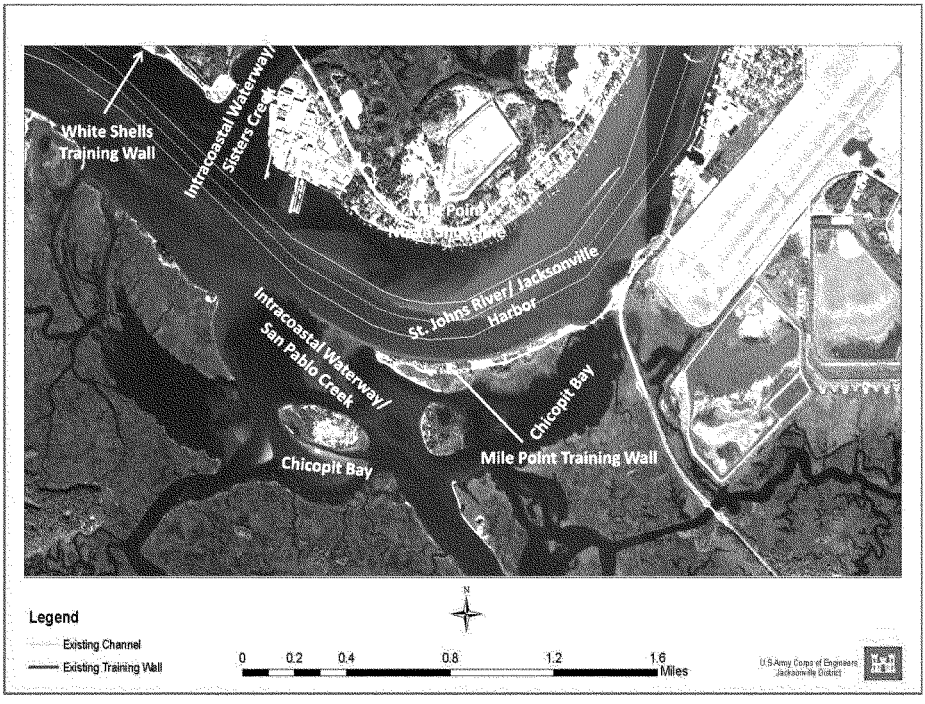
a) San Pablo Creek IWW Submerged Weir: Construct a weir across the Pablo Creek section of the IWW (and the east and west ends of Chicopit Bay if modeling indicates flows diverted in those directions).
b) Rebuild Mile Point Training Wall: Rebuild the Mile Point training wall to its original design length and height of 5,990 feet and 6 feet above MLW.
c) 150-Foot Training Wall Reach Channel Widening: Widen the south side of Training Wall Reach Channel by 150 feet.
d) Eastern Chicopit Bay Diversion: Partially remove Jetty/Eastern Portion of the Mile Point training wall (and park) by opening the east end of Chicopit Bay (100 feet to 500 feet) and cutting a 5500-foot bypass channel.
e) Relocate (Reconfigure) the Mile Point Training Wall: Relocate about one-half of the Mile Point training wall to the southwest, to widen the

confluence of Pablo Creek (IWW) with the St. Johns River.

f) Rebuild White Shells Training Wall: Rebuild the White Shells training wall to its original design length and height of approximately +1.0 MLW through station 67+20 (6,720 feet) .[20]

g) Short Cut Widener between South Buoys G25-G27: Widen the east end of the Short Cut Turn - about 150 feet to the south between buoys G25-G27.

FIGURE 13: JACKSONVILLE MILE POINT GEOGRAPHICAL AREA



5.3 ISSUES AND BASIS FOR CHOICE

Management measures were evaluated to determine the degree in which they reduce the impacts of the crosscurrents out of the IWW during the ebb tide. Measures were evaluated on their ability to effectively meet the 4 criteria in the P&G.

Changes in the current velocities were tested for each of the alternatives using a two-dimensional hydrodynamic model. The modeling performed was to provide

[20] 1955 survey for rehabilitation of the training wall.

recommendations for reducing or relocating the difficult crosscurrents during the ebb flow at the confluence of the St. Johns River with the IWW. The detailed results of the hydrodynamic modeling can be found in Attachment A of the Engineering Appendix, Hydrodynamic Model Report.

5.4 PRELIMINARY ARRAY OF ALTERNATIVES

Alternative plans are made up of structural and/or non-structural measures that function together to address one or more of the study objectives. Alternative plans to prevent the erosion of the Mile Point shoreline and reduce the ebb tide navigation restrictions included a combination of measures suggested by the Heckscher Drive Community Club (HDCC) homeowners, the study team, and the St. Johns Bar Pilots.

Alternatives were formed to address the ebb tide navigation restrictions as well as the erosion problems at Mile Point. The following are the list of preliminary alternatives that were evaluated in detail.

(1) No action (required by NEPA).

(2) Construction of a stone revetment or sheet pile bulkhead along a shoreline length of about 3,300 feet for shoreline protection of Mile Point.

(3) Construction of a Groin Field consisting of groins extending from the Mile Point north shoreline toward the Federal channel. This would include 6 groins about 150 feet long and 15 feet wide at the top placed about 420 feet apart with an elevation above high water at all times.

(4) Submerged breakwater built away (out in the river) and parallel to the Mile Point north shoreline. This would include a breakwater with a top elevation of about 8 feet below the water surface at mean low water and a total length about 3,300 feet.

(5) Rebuilding of Mile Point (Little Jetties) training wall to its original design length (without-project condition) and monitor pre- and post-construction conditions with bank-to-bank hydrographic and Acoustic Doppler Current Profiler (ADCP) surveys. Provide effective monitoring over a 10-year period.

(6) Rebuilding of White Shells Training Wall opposite Buck Island along the north shoreline (without-project condition) and monitor pre- and post-construction conditions with bank-to-bank hydrographic and ADCP surveys. Provide effective monitoring over a 10-year period.

(7) Construction of a weir across the Intracoastal Waterway (similar to the elevation -12.0' MSL weir shown in the Jacksonville Harbor Mill Cove, Florida, D.O. File No. 1-34,662) from the Mile Point training wall to Great Marsh Island.

(8) Opening of the landward end of the Mile Point training wall (previous hydrodynamic model testing involved two different opening widths, one included an opening 6 feet deep by 150 feet wide and the other consisted of an opening 6 feet deep by 350 feet wide) to restore flow back through Chicopit Bay.

(9) Use of the Mile Point shoreline (total length about 5,000 feet), up to ordinary mean high water, as a disposal area for beach quality dredged material from existing Jacksonville Harbor Federal channel cuts 3 - 7.

This list of preliminary alternatives was expanded and combined to develop the matrix in **Table 5**. The alternatives were formed to address the problems and provide benefits that are listed below.

> Problems Addressed: The primary problems the alternatives aim to address are erosion of the Mile Point shoreline and unsafe inbound transit through Mile Point during the ebb tide.
>
> Benefit Description: Each alternative aims to reduce erosion along the Mile Point shoreline and eliminate the delay associated with the Bar Pilots' entry restriction.

Alternatives were grouped into 5 categories as follows:

- Alternative Plan 1: These alternatives were identified to reduce the effects of the crosscurrents at the confluence of the St. Johns River and IWW, and the erosion of the Mile Point shoreline.
- Alternative Plan 2: This alternative was identified to eliminate or alleviate the navigation restrictions on the ebb tide due to the crosscurrents at Mile Point.
- Alternative Plan 3: These alternatives were identified to eliminate or alleviate the navigation restrictions on the ebb tide due to the crosscurrents at Mile Point and reduce the effects of the crosscurrents on the erosion of the Mile Point shoreline.
- Alternative Plan 4: This alternative was identified to eliminate or alleviate the navigation restrictions on the ebb tide due to the crosscurrents at Mile Point and also to provide an opportunity to reduce the need for one-way traffic in this area.
- Alternative Plan 5: These alternatives were identified to eliminate or alleviate the navigation restrictions on the ebb tide due to the crosscurrents at Mile Point and reduce the effects of the crosscurrents on the erosion of the Mile Point shoreline. These alternatives were also evaluated on the opportunity to reduce the need for one-way traffic in this area.

TABLE 5: JACKSONVILLE HARBOR (MILE POINT) – STRUCTURAL ALTERNATIVE PLANS

Jacksonville Harbor (Mile Point) - Alternative Plans			
Alternative Plan	**Objective Addressed**	**Designation**	**Management Measure(s)**
Alternative Plan 1	Reduce Effects of the Crosscurrents at Mile Point on the Ebb Tide on the Erosion of the Mile Point Shoreline	1A	North Shoreline Groin Field
		1B	San Pablo Creek IWW Submerged Weir
		1C	Rebuild Mile Point Training Wall (Little Jetties)
		1D	Rebuilding White Shells Training wall
		1E	North Shoreline stone revetment or sheet pile bulkhead
		1F	Removal of waterward portion of Training Wall
Alternative Plan 2	Reduce Effects of the Crosscurrents on the Ebb Tide at Mile Point in order to Eliminate the Pilots' Navigation Restrictions	2	150-Foot Training Wall Reach Widening
Alternative Plan 3	Reduce Effects of the Crosscurrents on the Ebb Tide at Mile Point in order to Eliminate the Pilots' Navigation Restrictions and Reduce the Effects of the Crosscurrents on the Erosion of the Mile Point Shoreline	3A	Eastern Chicopit Bay Diversion
		3B	Relocate Mile Point Training Wall
		3C	North Shoreline Groin Field AND 150 Foot Training Wall Reach Widening
		3D	San Pablo Creek IWW Submerged Weir AND 150-Foot Training Wall Reach Widening
		3E	Rebuild Mile Point Training Wall (Little Jetties) AND 150-Foot Training Wall Reach Widening
		3F	Rebuild Mile Point Training Wall (Little Jetties) AND Rebuild White Shells Training Wall
Alternative Plan 4	Reduce Effects of the Crosscurrents on the Ebb Tide at Mile Point in order to Eliminate the Pilots' Navigation Restrictions	4	150-Foot Training Wall Reach Widening AND Short Cut Turn Widener
Alternative Plan 5	Reduce Effects of the Crosscurrents on the Ebb Tide at Mile Point in order to Eliminate the Pilots' Navigation Restrictions and Reduce the Effects of the Crosscurrents on the Erosion of the Mile Point Shoreline	5A	North Shoreline Groin Field AND 150-Foot Training Wall Reach Widening AND Short Cut Turn Widener
		5B	San Pablo Creek IWW Submerged Weir AND 150-Foot Training Wall Reach Widening AND Short Cut Turn Widener
		5C	Rebuild Mile Point Training Wall (Little Jetties) AND 150-Foot Training Wall Reach Widening AND Short Cut Turn Widener

The above matrix of alternatives includes the designation of the previously discussed management measures. The alternatives were formed by combining and expanding on the management measures. The non-structural alternatives that were measured include additional tug assists and using the tide to transit the harbor for deeper draft vessels. The no action alternative was also considered.

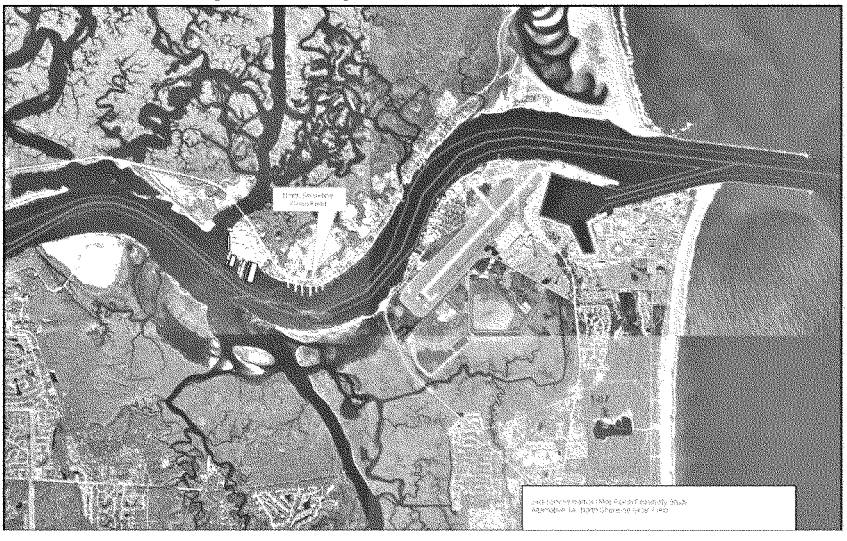
5.4.1 Hydrodynamic Modeling of Alternatives

Hydrodynamic modeling allowed for preliminary testing of several of the above alternatives. An available hydrodynamic model set up originally for the previous Jacksonville Harbor Feasibility Study provided insight into the potential for several of the alternatives to deflect the erosive flows away from the Mile Point shoreline. Alternatives were evaluated on their ability to significantly reduce the

crosscurrents in the navigation channel. There is a direct correlation between the crosscurrents out of the IWW and the navigation restrictions enacted. Alternatives that provided a significant reduction in crosscurrents were carried forward and those that did not provide a significant reduction were eliminated. The models that were used are the approved USACE models RMA2 and RMA10. Visits by USACE, Jacksonville District representatives from the environmental studies and water quality sections to the study area enabled an evaluation of environmental impacts and benefits for the alternatives under consideration. Results of the environmental evaluations can be seen in Sections 5.5 and 7.0.

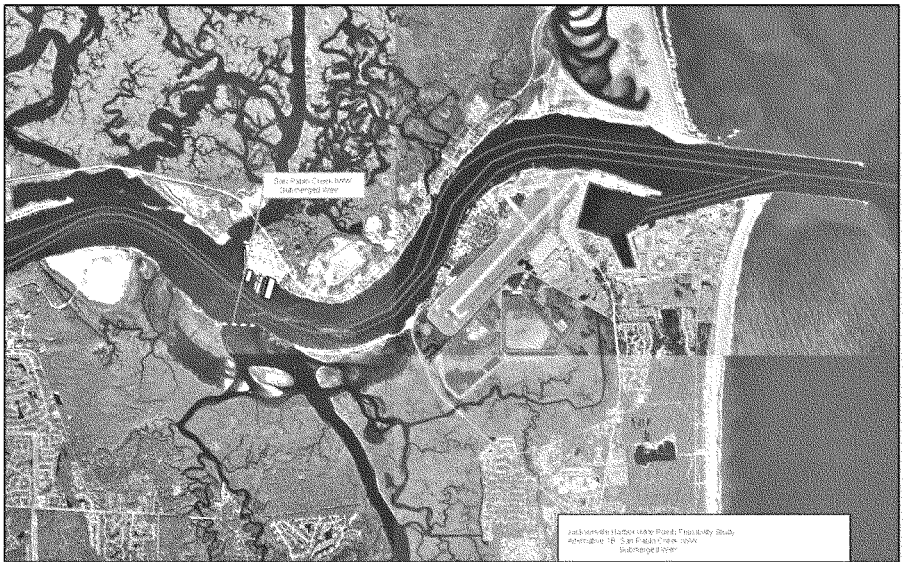
(1) Alternative 1A. A groin field consisting of groins extending from Mile Point north shoreline towards the Federal channel. Six groins about 150 feet long and 15 feet wide at the top, spaced about 420 feet apart were introduced in the hydrodynamic model. The groin field was effective at reducing the currents adjacent to the north Mile Point shoreline, but showed no significant reduction of crosscurrents within the navigation channel; therefore, it would not allow for the navigation restrictions to be lifted.

FIGURE 14: NORTH SHORELINE GROIN FIELD



(2) Alternative 1B. A submerged weir with a crest elevation of 14.0 feet, MLLW to be located to connect the tip of the Mile Point training wall with Great Marsh Island was evaluated to reduce the crosscurrents from the outflow of Pablo Creek during the ebb tide. Modeling showed no significant effects on crosscurrents within the navigation channel. The proposed elevation was the highest possible without impairing navigation, but still not high enough to limit the tidal flow, and therefore this alternative would not allow navigation restrictions to be lifted nor help with the erosion problems at Mile Point.

FIGURE 15: SAN PABLO CREEK IWW SUBMERGED WEIR



(3) Alternative 1C. Rebuilding the existing Mile Point Training Wall was evaluated. The existing training wall has subsided and now has several sections permanently under water. Modeling of rebuilding the training wall to its original size resulted in no significant impacts to the crosscurrents. Flow over the existing Mile Point Training Wall was measured and calculated to be less than five percent of the maximum ebb flow measured out of Pablo Creek.

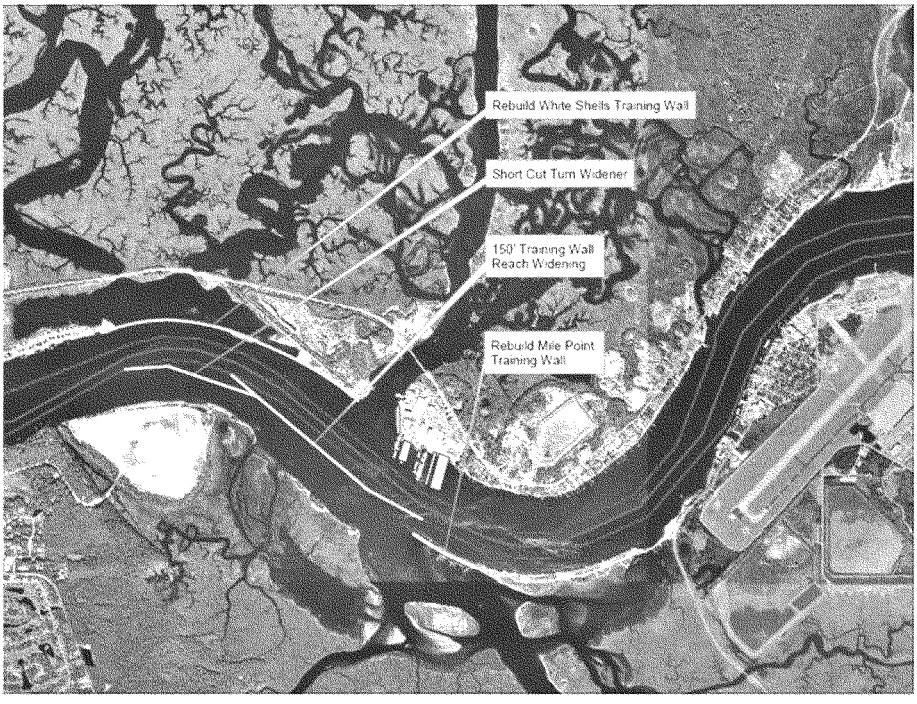
(4) Alternative 1D. Rebuilding the White Shells Training Wall, which is located on the opposite side of Buck Island along the north shoreline, to its original design dimensions was evaluated to measure the affects of the crosscurrents if the White Shells wall was rebuilt. The wall as it exists today is in a deteriorated state and is often partially submerged. The crosscurrents have a direct relation to the navigation restrictions enacted by the St. Johns Bar Pilots. Results of the modeling indicated that no significant changes to the currents within the navigation channel would occur after rebuilding the White Shells Training Wall.

(5) Alternative 1E. Shoreline protection for Mile Point such as a stone revetment or sheet pile bulkhead along a shoreline length of about 3,300 feet requiring protection does not provide for a reduction in crosscurrents that impact navigation. The use of a steel sheet pile wall with inflow windows and augmented with a filter stone is recommended for use in conjunction with the relocation of the Mile Point training wall alternative. Specific design criteria can be found in the Value Engineering (VE) Report in Engineering Appendix A.

(6) Alternative 1F. Removal of the waterward portion of the Mile Point Training Wall, under the Operations and Maintenance (O&M) Program to -6feet MLLW and -12feet MLLW was tested using a three-dimensional, finite-element hydrodynamic model (RMA10). The results of modeling this alternative were that the crosscurrents on the ebb flow were not significantly reduced.

(7) Alternative 2. A 150-foot training wall reach channel widening alternative was evaluated to reduce the intensity of the currents and add more space to be incorporated to the navigation channel. The results of modeling this alternative showed insignificant changes to the magnitude of the currents. A widening alternative was considered further (at the request of the St. Johns Bar Pilots) that would allow the Bar Pilots to lift the navigation restrictions for vessels with a deadweight (DWT) to Horsepower ratio of .75 or more (mainly container vessels). This alternative would not alleviate the erosion problems at Mile Point.

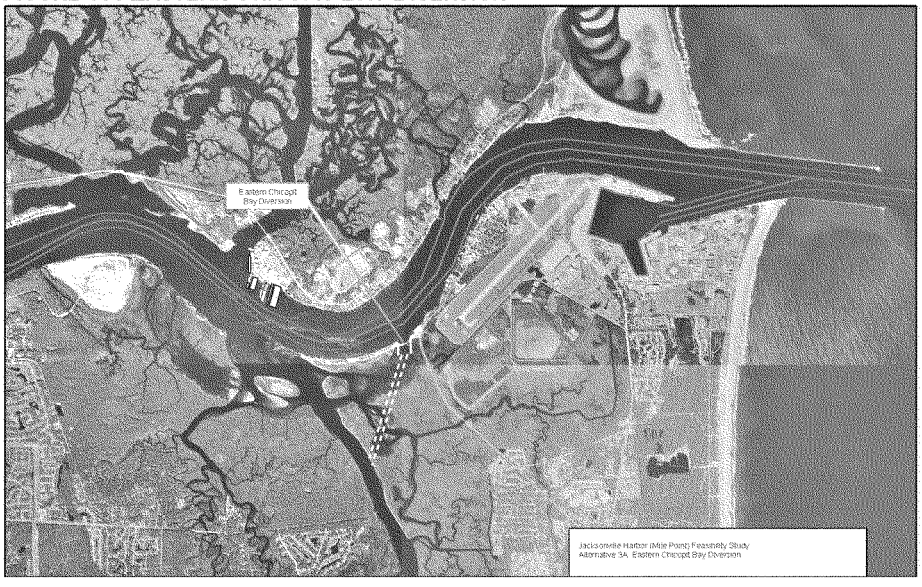
FIGURE 16: REBUILD TRAINING WALLS AND WIDENING ALTERNATIVES



(8) Alternative 3A. An Eastern Chicopit Bay Diversion alternative was proposed to open a canal at the landward end of the Mile Point training wall. The purpose of the diversion is to reduce the magnitude of the existing crosscurrents by reducing the amount of ebb flow at that particular location. The results of modeling this alternative were that the ebb flow currents were reduced by approximately fifty percent, however, the crosscurrents inside the navigation

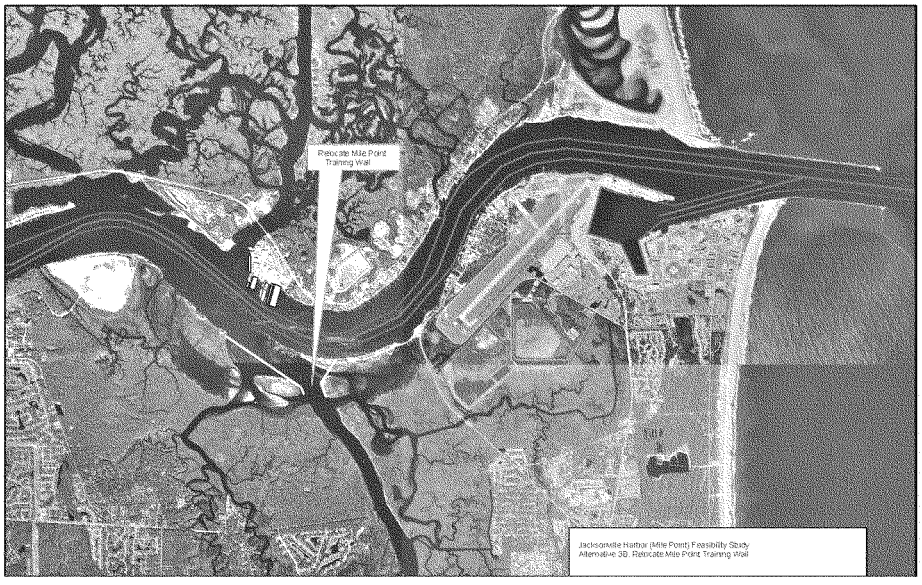
channel were only reduced by twenty-five percent. The angle of the crosscurrents did not change significantly. There are environmental concerns associated with constructing a large diversion canal through the landward end of the training wall related to destabilization of the mosaic of salt marsh, mud flats, and slack water areas present in this location. There is also an additional cost of having to build a bridge to maintain access to the existing park. Due to the adverse effects of this alternative, and that it does not significantly reduce the crosscurrents, this alternative was not carried further.

FIGURE 17: EASTERN CHICOPIT BAY DIVERSION



(9) Alternative 3B. Relocating the Mile Point training wall includes removal of the western 3,110 feet of the existing Mile Point training wall and construction of a new western leg and a relocated eastern leg training wall of approximately 4,250 feet and 2,050 feet, respectively. The purpose of the training wall relocation is to redistribute the ebb flow to intersect the main navigation channel further east where the currents will be parallel to the channel. Modeling of this alternative demonstrated a significant change in the distribution and direction of the currents within the navigation channel. Crosscurrents were completely eliminated inside the navigation channel during maximum ebb. The ebb currents along the new configuration followed a trajectory parallel to the navigation channel. Flood currents did not appear to be negatively impacted by the new training wall configuration.

FIGURE 18: RELOCATE MILE POINT TRAINING WALL



(10) Alternative 4. A short cut turn widener plus a 150-foot training wall reach widening was evaluated. The short cut turn is located just upstream from the training wall reach. This alternative extends the 150-foot widener north into the turn. The results indicated this alternative would not provide for significant changes to the magnitude of the currents at Mile Point.

5.4.2 Alternatives Eliminated from Detailed Evaluation

Alternatives were evaluated using the hydrodynamic model, USACE approved models RMA2 and RMA10, as is described in the above section. This model measured the affects of the alternative plans on the crosscurrents during the ebb and flood tides. Alternatives were eliminated that did not decrease these crosscurrents by the amount needed to reduce the affects of the currents on the adjacent shoreline or vessel traffic. **Table 6** shows the alternatives that were eliminated during the evaluation.

The numerical model RMA2 was chosen for this study for several reasons. First, the finite element method permits the modeler to develop an unstructured mesh to define the channel geometry. The lower St. Johns River has many tributaries and secondary channels that are difficult to discretize in the sense of a structured, index based grid. The finite element method uses freely connected three-sided and four-sided elements that are knitted together by means of an element connection table, thus permitting the modeler more flexibility to resolve important geometric features that may be required to accurately compute the flow

field. Second, a vertically averaged description of the hydrodynamics was sufficient to answer the questions that were posed concerning the relative impacts of the engineering alternatives on cross currents in the navigation channel at Mile Point. Third, RMA2 has been successfully applied to a variety of estuarine and riverine modeling studies conducted by the USACE.

Later a 3-D model was developed to validate the only alternative found to be effective at reducing cross currents, the relocation of the training wall at Mile Point. The 3-D numerical hydrodynamic model used in this project is known as RMA10- WES. The results obtained from the 3-D model confirmed the effectiveness of relocating the training wall at Mile Point. RMA2 and RMA0 are both classified as "Corps of Engineers Preferred." All hydrodynamic modeling was conducted by staff within the Hydrologic Modeling Section, Water Resources Engineering Branch, Engineering Division of the USACE, Jacksonville District.

The non-structural alternatives were also eliminated. The non-structural alternative of light-loading did not allow for the vessels that are currently subject to the navigation restrictions to transit without the restriction or reduce the erosion of the Mile Point shoreline. The no action alternative is not recommended as it does not provide any benefits or address any of the problems discussed in this study.

The St. Johns Bar Pilots determined the use of bow/stern thrusters or available tug assistance for ships restricted by the crosscurrents at Mile Point during the maximum ebb tide flows as not effective or practical due to the vessel transit speed required to overcome the crosscurrents under those conditions. For a container ship to attempt to transit the Mile Point area of Jacksonville Harbor during maximum ebb tide, the container ship must typically transit at speeds of about 7-11 knots which equates to an over-the-ground speed of about 4-7 knots with a 3-4 knot opposing ebb flow. The max ebb tide involves flows from the Intracoastal Waterway (48,000 cubic feet per second) south of the Mile Point Training Wall that flow around the west end of the training wall almost perpendicular across the Federal channel, equivalent to almost 25 percent of the entire flow in the St. Johns River (200,000 cubic feet per second). Tugs in Jacksonville Harbor do not have the capability to move through the water with the container ship under those ebb tide flows while applying sufficient force or push to overcome those types of forces. The non-structural alternative which evaluated adding additional tugs was eliminated based on this assessment.

The O&M Alternative (1F) evaluated removal of the waterward portion of the Mile Point Training Wall. This alternative was eliminated due to results of RMA10 modeling. Modeling showed only a slight benefit in the direction and magnitude of the ebb tide velocity vector, not enough to lift the existing navigation restrictions at Mile Point. The modeling also showed an increase in the areal extent of the crosscurrents which would have potential negative impacts to navigation. Other impacts of this alternative included a potential increase of

current velocities on the north shoreline and Great Marsh Island which allows for potential shoreline erosion. There is an archeological site at Great Marsh Island which would be subject to erosion risk under this alternative.

TABLE 6: ALTERNATIVE PLANS ELIMINATED THROUGHOUT THE STUDY

Jacksonville Harbor (Mile Point) - Alternative Plans Eliminated throughout the Study				
Alternative Plan	**Objective Addressed**	**Designation**	**Management Measure(s)**	**Basis for Elimination**
Alternative Plan 1	Reduce Effects of the Crosscurrents on the Erosion of the Mile Point Shoreline	1A	North Shoreline Groin Field	Reduced crosscurrents at adjacent shoreline but not in the navigation channel.
		1B	San Pablo Creek IWW Submerged Weir	No Sig impacts on crosscurrents in navigation channel.
		1C	Rebuild Mile Point Training Wall (Little Jetties)	No Sig impacts on crosscurrents in navigation channel.[1]
		1D	Rebuilding White Shells Training wall	No Sig impacts on crosscurrents in navigation channel.
		1E	North Shoreline stone revetment or sheet pile bulkhead	No Sig impacts on crosscurrents in navigation channel.
		1F	Removal of waterward portion of Training Wall	Insignificant changes to magnitude and direction of crosscurrents.
Alternative Plan 3	Reduce Effects of the Crosscurrents in order to Eliminate the Pilots' Navigation Restrictions and Erosion of the Mile Point Shoreline	3A	Eastern Chicopit Bay Diversion	Reduced ebb flow by 50% but magnitude of crosscurrents in the channel by less than 25%.[2]
		3C	North Shoreline Groin Field AND 150-Foot Training Wall Reach Widening	Insignificant changes to magnitude and direction of crosscurrents.
		3D	San Pablo Creek IWW Submerged Weir AND 150-Foot Training Wall Reach Widening	Insignificant changes to magnitude and direction of crosscurrents.
		3E	Rebuild Mile Point Training Wall (Little Jetties) AND 150-Foot Training Wall Reach Widening	Insignificant changes to magnitude and direction of crosscurrents.
		3F	Rebuild Mile Point Training Wall (Little Jetties) AND Rebuild White Shells Training Wall	Insignificant changes to magnitude and direction of crosscurrents.
Alternative Plan 4	Reduce Effects of the Crosscurrents in order to Eliminate the Pilots' Navigation Restrictions	4	150-Foot Training Wall Reach Widening AND Short Cut Turn Widener	Insignificant changes to magnitude and direction of crosscurrents.
Alternative Plan 5	Reduce Effects of the Crosscurrents in order to Eliminate the Pilots' Navigation Restrictions and Erosion of the Mile Point Shoreline	5A	North Shoreline Groin Field AND 150-Foot Training Wall Reach Widening AND Short Cut Turn Widener	Insignificant changes to magnitude and direction of crosscurrents.
		5B	San Pablo Creek IWW Submerged Weir AND 150-Foot Training Wall Reach Widening AND Short Cut Turn Widener	Insignificant changes to magnitude and direction of crosscurrents.
		5C	Rebuild Mile Point Training Wall (Little Jetties) AND 150-Foot Training Wall Reach Widening AND Short Cut Turn Widener	Insignificant changes to magnitude and direction of crosscurrents.
1. The ADCP Survey measured a maximum flow of approximately 1,500 cfs over the training wall, less than five percent of the maximum ebb flow measured out of Pablo Creek.				
2. The angle of the crosscurrents did not change significantly. This is an environmentally sensitive area.				

5.4.3 Alternatives Carried Forward

The results of the hydrodynamic modeling of the alternatives showed that only relocation of the Mile Point training wall demonstrated significant change in the distribution and direction of the currents within the navigation channel. Relocation of the Mile Point training wall is the only alternative that met all of the study objectives. It is anticipated that the new realignment of the Mile Point training wall would produce flows coming out of the IWW from the south that are more aligned with the Federal channel. This is expected to provide a drop in water velocity in the areas north of the channel at Mile Point and slow the progression of the erosion that has occurred at the north bank of Mile Point. Ship simulation was run to test the relocation of the Mile Point training wall (Alternative 3B). The results of this simulation were considered favorable by the majority of

the St. Johns Bar Pilots toward reducing or eliminating the restrictions associated with the training wall crosscurrents.[21]

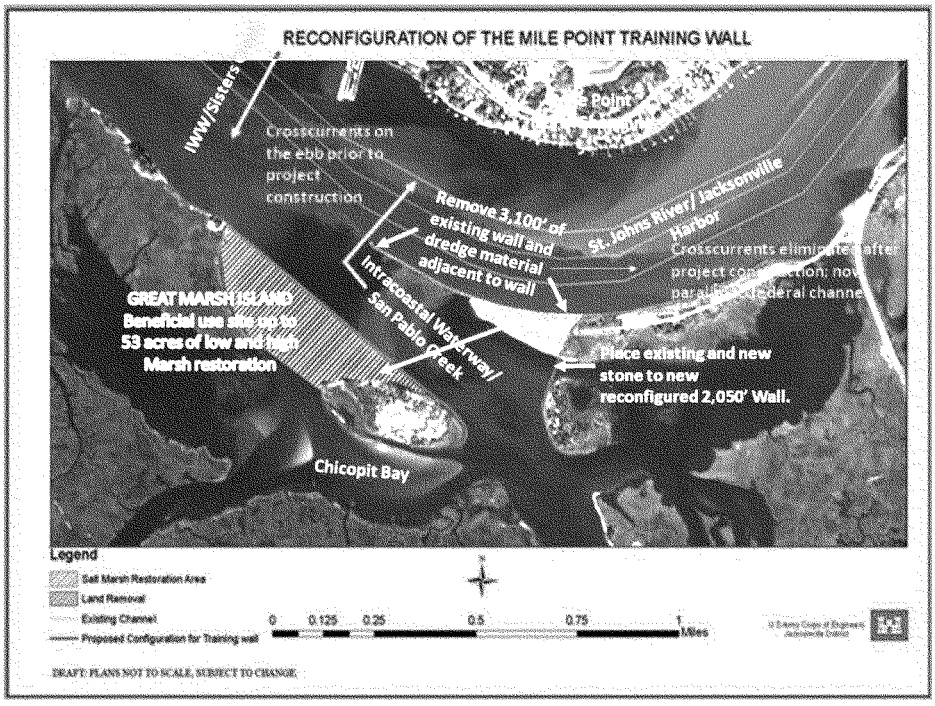
A widening alternative was carried forward for further investigation at the request of the St. Johns Bar Pilots. A second ship simulation was run September 14-17, 2009 to test the widening only alternative, as well as the relocation of the Mile Point training wall alternative. The pilots, as observed by the USACE, Engineer Research and Development Center (ERDC) and Jacksonville District personnel, attempted to use the wideners to make the turn at Mile Point. The pilots, after using the wideners in the simulation, stated that they felt the wideners would not reduce tidal restrictions for Mile Point. Based on the simulator runs, the pilots felt that relocation of the Mile Point training wall could reduce or eliminate tidal restrictions for Mile Point. These alternatives are discussed further below:

1. Alternative VE-3B: The original relocation of the Mile Point Training wall (Alternative 3B) was further refined following an extensive Value Engineering (VE) study (**Figure 19**). This alternative was modified to incorporate the beneficial use of dredged material by creating a salt marsh mitigation area that restores wetlands lost on Great Marsh Island as a result of erosion. The original plan 3B used the Buck Island Disposal area for placement of dredged material; however, the use of Great Marsh Island is a lower cost disposal option due to a shorter transit distance. Relocation of the Mile Point training wall and the Great Marsh Island restoration improves navigation for the maximum ebb, maximum ebb from Pablo Creek, and maximum flood, and facilitates potential reductions in the erosion along the Mile Point shoreline. There are incidental environmental benefits with this alternative. Restoring Great Marsh Island is both the least cost alternative for the disposal of dredged material and also provides additional acres of restoration above the required mitigation to offset the approximate 8.15 acres impacted by the relocation. This alternative met both the objectives of reducing the erosive effects of the crosscurrents on the Mile Point shoreline, and reducing or eliminating the restrictions to navigation. The St. Johns Bar Pilots agreed that this alternative would allow the tidal restriction to be lifted or greatly reduced.[22]

> Note: This alternative is not complete due to potential shoaling problems at Chicopit Bay. Thus it was not carried further in the final comparison of alternatives. By creating a means of disposal by restoring Great Marsh Island, the natural tidal outlet of Chicopit Bay is filled, reducing circulation and increasing shoaling in Chicopit Bay.

[21] The ship simulation report is located in Appendix A (Engineering Appendix) Attachment C.
[22] Letter in Appendix E (Pertinent Correspondence): St. Johns Bar Pilot Association Letter, May 15, 2008.

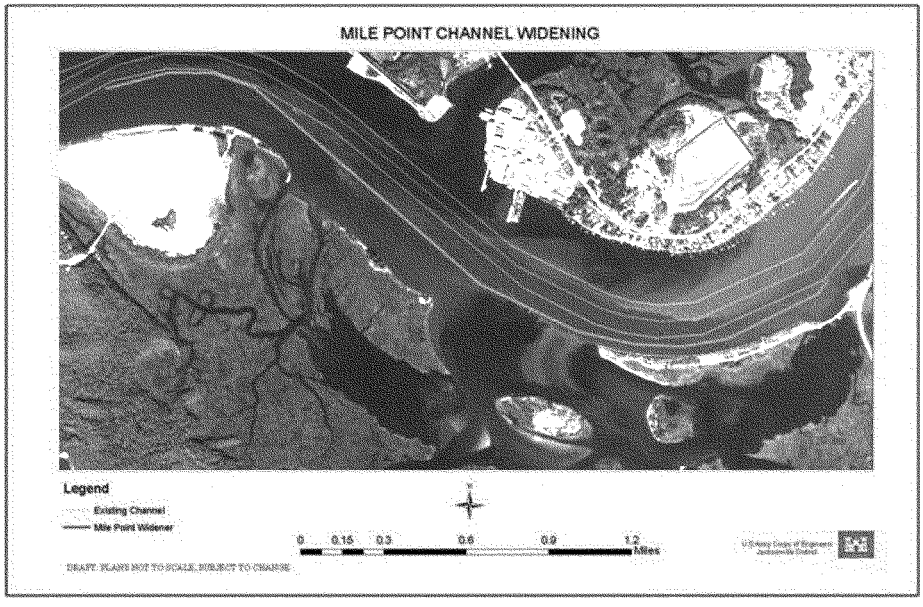
FIGURE 19: ALTERNATIVE VE-3B



2. Widening Alternative 2: A widening alternative that would allow for a reduction in the delay associated with the Bar Pilots restrictions for vessels with a deadweight (DWT) to Horsepower ratio of .75 or greater (**Figure 20**).

This alternative will not reduce the effects of the crosscurrents on the adjacent shoreline and does not offer a reduction in the navigation delay, as was determined by the 2009 ship simulation. Thus, although it was evaluated in the final array of alternatives, it was not carried further in the final comparison of alternatives. The widening alternative would need to be coupled with adding groin fields, which are detailed in the previous section, to protect against erosion on the Mile Point shoreline to the north. This would still not mitigate for shoaling on the southern side of the Mile Point area, in the Chicopit Bay area. Without a reduction in navigation delays, there is little benefit for this alternative and it is eliminated.

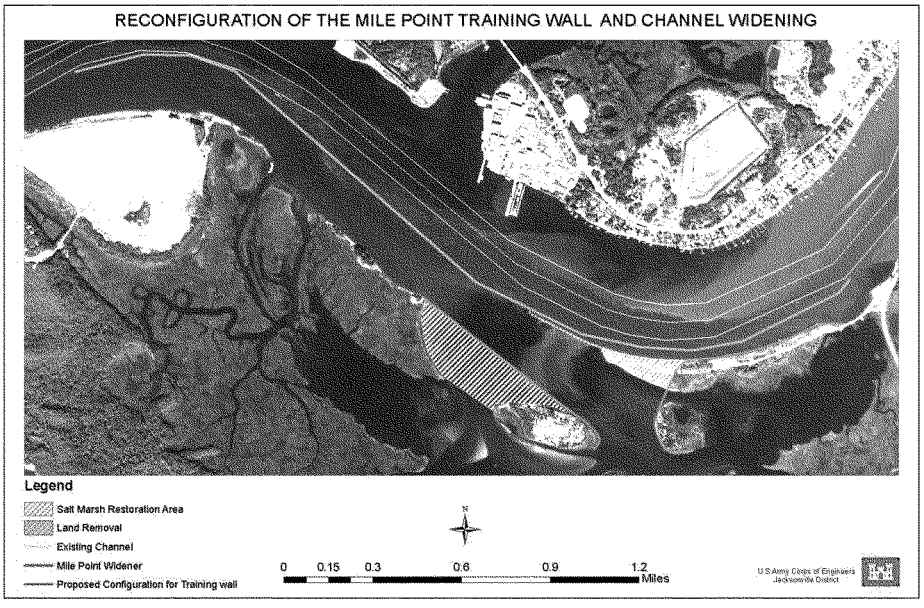
FIGURE 20: WIDENING ALTERNATIVE



3. Alternative VE-3B plus Widening: A combination of the relocation of the Mile Point training wall alternative VE-3B and the widening alternative would improve navigation for vessels transiting under all tidal conditions (**Figure 21**).

This Alternative is not complete due to potential shoaling problems at Chicopit Bay; however, this alternative was modified to include a Flow Improvement Channel (FIC) at Chicopit Bay and was carried to the final comparison of alternatives. The FIC would be constructed to offset the flow reduction caused by the restoration of Great Marsh Island (see section 7.6.2 for more detail).

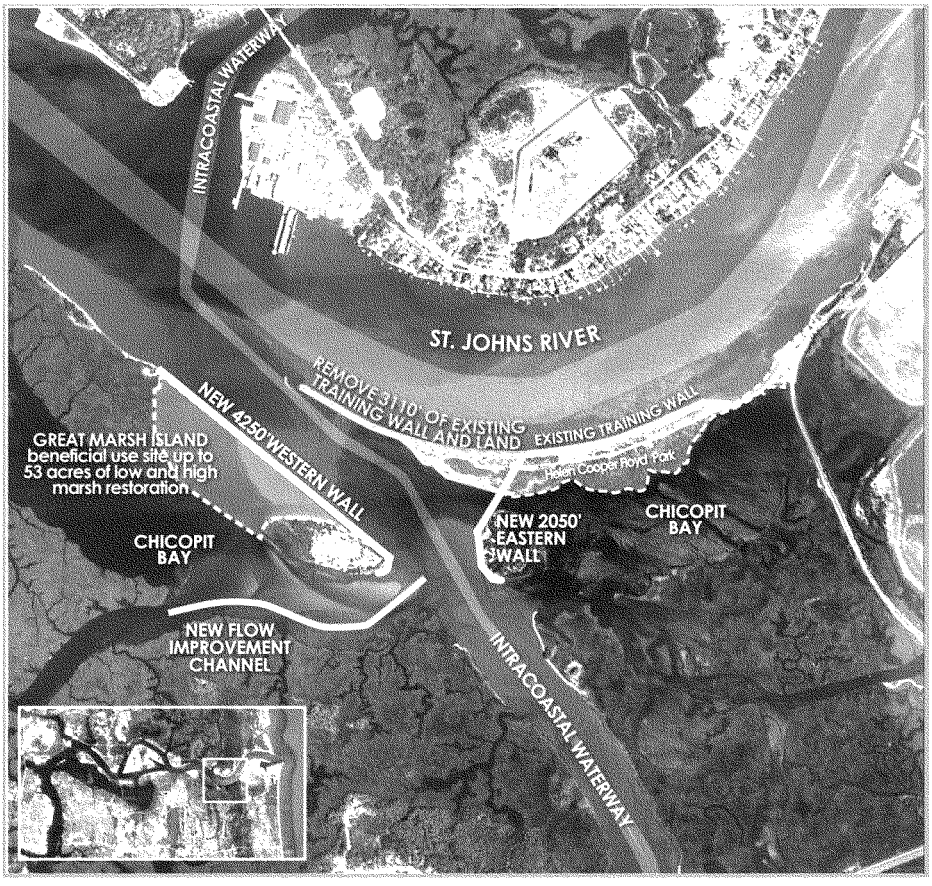
FIGURE 21: ALTERNATIVE VE-3B PLUS WIDENING



4. Alternative VE-3B plus Flow Improvement Channel: Relocation of the Mile Point training wall alternative VE-3B in conjunction with a Flow Improvement Channel (FIC) in Chicopit Bay would help improve navigation in the Jacksonville Harbor by reducing navigation restrictions, in addition to improving the water quality and environmental stability of the project area by increasing flushing capacities and channel flow dynamics (**Figure 22**). It also reduces the impacts of the currents along the Mile Point shoreline.

This alternative would provide for restoration of Great Marsh Island to be used as the least cost disposal for the project. Restoration of this area provides an opportunity to address other impacts caused by the physical decay of the ecosystem such as shoaling in Chicopit Bay. Without the project, Great Marsh Island will continue to erode. The 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 continue to degrade within Chicopit Bay and upstream watersheds below the head of tide. This would occur because the restoration would close off the eroded portion of Great Marsh Island which now flushes the bay. The FIC is proposed to improve the flushing of upstream loadings such as sediment, bacteria, and nutrients through the bay, as well as provide deeper water for Essential Fish Habitat. 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. Dredged material from the FIC would be placed back into the Great Marsh Island restoration area (**Figures 8-10)**.

FIGURE 22: ALTERNATIVE VE-3B PLUS FLOW IMPROVEMENT CHANNEL



5.5 COMPARISON OF FINAL ALTERNATIVES

Table 7 lists the final alternative plans that were evaluated and the associated problems and benefits. The only two alternatives that met the study objectives were the VE-3B plus Flow Improvement Channel alternative (VE-3B +FIC) and the combination of the widening alternative and the VE-3B plus Flow Improvement Channel (VE-3B+FIC+2). The Benefit-Cost Ratios associated with these final two alternatives are illustrated in **Table 9**. **Table 8** lists alternatives considered in the environmental assessment and summarizes the major features and consequences of the No Action Plan; Alternative 3B Reconfigure Mile Point Training Wall (VE-3B above); and the Recommended Plan which is Alternative 3B with the Flow Improvement Channel (VE-3B+FIC). See Section 7.0 Environmental Effects for a more detailed discussion of impacts of alternatives.

TABLE 7: JACKSONVILLE HARBOR MILE POINT ALTERNATIVE PLANS

Jacksonville Harbor Mile Point - Alternative Plans				
Alternative Plan	**Problems Addressed**	**Designation**	**Management Measure(s)**	**Benefit Description**
Relocate Mile Point Training Wall and Great Marsh Island Restoration	Erosion of Mile Point Shoreline; Unsafe inbound transit through Mile Point turn during Ebb Tide; light-loading of Northside light plant tankers	(VE-3B)	Relocate Mile Point Training Wall	Reduce Erosion Along Shoreline; Eliminate Delay Associated with Pilots' Entry Restriction for Most Vessels; Reduce light-loading of Northside Light Plant Tankers
Widening Alternative	Unsafe inbound transit through Mile Point turn during ebb tide; light-loading of northside light plant tankers	2	Training Wall Reach Widening	Reduce Delay Associated with Pilots' Entry Restriction for Most Vessels; Reduce light-loading of Northside Light Plant Tankers
Alternative Plan VE-3B plus Flow Improvement Channel and Widening Alternative	Erosion of Mile Point Shoreline; Unsafe inbound transit through Mile Point turn during Ebb Tide; light-loading of Northside light plant tankers, Shoaling and Flushing Capacity of Greenfield Creek.	VE-3B+F.I.C.+2	Relocation Mile Point Training Wall plus Flow Improvement Channel and Reach Widening	Reduce Erosion Along Shoreline; Eliminate Delay Associated with Pilots' Entry Restriction for Most Vessels; Reduce light-loading of Northside Light Plant Tankers, Increased Flushing Capacity and Beneficial use of Dredged Material.
VE-3B plus Flow Improvement Channel	Erosion of Mile Point Shoreline; Unsafe inbound transit through Mile Point turn during Ebb Tide; light-loading of Northside light plant tankers; Shoaling and Flushing Capacity of Greenfield Creek.	VE-3B+F.I.C.	Relocate Mile Point Training Wall and Flow Improvement Channel	Reduce Erosion Along Shoreline; Eliminate Delay Associated with Pilots' Entry Restriction for Most Vessels; Reduce light-loading of Northside Light Plant Tankers; Increased Flushing Capacity and Beneficial use of Dredged Material.

TABLE 8: SUMMARY OF DIRECT AND INDIRECT IMPACTS

ALTERNATIVE ENVIRONMENTAL FACTOR	No action Status Quo	Alternative 3B Reconfigure Mile Point Training Wall	Recommended Plan- Reconfigure Mile Point Training Wall and Construct Chicopit Bay Flow Improvement Channel
GENERAL ENVIRONMENT	Difficult crosscurrents would persist, and Mile Point may remain vulnerable to erosion. Erosion at Great Marsh Island would continue, and additional salt marsh would be lost. Restoration of the island would not occur.	Training wall footprint would change. Circulation patterns and current velocities would also change, but significant impacts to the estuarine environment are not anticipated. Impacts to salt marsh would be mitigated. Further erosion of Great Marsh Island would be prevented, and lost salt marsh would be restored.	Training wall footprint would change. Current velocities would also change, but significant impacts to the estuarine environment are not anticipated. Impacts to salt marsh would be mitigated. Further erosion of Great Marsh Island would be prevented, and lost salt marsh would be restored. Flow Improvement Channel would increase flushing of silt.
FLORIDA MANATEE	No effect.	May affect, but not likely to adversely affect, with implementation of standard protection measures.	May affect, but not likely to adversely affect, with implementation of standard protection measures.
PIPING PLOVER	No effect.	May affect, but not likely to adversely affect. Species may not occur in project area. Minimal loss of potential habitat.	May affect, but not likely to adversely affect. Species may not occur in project area. Minimal loss of potential habitat.
WOOD STORK	No effect in project footprint. However, restoration of Great Marsh island, potential foraging habitat for the stork, would not occur.	May affect, but not likely to adversely affect. Restoration of Great Marsh island would more than offset loss of foraging habitat.	May affect, but not likely to adversely affect. Restoration of Great Marsh island would more than offset loss of foraging habitat.
SEA TURTLES	No effect.	May affect, but not likely to adversely affect, with use of cutterhead dredge. No nesting habitat in project area.	May affect, but not likely to adversely affect, with use of cutterhead dredge. No nesting habitat in project area.
SHORTNOSE STURGEON	No effect.	May affect, but not likely to adversely affect with use of cutterhead dredge.	May affect, but not likely to adversely affect with use of cutterhead dredge
SMALLTOOTH SAWFISH	No effect.	May affect, but not likely to adversely affect, with use of cutterhead dredge.	May affect, but not likely to adversely affect, with use of cutterhead dredge.
NORTHERN RIGHT WHALE	No effect.	May affect, not likely to adversely affect with protective measures.	May affect, not likely to adversely affect with protective measures.
ESSENTIAL FISH HABITAT (EFH)	No effect in project footprint. However, erosion of Great Marsh Island would continue, and additional salt marsh would be lost. Restoration of Great Marsh island would not occur	Salt marsh impacts (8.15 acres) would be mitigated. Restoration of Great Marsh Island (estimated 53 acres) would more than compensate for impacts. Water column habitat would be temporarily impacted during dredging.	Salt marsh (8.15 acres) impacts would be mitigated. Restoration of Great Marsh Island (estimated 53 acres) would more than compensate for impacts. Flow Improvement Channel would provide deep water habitat in Chicopit Bay, and increase flushing of silt. Water column habitat would be temporarily impacted during dredging.

ALTERNATIVE ENVIRONMENTAL FACTOR	No action Status Quo	Alternative 3B Reconfigure Mile Point Training Wall	Recommended Plan- Reconfigure Mile Point Training Wall and Construct Chicopit Bay Flow Improvement Channel
SHELLFISH AND WILDLIFE RESOURCES	No effect in project footprint. However, erosion of Great Marsh Island would continue, and additional salt marsh would be lost. This would affect shellfish and wildlife resources other than EFH and listed species.	Loss of oyster habitat would be mitigated. Restoration of Great Marsh Island would provide habitat for shellfish and wildlife resources other than EFH and listed species. Open-water and upland habitats would be impacted.	Loss of oyster habitat would be mitigated. Restoration of Great Marsh Island would provide habitat for shellfish and wildlife resources other than EFH and listed species. Flow Improvement Channel would provide deep water habitat in Chicopit Bay, and increase flushing of silt. Open-water habitats and upland habitats would be impacted.
CULTURAL RESOURCES[23]	The existing conditions have resulted in substantial erosion and loss of the Great Marsh Island which has exposed the prehistoric site. This erosion is expected to continue with an eventual loss of the archeological site.	Minimal effect on the archeological site. The effect will be similar to past conditions and will provide protection from ongoing and potential future erosion. As such the effect will not be adverse.	Minimal effect on the archeological site. The effect will be similar to past conditions and will provide protection from ongoing and potential future erosion. As such the effect will not be adverse.
WATER QUALITY	No effect.	Circulation patterns and current velocities would change, but significant water quality impacts are not anticipated. Short-term localized increase in turbidity at dredge site.	Circulation patterns and current velocities would change, but significant water quality impacts are not anticipated. Flow Improvement Channel would help flush silt from Chicopit Bay. Short-term localized increase in turbidity at the dredge site.
AIR QUALITY	No effect.	Minor and short-term impacts caused by dredging equipment.	Minor and short-term impacts caused by dredging equipment.
HTRW	No effect.	There are no known HTRW sites within the project area.	There are no known HTRW sites within the project area.
RECREATION	No effect.	Restoration of Great Marsh Island would close off recreational boat traffic through this area.	Flow Improvement Channel in Chicopit Bay would provide recreational boat access to IWW.
AESTHETICS	No effect.	Minor short-term adverse impact due to construction activities. Mitigation would result in additional salt marsh.	Minor short-term adverse impact due to construction activities. Mitigation would result in additional salt marsh.
NOISE	No effect.	Minor and temporary adverse effect.	Minor and temporary adverse effect.

[23] Based on the results of the underwater cultural resource survey.

ALTERNATIVE ENVIRONMENTAL FACTOR	No action Status Quo	Alternative 3B Reconfigure Mile Point Training Wall	Recommended Plan- Reconfigure Mile Point Training Wall and Construct Chicopit Bay Flow Improvement Channel
SOCIO ECONOMICS	Long-term adverse impact to local, regional and statewide economies.	Long-term benefit to local, regional and statewide economies. Residents along Mile Point should benefit due to reduced erosion.	Long-term benefit to local, regional and statewide economies. Residents along Mile Point should benefit due to reduced erosion.
NAVIGATION	Long-term adverse impact to deep draft vessels.	Long-term benefit to deep draft vessels.	Long-term benefit to deep draft vessels.

5.6 PLAN SELECTION

Alternative VE-3B plus a Flow Improvement Channel is the Recommended Plan. This alternative was evaluated and determined to be economically justified, environmentally acceptable, and complete. In addition, a recommended (approximate) 53 acres of salt marsh restoration and planting is proposed for beneficial use of dredged material and environmental mitigation. The recommended plan has the highest Net average annual equivalent (AAEQ) national economic development (NED) benefits and also provides up to 34 acres of incidental benefits (**Table 9**).

5.6.1 NED Benefits

NED benefits are the time savings to vessels otherwise delayed by Mile Point tidal restrictions for entry and exit from Jacksonville Harbor. The Jacksonville District supplied the Contractor a Mile Point benefit spreadsheet to be used for calculating the without-project delay costs and benefits resulting from with-project reductions of the existing ebb tide constrained sailing drafts.

The spreadsheet calculates the vessel average delay hours as a function of sailing draft and tides, effectively acting as a typical tide delay function, but with lower sailing draft tidal delay thresholds reflecting the Mile Point restrictions (>33 feet sailing draft inbound and >36 feet sailing draft outbound). The Mile Point without-project inbound sailing draft restriction of >33 feet is used as the basis for all delay estimates except for the New World Alliance (NWA) vessels calling TraPac for which a 34 feet inbound delay threshold is used. The Mile Point inbound sailing draft restriction (>33 feet) is applied to a vessel call list contained in the Restriction Without-project worksheet to establish the delay time and associated vessel costs. Modifications to the Mile Point sailing draft restriction as a result of with-project conditions are applied to a vessel call list contained in the Restriction With-project worksheet to establish the changes in delay time and associated vessel costs.

Once the baseline vessel delay costs are calculated for a particular vessel call list (interactions between the Restriction Without-project and Ebb and Tide Delay

Without and between the Restriction With-project and Ebb and Tide Delay With-project), the Growth worksheet will allow the reductions in vessel delay costs associated with the different fleets (bulk, tanker, container, general cargo) to change in response to projected changes in vessel calls. The Growth worksheet allows for changes in the vessel calls for each year of the project life, 2015 to 2065.

The Recommended Plan is also the NED plan or the plan that maximizes Net Benefits and is environmentally acceptable; the Net AAEQ Benefits are $0.7 million. The project is economically justified with a Benefit-to-Cost Ratio (BCR) of 1.4. Navigation benefits were computed using a tide delay spreadsheet to compile the vessel delay hours attributable to Mile Point restrictions.[24]

TABLE 9: JACKSONVILLE HARBOR MILE POINT ALTERNATIVES COSTS AND BENEFITS ($1,000s)[25] (October 2011 price levels and FY2012 discount rate)

Alternative	Benefits	Costs	AAEQ Cost	AAEQ Benefits	AAEQ Net Benefits	BCR
Reconfigure	$52,400	$37,300	$1,737	$2,440	$703	1.40
Reconfigure & Widen	$52,400	$76,300	$3,628	$2,440	-$1,188	0.67

*Costs include interest during construction (IDC).

5.6.1.1 Incidental Benefits

Incidental environmental benefits were computed based upon the combination of feasible dredging and planting alternatives.[26] It is necessary with the Recommended Plan to clear, grub, and dredge the western portion of Helen Cooper Floyd Park (HCFP). This action would impact a total of 8.15 acres of salt marsh. Mitigation would be performed by restoring salt marsh at nearby Great Marsh Island, which has been eroding over the years. As a beneficial use of dredged material, the USACE will attempt to restore the entire eroded breakthrough at the island. This would result in up to 53 acres of total restoration of marsh, and would provide a significantly higher increase of salt marsh functions and values. The approximate 53 acres of total restoration provides for the mitigation and additional acreage as incidental environmental benefits.

5.6.2 Least Cost Disposal Alternative

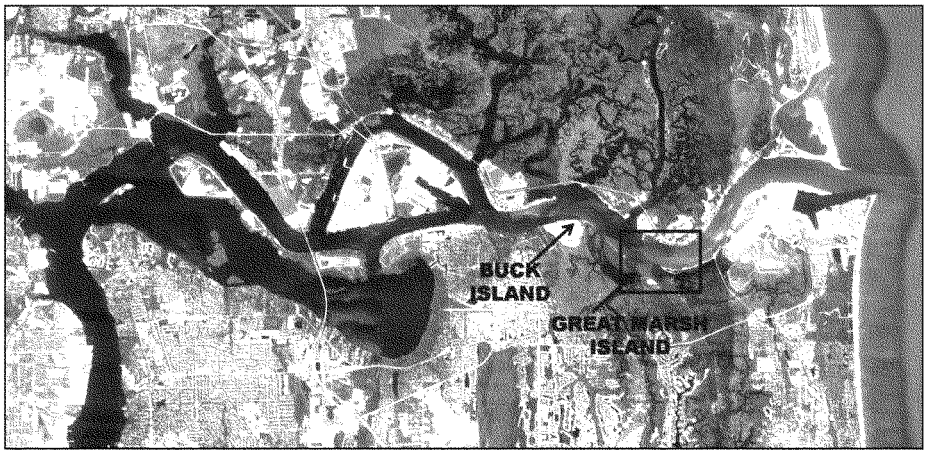
As is detailed in Appendix A, Attachment E, VE Study FY08, Proposal C-2, and also in Section 6.3.1 of this report, the Recommended Plan includes disposal of

[24] Additional details on the economic model used and the economic assumptions can be found in Appendix B (Economics Appendix).
[25] Reconfigure & Widen (VE-3B+FIC+2) was not economically justified and thus the costs and benefits are planning level costs and benefits.
[26] Additional details on the alternatives evaluated for mitigation can be found in Appendix D (Mitigation Plan).

dredged material at Great Marsh Island as the least cost disposal option, or base plan. The following is a summary of the disposal alternatives evaluated. Costs are not reflective of the final Value Engineering plan costs, which were further refined in a second Value Engineering Study in 2011, as is detailed in **Section 6.3.1**.

Disposal Site	Unit Cost
Buck Island	$55,945,000
Great Marsh Island	$46,889,000
Savings at Great Marsh Island	$9,056,000

Use of Great Marsh Island instead of Buck Island incorporates the beneficial use of dredged material by creating a salt marsh mitigation area that restores wetlands lost on Great Marsh Island. The mitigation site/disposal site at Great Marsh Island is closer than Buck Island, which would result in a substantial cost savings by reducing pumping distance of dredged material and allows for use of a smaller dredge and less pipeline.



6.0 THE RECOMMENDED PLAN

The recommended plan for navigation improvements at Jacksonville Harbor Mile Point has to be responsive to local needs and desires as well as the economic and environmental criteria established by Federal and state law. To do this the plan must be able to handle current and forecasted vessel traffic safely with minimum impact on the environment and without excessive delays and damage. Subsequent paragraphs outline the plan design, construction, operation and maintenance procedures.

The U.S. Army Corps of Engineers (USACE) decision making for the selection of a recommended plan begins at the District level and continues at the Division and Headquarters levels through subsequent reviews and approval. For congressionally authorized projects, the final agency decision maker is the Secretary of the Army through the Assistant Secretary of the Army for Civil Works.

The National Economic Development (NED) Plan is the Recommended Plan, identified as Alternative VE-3B plus FIC, and combines the reconfiguration of the existing training wall, restoration of Great Marsh Island which is the least cost disposal option, and the creation of a Flow Improvement Channel (FIC) in Chicopit Bay. Please see **Section 7.6.2** for additional information on the FIC. The training wall reconfiguration includes removal of the western 3,110 feet of the existing Mile Point training wall and the construction a relocated eastern leg training wall of approximately 2,050 feet. The least cost dredging disposal alternative is to restore the breakthrough at Great Marsh Island by placing dredged material at the Island and constructing a western leg training wall, approximately 4,250 feet (**Figure 22**).

6.1 DESCRIPTION OF THE RECOMMENDED PLAN

6.1.1 Environmental Mitigation

The recommended plan would impact approximately 8.15 acres of salt marsh at Helen Cooper Floyd Park. Mitigation to offset the loss of 8.15 acres of salt marsh through implementation of the Recommended Plan would be performed by restoring approximately 18.84 acres of salt marsh which historically occurred at nearby Great Marsh Island. However, as a beneficial use of dredged material, the USACE will attempt to restore the entire eroded breakthrough at the island, equating to approximately 53 acres of marsh, providing a significantly higher increase of salt marsh acreage. For more information on the proposed mitigation please see Appendix D: Mitigation Plan and Incremental Analysis. The mitigation plan was prepared in accordance with the guidance provided in Water Resources Development Act of 2007 Section 2036 (a). The USACE regards the Flow Improvement Channel (FIC) as mitigation for project-related impacts, specifically the closure of the breakthrough at Great Marsh Island, which would adversely

affect both water quality within Chicopit Bay and local boating access (please refer to Appendix A: Engineering Design for more information). Monitoring and corrective action, if needed, of the FIC will be implemented by the USACE for 5 years. Based on the dredged material management plan for Jacksonville Harbor and historical cycles of dredging, shoaling tends to occur in the main channel within 2 or 3 years of dredging. While the FIC is anticipated to be self-maintaining, the 5-year period of monitoring will allow for surveying across annual weather variations for confirmation.

6.1.2 Ecosystem Restoration Using Dredged Material (EP-116-2-1)

Planning Guidance Notebook ER 1105-2-100 (USACE, April 2000) page E-69 states that it is USACE policy that studies include an assessment of potential beneficial uses of dredged material for environmental purposes including fish and wildlife habitat creation, ecosystem restoration and enhancement, and hurricane and storm damage reduction.

This study contains a complete Mitigation Plan (Appendix D) that evaluates alternatives for beneficial use of dredged material in conjunction with environmental mitigation efforts. Using the USACE Institute for Water Resources (IWR) Planning Suite Software, management measures were combined into alternatives for incremental cost and benefit comparisons. Six alternatives are outlined in **Table 10**.

Using the Uniform Mitigation Assessment Method, the USACE has determined that approximately 18.84 acres of mitigation would be required to offset the loss at Helen Cooper Floyd Park. Optimal restoration includes the required mitigation (approximately 18.84 acres); up to 26.16 acres of additional salt marsh would be restored at Great Marsh Island for a total of approximately 45 acres. Expanded restoration would include both the required and optimal, plus approximately 8 acres of additional marsh would be restored for a total of approximately 53 acres. Material for the additional 8 acres of restoration would come from the dredging of the proposed Flow Improvement Channel (FIC) in Chicopit Bay.

Incremental Analysis identifies Mitigation Alternative 6 as the Best Buy, and is described as restoration of the 45 acres of eroded marsh at Great Marsh Island with an additional 8 acres of marsh restoration for a total of approximately 53 acres. Material for the additional 8 acres of restoration would come from the dredging of the proposed Flow Improvement Channel in Chicopit Bay. The proposed 53 acres would be sprigged with transplanted salt marsh species at 3-foot centers. This alternative generated the largest Habitat Unit gain per incremental cost. Additional information can be found in Appendix D: Mitigation Plan and Incremental Analysis.

TABLE 10: ENVIRONMENTAL MITIGATION ALTERNATIVES*

ALTERNATIVE
Alternative 1 – Required Mitigation plus 18.84 acres of Planting
Alternative 2 – Optimal Restoration plus 18.84 acres of Planting
Alternative 3 – Optimal Restoration plus 45 acres of Planting
Alternative 4 – Expanded Restoration plus 18.84 acres of Planting
Alternative 5 – Expanded Restoration plus 45 acres of Planting
Alternative 6 – Expanded Restoration plus 53 acres of Planting

*The mitigation alternatives are further defined in Appendix D.

6.2 DETAILED COST ESTIMATES (MCACES)

Based on planning level benefits and costs as shown in **Table 9**, Alternative VE-3B plus Flow Improvement Channel (FIC) represents the NED plan.

Once the NED plan was determined, a detailed cost estimate was developed using the Micro Computer Aided Cost Engineering System (MCACES). As outlined in the Engineering Appendix A, Alternative VE-3B with Chicopit Bay Flow Improvement Channel, construction cost (including Pre-Construction Engineering and Design (PED) and aids to navigation) is $36,430,000 with an Interest During Construction (IDC) of approximately $1,622,000. The average annual costs were determined to be $1,737,000. The average annual benefit for alternative VE-3B plus FIC is $2,440,000. Therefore, the benefit-to-cost ratio for alternative VE-3B+FIC is 1.4.

The estimates of first costs for construction of the NED Plan (which includes restoration of Great Marsh Island for beneficial use of dredged material) were prepared using MCACES software and are presented in the Cost Engineering Appendix, which is included as an attachment to the Engineering Appendix A. The estimate includes a narrative, a summary cost, and a detailed cost showing quantity, unit cost, and the amount for contingencies for each cost item. The costs of the non-construction features of the project are also included in the cost estimate. Costs are currently provided assuming beneficial use of disposal material at Great Marsh Island. The costs have been prepared for an effective date of October 2011.

6.2.1 Project Schedule and Interest During PED/Construction

Interest During Construction (IDC) accounts for the opportunity cost of expended funds before the benefits of the project are available and is included among the economic costs that comprise NED project costs. The amount of the pre-base year cost equivalent adjustments depends on the interest rate; the construction schedule, which determines the point in time at which costs occur; and the magnitude of the costs to be adjusted. PED costs are included in the IDC, as well as construction costs. The current construction schedule assumes authorization of the project in a future Water Resources Development Act

(WRDA). Assuming Congress provides funding subsequently to authorization of the project in that future WRDA, the proposed schedule of activities would follow resulting in benefits starting in the base year of the proposed project. The interest during construction (IDC) was computed with the 2012 fiscal year interest rate of 4%. Total construction duration is assumed to be 465 days. The following is the schedule for construction that was used in computing the IDC (**Table 11**).

TABLE 11: SCHEDULE FOR CONSTRUCTION USED FOR COMPUTATION OF IDC

Description	Duration in Months	Cumulative Months
Division Engineer's Public Notice/ Design Agreement (DA) Initiated	0	S
DA Executed / Initiate PED	1	S+1
Continue Draft Plans and Specification	10	S+11
Project Cooperation Agreement (PCA) Initiated (Once Authorized& WQC)	1	S+12
PCA Executed by USACE	5	S+17
Advertise (Contingent upon funding)	1	S+18
Receive Proposals	2	S+20
Award Contract	1	S+21
Construction Start	1	S+22
Complete Construction	16	S+34

6.3 DESIGN AND CONSTRUCTION CONSIDERATIONS

The western most 1,310 feet of the existing training wall will be removed and the entire mouth of San Pablo Creek at its confluence with the St. Johns River will be dredged to -12 feet MLW plus 1 foot of allowable overdepth. 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 (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 is needed to more precisely ascertain the exact quantities of stone available for reuse.

The east leg training wall incorporates a larger scour apron (25 feet) than the West leg (10 feet) 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 feet of training wall, tying into the existing structure at Helen Cooper Floyd Park; and the west leg consists of building approximately 4,250 feet of training wall along 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.

See Engineering Appendix A for all design, geotechnical, and hydrologic modeling information; surveys; and plates in greater detail.

6.3.1 Value Engineering

The original Alternative 3B was refined via an extensive value engineering (VE) study. The VE savings for the Mile Point Project Feasibility Study was based on the cost for alternatives to Plan 3B as described in Plan Formulation Section 5.4.3 of this report. The Recommended Plan is the composite design providing all VE items including adjustment to quantities for armor stone, dredged material reductions with new depths (-13 MLW), the 53-acre Great Marsh Island restoration, and reconnection of Chicopit Bay flow improvements.

Preliminary designs included extensive armoring of the channel bottom in the Intracoastal Waterway (IWW). Upon further analysis during the VE study, it was determined that armoring of the entire channel bottom was unnecessary. Although hydrodynamic modeling predicted that higher water velocities along the eastern shoreline of the IWW have the potential to erode and undermine the new training wall, armoring of the entire confluence area would not be necessary or desired. It is more appropriate to concentrate on providing enhanced scour protection directly to the individual structures rather than a broad based scour feature under the entire width of the IWW.

Cost and VE savings are as follows:

1. Develop Improved Training Wall Sections and Delete Scour Stone
    a. SAVINGS: $12,234,000;
    b. ACTION: Accepted in NED/Recommended Plan

2. Develop a Composite Plan for Mile Point Navigation Improvements and Dredge Disposal Supporting Salt Marsh Mitigation and Restoration of Great Marsh Island.
    a. SAVINGS: $9,056,000;
    b. ACTION: Accepted in NED/Recommended Plan

3. VE Savings to Mile Point Improvements Project Feasibility Study:
    a. Estimated Total First Cost Savings: $21,290,000

The alternative was further value engineered in 2011, evaluating alternative materials for the western wall at Great Marsh Island. The results of that study showed that the use of a Concrete Structure Unit (CSU) for the selected commercial training wall structure should prove to be both cost effective and

provide the reliability for an 80 to 100-year training wall. Use of CSU provides better tidal exchange to marsh areas, and adds oyster and fish habitat over the other proposed systems. Structural units can be casted near the project area and barged for placement on the prepared foundation described. The heights of the units to be used on both ends of the wall can also be reduced with a change in existing elevations at both existing land features of Great Marsh Island. This could reduce unit heights of approximately 5 feet over these portions of the training wall. Compared to the stone training wall alternative, approximately $20,120,000 can be reduced from the cost of the wall if the CSU system is used.

4. Additional VE Savings using CSU or selected commercial training wall structure: $20,120,000

6.3.1.1 Stability of the Concrete Structural Units

There are methodologies which give an indication of the stability of similar-shaped units under a variety of input wave conditions. Using guidance from EM 1110-2-1100, the Hudson methodology was used to assess the stability of the Wave Attenuation Device (WAD) units, or more specifically for this project, the CSUs as discussed above. The exact configuration of the WAD units cannot be accommodated in this guidance since these particular armor units did not exist at the time the empirical data was gathered for determining the Kd (Stability Coefficient) values that are incorporated into the Hudson equation. However, the 'Modified Cube' units presented in the guidance are relatively close in terms of shape and in terms of the surface area presented to impacting waves. By inputting the proper design parameters, a calculated minimum weight of 116 pounds per unit would be required to resist the impact of the 3-foot design wave. The proposed WAD units are estimated to weigh 20,000 pounds each (10 tons). This yields a factor of safety of 172 to 1. Therefore, these units would be extremely unlikely to slide or overturn under the influence of design wave conditions.

As a follow-up, prior to source selection, the contractor would be required to submit test data to show the units' performance under real wave-loading conditions. Pending satisfactory performance in such a test, the units could be approved for use on this project. Other stability-related issues relate to the units settling into the bedding layer, and to the scouring of the bedding layer from around the units. In regard to the former concern, the average bearing pressure of each 10-ton WAD unit would be on the order of 440 psi (12-inch wall thickness of WAD unit) or 296 psi (based on 18-inch wall thickness). These bearing pressures are well within the tolerable loading of the bedding layer. The WAD units are cast with stainless steel lifting eyes on the top of each unit so that they can be lifted using appropriate equipment. In the event of settlement of the bedding layer into the underlying sediment or settlement of the unit into the bedding layer, the individual units can be lifted, the foundation reinforced, and the units replaced. Note that no core borings of the underlying sediment along the

training wall alignments have been obtained at this time; this data will be incorporated into final design when the field work is completed.

6.3.2 With-Project Sea Level Rise

It is reasonable to assume that current velocities would increase in the project area under all three sea level rise scenarios. A higher sea level will likely produce a larger tidal prism in the Intracoastal Waterway as well as in the St. Johns River, resulting in a larger volume of water moving through the project area. This would be especially true for the Intracoastal Waterway which has a large areal extent of tidal salt marsh and very wide flood plains, producing a non-linear stage-storage relationship. Also, under the high sea level rise scenario there is a potential for significant loss of salt marsh, further increasing tidal volumes. Under any sea level rise scenario for the future without project condition, it is reasonable to assume that the dangerous cross-currents at Mile Point will be further exacerbated due to an increase in tidal volume flowing in the St Johns River and Intracoastal Waterway and meeting at such an extreme confluence angle because of the existing training wall alignment that currently exists.

Projecting the three rates of change to the year 2065, which corresponds to a 50-year project life, provides us with a predicted low level rise of 0.12 m or approximately 0.39 feet, an intermediate level rise of 0.25 m or approximately 0.81 feet, and a high level rise of 0.66 m or approximately 2.17 feet. In order to assess the impact that either the low level (0.39 feet), the intermediate level (0.81 feet) or the high level (2.17 feet) of predicted sea level rise may have on this project it is first important to understand the function of the affected structure. A training wall by definition is a wall built along the bank of a river or estuary parallel to the direction of flow to direct and confine the flow. With that definition in mind it should be noted that a training wall is not a coastal protection structure and the function and performance of the wall is measured by its ability to "train" river currents; therefore, as long as the water surface level is below the crest of the structure, the structure is performing at 100% design capacity. The structure design crest elevation of +7.5 feet (+2.29 m), MLLW, represents a height of 2.55 feet (0.77 m) above Mean Higher High Water (MHHW) and a height of 0.36 feet (0.11 m) above the highest observed water level (NOAA Tidal Bench Mark Station ID #8720218 at Mayport).

Thus the impact of the low and intermediate level increases of 0.39 feet and 0.81 feet, respectively, would be inconsequential to the performance of the structure and the high level increase of 2.17 feet would only affect the performance of the structure during low probability events that exceeded the MHHW level by more than 0.38 feet. 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 although the crest width would have to decrease slightly to do so.

It is anticipated that the potential effects of sea level rise would be much less severe under the with-project condition. While the Mile Point alternative will not affect the volume of water flowing into or out of the Intracoastal Waterway, the reconfigured training wall alignment is able to improve the confluence angle of the Intracoastal Waterway and the St. Johns River. Since the volumes and resulting velocities of tidal water coming out of the Intracoastal Waterway and the St Johns River during ebb tide would likely increase under both the with- and without-project conditions, the with-project condition will continue to produce a resultant current vector that is aligned with the navigational channel and greatly improved over the without-project condition.

If, in the future, current velocities do increase under a sea level rise scenario to the point where the currents result in navigation restrictions, it is possible that the training wall could be further realigned. More of the landward end of the existing Mile Point Training wall could potentially be removed, further improving the confluence angle of the two water bodies and reducing cross-currents which may exist. While the hydrodynamic effects of sea level rise were not explicitly quantified with numerical models or ship simulation due to the extensive level of effort required, the selected alternative will continue to have a beneficial effect on currents in the St Johns River under future sea level rise scenarios. The selected plan was the only alternative capable of addressing and successfully improving the direction of the water flowing out of the Intracoastal Waterway under the existing tidal conditions while retaining adaptive capacity to preserve performance if necessary under future sea level scenarios.

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.

6.3.3 Storm Surge

The following are storm surge levels from the Federal Emergency Management Agency (FEMA) for Atlantic Beach, approximately 2 miles to the east of the Mile Point project site:

Return Interval (years)	Surge Level (feet)
2	2.7
5	5.1
10	6.6
50	9.8
100	11.0

These surge levels do not include the effects of astronomical tides. Therefore, the less-frequent storm surge events may overtop the training wall during periods of peak tide levels. These WAD units are designed to be completely overtopped; however, and as a result, no damage to the structures is expected from such overtopping events. Once submerged, the structures would actually be subjected to less wave impact energy than an emergent structure.

Even under the influence of the design wave, no damage to the WAD structures is expected at these elevated water levels. The design wave height is 3 feet along the western training wall, which is the location of the WAD units. The design waves are generated by ship wakes and as such are completely independent of increased water depth. These WAD units are highly stable under the influence of 3-foot waves, so no adverse effects on the units are anticipated due to wave action at any water level.

The only adverse effect that can be identified due to elevated storm surge levels is that the WAD units would lose some of their effectiveness at dissipating wave energy when overtopped. As seen in the above surge level versus frequency of recurrence table, such overtopping events would occur rarely, and would usually last for short durations (near the time of high tide only).

6.3.4 Tidal Prism

The purpose of this analysis is to determine if the post-construction entrance channel to Chicopit Bay will remain open and stable, and what degree of shoaling (if any) can be expected once the project features have been constructed.

The tidal analysis was performed by delineating the plan view extent of Chicopit Bay and its primary tributaries using georeferenced aerial photographs imported into CADD (MicroStation). The mean tide range was applied throughout this region in order to calculate the tidal prism in Chicopit Bay. Flow velocities were calculated in the vicinity of the mouth of Chicopit Bay, leading to the IWW. Based on the magnitudes of these velocities, conclusions were drawn as to the potential for shoaling or scouring in this region.

Note that at each step in this analysis, conservative (low) assumptions, estimates, and measurements are made. For example, several assumptions are

made that greatly reduce the tidal prism, thereby reducing the calculated volume of flow relative to the actual volume of flow.

The following assumptions were made:

- Some of the marsh area along the perimeter of the bay is overwashed during the upper phase of the tide, but this additional volume of water was excluded from the analysis, reducing the calculated tidal prism.
- Some of the 'open' portion of Chicopit Bay was excluded from the analysis since some of the volume of the bay drains through a series of small, shallow outlets at the north end of the bay. The exact volume of flow that passes though these openings is uncertain but it is felt that assigning most of the volume of the northernmost portion of the bay to these openings will give an extremely conservative estimate of the flow volume through the main (IWW) opening.
- Volume computations of the flow through the two large feeder creeks south of Chicopit Bay and several other smaller feeder creeks were all truncated at the tree-line surrounding the bay, since the limits of the bay area were impossible to define below the tree canopy using aerial photography. This resulted in a (more conservative) reduced bay area for the purposes of tidal prism computations.
- The mean tide range (MHW minus MLW, versus MHHW minus MLLW) was used throughout this analysis, further decreasing the flow volume relative to other tide stages during each lunar cycle. NOAA Tide Gauge Station ID 8720232 (Pablo Creek Entrance, FL) was selected as a reference due to its close proximity to Chicopit Bay and the FIC.

Conservative assumptions were made at each decision-point when assembling data for this analysis. Therefore the results of this analysis may be considered very conservative. The ACES software package uses methodology recommended in EM 1110-2-1100 for calculating the magnitude of tidal currents based on tidal prism. Based on a bay area of 1150 acres, NOAA tide range of 3.84 feet, and average channel opening area of 2700 square feet, peak flow velocities in the vicinity of the FIC are calculated at 3.6 feet per second. This peak velocity appears to be more than adequate to maintain an open channel. Any shoaling in the vicinity of the entrance channel would reduce the channel cross-section, resulting in further increases in flow velocity and increased channel scouring.

6.4 LERRDS CONSIDERATIONS

There are federally-owned lands impacted by the proposed project. Approximately 51.2 acres of land are under the control of the U.S. Navy. The U.S. Army Corps of Engineers will coordinate with the U.S. Navy for a license that will allow removal of the real property (uplands) in the vicinity of Helen Cooper Floyd Park. 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, 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. As the area is continuing to erode, surveys and designs will be completed during the PED phase to determine the extent of construction needed to complete the western leg training wall. The Nature Conservancy, Inc. is familiar with the proposed project and has indicated their support for the project.

Other lands required for the construction and operation of the proposed project are located below the ordinary high water line and as such, available to the Federal government via navigational servitude. Approximately 53 acres of land are within the category of navigational servitude.

The U.S. Army Corps of Engineers, as the responsible lead agency for the Jacksonville Harbor Navigation Project will coordinate with the U.S. Navy the license of impacted real property. It is anticipated that the license of real property from the U. S. Navy to the U. S. Army Corps of Engineers will take approximately 30 to 90 days after execution of the Project Partnership Agreement. The Federal real estate acquisition/ incidental costs include the project real estate planning, review, and incidental (license) costs. The non-federal sponsor will receive credit towards its share of real estate incidental project costs incurred for certification. Reference the Real Estate Appendix C for more details.

6.5 OPERATIONS AND MAINTENANCE CONSIDERATIONS

The U.S. Coast Guard (USCG) would be responsible for providing and maintaining navigation aids. The U.S. Coast Guard has been tasked to provide costs associated with changes to aids in navigation, and once those costs have been received they will be added accordingly. A relatively small amount of cost is identified in the MCACES estimate to cover miscellaneous incidental costs for coordination with the USCG during and post construction.

6.5.1 Future Operations and Maintenance

Numerical hydrodynamic modeling of the proposed channel improvements and recommended features for the Mile Point project found in Engineering Appendix A shows changes to current vectors (velocities and direction) under flood and ebb tide. Numerical modeling results indicate that crosscurrents exiting the IWW southern channel under ebb tide will be redirected to more closely parallel the alignment of the Federal navigation channel instead of being focused at the erosion prone areas along the northern shoreline of Mile Point. 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 Intracoastal Waterway 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 Intracoastal Waterway navigational channel is predicted as a result of the reconfiguration of the Mile Point training wall.

Historically, the training walls along the St. Johns River have performed well and required very little maintenance. The White Shells training wall has received no maintenance since 1931 and is not scheduled for any maintenance in the near term, the St. Johns Bluff Training Wall received no maintenance between 1931 and 1996 (65 years), the Bartram Island training wall received no maintenance between 1931 and 1998 (67 years) and the Mile Point training wall received no maintenance for a period of 70 years between 1931 and 2001. Therefore, with proper design and construction it is anticipated that no maintenance of the relocated training wall legs will be required over the project life of 50 years.

The June 2005 Interim Dredged Material Management Plan with Environmental Report for the Jacksonville Harbor indicates that for this reach of the river (Bar Cuts 3-13) material would be placed on the beach located south of the St. Johns River inlet. In addition, material from Cuts 14-19 would be placed on Buck Island. All dredged material for the Recommended Plan would, however, be placed in the mitigation site for salt marsh restoration at Great Marsh Island, and would not impact the distribution of quantities planned for Buck Island or for the beach. The selected plan will have no effect on future channel dredging maintenance activities shown in **Tables 12 and 13**.

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 feet MLW are of such magnitude to expect little deposition to occur in either of the channels. The Chicopit Bay Flow Improvement Channel 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. The historical maps, **Figures 8-10**, show water depths up to 10 feet 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. It is reasonable to expect the water velocities in the channel to be sufficient to prevent shoaling within the channel.

Numerical hydrodynamic modeling of the proposed channel improvements and recommended features for the Mile Point project shows changes to current vectors (velocities and direction) under flood and ebb tide. Numerical modeling results indicate that the dangerous crosscurrents exiting the IWW southern channel under ebb tide will be redirected to more closely parallel the alignment of the Federal navigation channel instead of being focused toward the erosion prone areas along the northern shoreline of Mile Point, thus reducing the effects of the crosscurrents on the erosion of the Mile Point shoreline.

TABLE 12: SHOALING RATES AND DREDGING QUANTITIES AND FREQUENCIES FOR JACKSONVILLE HARBOR[27]

CHANNEL REACH	ANNUAL SHOALING RATE	DREDGING FREQUENCY	QUANTITY
BARCUT 3 - CUT 13	175,000 CY	3 YEARS	525,000 CY
CUT 14 - CUT 41	80,000 CY	3 YEARS	240,000 CY
CUT 42	330,000 CY	2 YEARS	660,000 CY
CUT 43 - Terminal Channel	142,000 CY*	3 YEARS	426,000 CY
BLOUNT ISLAND - CUTS F&G	100,000 CY**	2 YEARS	200,000 CY
SPONSOR MATERIAL	150,000	1 YEARS	150,000 CY
* Current estimated quantity is 85,000 cy. Additional quantity of 57,000 cy estimated as a result of Phase III construction.			
** Since the cuts were overdredged, the resulting shoaling rate may be greater than indicated or it can be assumed that sloughing of the side slopes after construction was equal to the overdepth impoundment. The adjacent berths have experienced a shoaling rate of about 40,000 cy. annually.			

[27] Reference the June 2005 Interim Dredged Material Management Plan with Environmental Report for the Jacksonville Harbor.

TABLE 13: UPLAND DISPOSAL MAINTENANCE PLANS FOR BUCK ISLAND AND EAST AND WEST BARTRAM ISLAND[28]

YEAR	BEACH	BUCK ISLAND				EAST BARTRAM			WEST BARTRAM			
		Existing Capacity			988,000	Existing Capacity		610,000	Existing Capacity			1,291,000
	Cuts 3-13	Dredge Material	Beneficial Uses Removal [1]	Dike Raising Capacity Increase	Site Capacity	Dredge Material	Dike Raising Capacity Increase	Site Capacity	Dredge Material	Sponsor Material (Cell B)	Dike Raising Capacity Increase[3]	Site Capacity
2005			-291,600		1,279,600			610,000	260,000	150,000	[4] 3,660000	4,541,000
2006		240,000	-291,600		1,331,200			610,000		909,000		3,632,000
2007			-291,600		1,622,800	660,000	[2] 1,698,000	1,648,000	200,000	150,000		3,282,000
2008	525,000		-291,600		1,914,400			1,648,000		150,000		3,132,000
2009		900,000	-291,600		1,306,000			1,648,000	626,000	150,000		2,356,000
2010			-291,600		1,597,600			1,648,000		150,000		2,206,000
2011	525,000	660,000	-291,600		1,229,200	200,000		1,448,000		150,000		2,056,000
2012		240,000	-291,600		1,280,800			1,448,000	426,000	150,000		1,480,000
2013		660,000	-291,600		912,400	200,000		1,248,000		150,000		1,330,000
2014	525,000		-291,600		1,204,000			1,248,000		150,000		1,180,000
2015		900,000	-291,600		595,600	200,000		1,048,000	426,000	150,000		604,000
2016			-291,600		887,200			1,048,000		150,000		454,000
2017	525,000	660,000	-291,600		518,800	200,000		848,000		150,000	[5] 5,500,000	5,804,000
2018		240,000	-291,600		570,400			848,000	426,000	150,000		5,228,000
2019			-291,600		862,000	200,000		648,000	660,000	150,000		4,418,000
2020	525,000		-291,600		1,153,600			648,000		150,000		4,268,000
2021		900,000	-291,600		545,200	200,000		448,000	426,000	150,000		3,692,000
2022			-291,600		836,800			448,000		150,000		3,542,000
2023	525,000	660,000	-291,600		468,400	200,000		248,000		150,000		3,392,000
2024		240,000	-291,600		520,000			248,000	426,000	150,000		2,816,000
2025		660,000	-291,600		151,600	200,000		48,000		150,000		2,666,000
2026	525,000		-291,600		443,200			48,000		150,000		2,516,000

[1] Material removed from Buck Island facility for local construction projects

[2] Estimated cost for raising dikes to EL.45 MSL (from EL.27 MSL) is $4,337,000

[3] Includes capacity increases for both Cell A and Cell B

[4] Estimated cost for raising dikes to EL.34 MSL (from EL.27 MSL) is $1,740,000

[5] Estimated cost for raising dikes to EL.45 MSL (from EL. 34 MSL) is $1,340.000

[28] Reference the June 2005 Interim Dredged Material Management Plan with Environmental Report for the Jacksonville Harbor.

6.6 SUMMARY OF ACCOUNTS

As stated in Section 5, the Federal process incorporates four accounts to facilitate evaluation and display of effects of alternative plans. The four accounts are national economic development, environmental quality, regional economic development, and other social effects. They are established to facilitate evaluation and display of effects of alternative plans.

The national economic development account is required. Other information that is required by law or that will have a material bearing on the decision-making process should be included in the other accounts, or in some other appropriate format used to organize information on effects. The Federal Objective is to determine the project alternative with maximum net benefits while protecting or minimizing impacts to the environment. The environmental effects of the Recommended Plan were evaluated under the environmental quality account and are detailed in section 7. The economic analysis used NED to measure the benefits of the Recommended Plan; regional shifts in economics are not expected as a part of the Recommended Plan. Other social effects include the effects of the project on the homeowners in the region. The opinions of these homeowners have been noted in the report and are documented in **Section 7**.

The national economic development (NED) account displays changes in the economic value of the national output of goods and services. Under this account, Alternative VE-3B plus Flow Improvement Channel demonstrates the highest net benefits of $703,000 with a BCR of 1.4 (**Table 9**).

6.6.1 Regional Economic Benefits (RED)

The new container terminal, MOL, at Jaxport is expected to provide RED benefits:

- Create more than 1,600 new private sector port jobs in Jacksonville, while supporting operations in trucking, distribution and related services could generate a total of 6,000 direct and indirect local jobs throughout the region. These projections are made by Martin Associates, a Lancaster, Pennsylvania consulting firm widely-recognized as an expert in the evaluation of economic impacts created by maritime activity.
- Create $870 million in new economic benefits annually for the Jacksonville area, including wages paid to private sector port workers; local and state taxes paid by area companies engaged in the service; revenue earned by businesses involved in the operations; and local services and supplies purchased by maritime-related companies relative to Asian trade.
- Could keep some consumer prices low in Jacksonville. This is true because Jacksonville area companies which import from Asia currently

ship these goods through other U.S. ports, some as far away as California, and pay to have those goods trucked to Jacksonville. By importing directly through Jacksonville's port, local companies will save transportation costs and will not have to pass those expenses on to Jacksonville residents.

- Enables Jacksonville businesses to export directly to nations throughout Asia, opening a huge new consumer market for them, and giving them an opportunity to boost sales.
- Make Jacksonville more attractive for a host of businesses to grow operations in Northeast Florida by enabling local companies to export directly to Asian markets, or easily receive goods directly from Asia.
- Creates new opportunities in manufacturing, distribution and warehousing, all linked to trade with these new markets. For example, home improvement and department stores may now look to open distribution centers anywhere in Northeast Florida because this facility will provide them with a direct local link to their Asian suppliers. Similarly, manufacturing plants which rely on parts or materials from Asia may consider Jacksonville more closely for their operations because they now have a direct link to their Asian suppliers.

In December 2008, the Jacksonville Port Authority (JAXPORT) executives and representatives of the Hanjin Shipping Company of Seoul, Korea signed a 30-year lease agreement calling for construction of a 90-acre container facility at the Dames Point Marine Terminal in north Jacksonville. The lease contains an option for further expansion. The $300 million Hanjin Container Terminal at Dames Point is expected to open for business in 2016 and will be a key hub operation for Hanjin's east coast port activity.

The new agreement between the Jacksonville Port Authority and Hanjin is expected to create more than 5,600 new private sector jobs in Jacksonville and support operations in trucking, distribution and related services. The terminal will generate nearly $1 billion in annual economic impact.

6.7 RISK AND UNCERTAINTY

Risk and uncertainty exists in the possibility of the fluctuation of the Federal interest rate, changes in vessel operating costs, or potential mitigation costs. Interest rates and vessel operating costs are discussed further in the Appendix B, the Economics Appendix. Cost contingencies, incremental costs, and estimates for the mitigation plan are discussed in detail in Appendix D, the Mitigation Plan. Monitoring of the Great Marsh Island Restoration Site is included in the Mitigation Plan (Appendix D). Monitoring would be done for no longer than 5 years. Corrective action would be taken, as needed.

6.8 IMPLEMENTATION REQUIREMENTS

To implement a plan at Mile Point, Jacksonville Harbor, certain conditions and requirements are necessary to meet state, local, and Federal standards set by law. A discussion of those responsibilities is in the subsequent paragraphs.

6.8.1 Division of Responsibilities

Under the Water Resources Development Act (WRDA) 1986, as amended by Section 201 of WRDA 1996, Federal participation in navigation projects is limited to sharing costs for design and construction of the general navigation features (GNF) consisting of breakwaters and jetties, entrance and primary access channels, widened channels, turning basins, anchorage areas, locks, and dredged material disposal areas with retaining dikes.

Non-federal interests are responsible for and bear all costs for acquisition of necessary lands, easements, rights-of-way and relocations; terminal facilities; and dredging berthing areas and interior access channels to those berthing areas.

6.8.2 Cost Sharing

1. The Water Resources Development Act of 1986 (Public Law 99-662) as amended, specifies cost apportionment by project purpose for deep draft navigation projects. Federal participation in navigation projects is limited to sharing costs for design and construction of general navigation features (GNF) consisting of breakwaters and jetties, entrance and primary access channels, widened channels, turning basins, anchorage areas, locks, and dredged material disposal areas with retaining dikes. Non-federal interests are responsible for and bear all costs for acquisition of necessary lands, easements, rights-of-way and relocations; terminal facilities; and dredging berthing areas and interior access channels to those berthing areas.

2. Title I Section 101 of WRDA 1986 requires the project sponsor to bear a percentage share of harbor construction for project components that are cost shared (general navigation features, mitigation) that varies according to the range of water depths where work is to be done. That cost share is paid during construction.

3. For a commercial navigation project with-project depths greater than 20 feet but not in excess of 45 feet, the non-federal share for the construction is 25 percent. Lands, easements, rights-of-way, and relocations (LERRs) are 100 percent non-federal costs. Operation and maintenance of the general navigation features with a 100 percent commercial vessel navigation project are a 100 percent Federal responsibility. **Table 14** summarizes the cost sharing percentages. **Table 15** shows the total cost sharing summary of the NED plan.

4. As is shown in **Tables 14 and 15;** ER-1105-2-100 on Page E-62 states under 2(a) Harbors, General Navigation Features. (See Table E-12) Section 101 specifies cost shares for general navigation features that vary according to the channel depth: (20 feet or less, greater than 20 feet but not more than 45 feet, and greater than 45 feet). The percentage applies as well to mitigation and other work cost shared the same as general navigation features. The cost share is paid during construction. Section 101 also requires the project sponsor to pay an additional amount equal to 10 percent of the total construction cost for general navigation features. This may be paid over a period not to exceed thirty years, and LERRs may be credited against it.

TABLE 14: GENERAL COST ALLOCATION

Feature	Federal Cost % [1]	Non-Federal Cost % [1]
General Nav. Features (GNF)	• 90% from 0' to 20' • 75% from 20' to 45' • 50% 46'and deeper	• 10% from 0' to 20' • 25% from 20' to 45' • 50% 46' and deeper
GNF's costs for this project include: mobilization, all dredging costs, and all disposal area construciton costs.		
Navigation Aids	• 100%	• 0%
Operation and Maintenance		
GNF	• 100% except cost share 50% costs for maint. > 45 feet	• 0% except cost share 50% for maint. > 45 feet
Mitigation	• 75%	• 25%
(1) The Non-Federal Sponsor shall pay an additional 10% of the costs of GNF over a period of 30 years, at an interest rate determined pursuant to Section 106 of WRDA 86. The value of LERR shall be credited toward the additional 10% payment.		

TABLE 15: COST SHARING TABLE NED PLAN SUMMARY (OCTOBER 1, 2011 PRICE LEVELS AND FY2012 DISCOUNT RATE)

(October 1, 2011 Price Levels and FY12 discount rate) Cost Summary Relocation (Reconfiguration) + Flow Improvement VE-3B+FIC			
	Total Cost	Federal Share	Non-federal Share
General Navigation Features	20-45 ft.	75%	25%
Mobilization	$2,378,000	$1,783,000	$594,000
Dredging and Disposal[1]	$6,687,000	$5,015,000	$1,672,000
Turbidity and Endangered Species Monitoring	$451,000	$338,000	$113,000
Bank Stabilization, Dikes & Jetties (Reconfigured Training Wall)	$19,299,000	$14,474,000	$4,825,000
Environmental Mitigation	$3,088,000	$2,316,000	$772,000
Salt Marsh Mitigation	$1,592,000	$1,194,000	$398,000
Oyster Bed Mitigation	$565,000	$424,000	$141,000
Biological Survey	$488,000	$366,000	$122,000
Mitigation Monitoring	$443,000	$332,000	$111,000
Planning, Engineering, and Design	$2,087,000	$1,565,000	$522,000
Construction Management (S&I)	$1,910,000	$1,433,000	$478,000
Subtotal Construction of GNF	$35,900,000	$26,924,000	$8,976,000
Lands and Damages.	$99,000	$74,000	$25,000
Total Project First Costs	$35,999,000	$26,998,000	$9,001,000
Aids to Navigation[2]	$431,000	$431,000	$0
Credit for non-Federal LERR[3]	-	$13,000	($13,000)
10% GNF Non-Federal[4]	-	($3,590,000)	$3,590,000
Total Cost Allocation	$36,430,000	$23,852,000	$12,578,000
AAEQ Benefits			$2,440,000
AAEQ Costs			$1,737,000
AAEQ Net Benefits			$703,000
Benefit-to-Cost Ratio (BCR)			1.40

1. Includes Pipeline Dredging Cost.

2. Navigation Aids - 100% Federal

3. Real Estate Costs: Credit is given for the incidental costs borne by the non-Federal sponsor for lands, easments, rights of way and relocations per Section 101 of WRDA 86. The Federal real estate acquisition/ incidental costs include the project real estate planning, review, and incidental (license) costs between the Navy and the USACE.

4. The Non-Federal Sponsor shall pay an additional 10% of the costs of GNF, pursuant to Section 101 of WRDA 86. The value of LERR shall be credited toward the additional 10% payment.

6.8.3 Financial Analysis of Non-federal Sponsor's Capabilities

The Non-federal sponsor, Jacksonville Port Authority, has accepted the financial responsibility as it pertains to the rules as stated above.

6.8.4 View of the Non-federal Sponsor

The Jacksonville Port Authority greatly supports this project both financially through cost sharing and legislatively through the project authorization.

6.9 ENVIRONMENTAL OPERATING PRINCIPLES

The USACE Environmental Operating Principles (EOP's) were considered during each step of the plan formulation process. Scoping letters were sent out in 2004 and 2008 to stakeholders soliciting views and comments regarding environmental and cultural resources, study objectives, and important features within the study area. A Notice of Availability for the Draft Integrated Feasibility Study and Environmental Assessment was mailed to interested parties on July 7, 2011. Copies of the draft report was made available in selected libraries within the study area and placed on the District website, along with other pertinent study documents. A public workshop was held on August 15, 2011. Taking into consideration the views expressed by all the stakeholders, and in conformity with the EOPs, the PDT selected a plan which provides the best balance of environmental sustainability and national economic development benefits. Some of these principles are presented below.

Environmental monitoring over a period of five years will help insure the sustainability of the restoration site. The USACE will be ultimately responsible for ensuring that the final success criteria are met, and will take corrective actions as necessary. If deemed necessary by the USACE, any corrective actions may be monitored for at least five years from the time they were implemented. Monitoring includes stability, hydrology, vegetation, photography, and annual reports of the Great Marsh Island restoration site. The FIC will be monitored for up to 5 years. If corrective action is needed to maintain the channel's depth, it will be implemented.

6.10 USACE CAMPAIGN PLAN

USACE Vision – A great engineering force of highly disciplined people working with our partners through disciplined thought and action to deliver innovative and sustainable solutions to the Nation's engineering challenges.

USACE Mission – Provide public engineering services in peace and war to strengthen our Nation's security, energize the economy, and reduce risks from disasters.

Commander's Intent – The USACE will be one disciplined team, in thought, word, and action. We will meet our commitments, with and through our partners, by saying what we will do and doing what we will say. The USACE will, through execution of this Campaign Plan, become a GREAT organization as evidenced by the following in all mission areas: delivering superior performance; setting the

standard for the profession; making a positive impact on the Nation and other nations; and being built to last by having a strong "bench" of educated, trained, competent, experienced, and certified professionals.

The recommended plan for this project is consistent with these themes. The project team took the latest policy and planning guidance and worked with professionals familiar with the local system to design a project that will work in tandem with adjacent projects to help provide safe, effective, and efficient navigation. Extensive reviews were performed to ensure quality and consistency. The team worked with stakeholders on the state and Federal level as well as local stakeholders.

7.0 ENVIRONMENTAL CONSEQUENCES*

7.1 General Environmental Effects

7.1.1 No Action Alternative

Difficult crosscurrents would persist at the confluence of the St. Johns River and IWW, and the Mile Point shoreline may continue to be vulnerable to erosion. Erosion would also continue at nearby Great Marsh Island, and additional salt marsh would be lost. Salt marsh restoration at the island would not occur.

7.1.2 Recommended Plan

The Mile Point training wall would be reconfigured, and this work would affect circulation patterns and current velocities within the study area which should provide navigation benefits and reduce erosion along Mile Point (refer to Appendix A: Engineering Design and Cost Estimates for more information). However, significant adverse impacts to the estuarine environment caused by these changes are not anticipated. Further erosion of Great Marsh Island would be prevented by construction of the West leg of the training wall just north of the island. Impacts to salt marsh within the project footprint would be mitigated by restoring salt marsh at Great Marsh Island. The proposed Chicopit Bay Flow Improvement Channel would increase flushing potential of silt and other waterborne constituents from the bay and provide deeper water habitat.

7.2 Threatened and Endangered Species

7.2.1 No Action Alternative

There would be no effect to threatened and endangered species if the no action alternative were selected. However, erosion would continue at nearby Great Marsh Island, and additional salt marsh would be lost which is most likely used by the wood stork. Salt marsh and tidal channel restoration at the island would also not occur if the no action alternative were selected.

7.2.2 Recommended Plan

In compliance with Section 7 of the Endangered Species Act, coordination on the Recommended Plan with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) has been completed. The USFWS by letter dated September 14, 2011 concurred with the USACE determination that the proposed work may affect, but is not likely to adversely affect, the West Indian (Florida) manatee and its designated Critical Habitat, piping plover, and wood stork. The NMFS by letter dated July 13, 2011 also concurred with the USACE determination that the project may affect, but is not likely to adversely affect sea turtles, short-nosed sturgeon, and the smalltooth sawfish.

7.2.2.1 Florida Manatee

In accordance with the USFWS consultation letter, standard protective measures would be taken during all in-water work to insure the safety of manatees. To make the contractor and his personnel aware of the potential presence of this species in the project area, their endangered status, and the need for precautionary measures, the contract specifications would include the following standard manatee protection clauses:

- The contractor would instruct all personnel associated with construction activities about the potential presence of manatees in the area and the need to avoid collisions with them.

- If siltation barriers are used, they shall be made of material in which manatees cannot become entangled, are properly secured, and are regularly monitored to avoid manatee entrapment. Barriers must not block manatee entry to or exit from essential habitat.

- If a manatee were sighted within 100 yards of the project area, all appropriate precautions would be implemented by the contractor to ensure protection of the manatee. These precautions would include the operation of all moving equipment no closer than 50 feet of a manatee. If a manatee were closer than 50 feet to moving equipment or the project area, the equipment would be shut down and all construction activities would cease to ensure protection of the manatee. Construction activities would not resume until the manatee has departed the project area.

- All vessels associated with the project would operate at 'no wake' speeds at all times while in shallow waters or channels where the draft of the boat provides less than three feet clearance from the bottom. Boats used to transport personnel would be shallow draft vessels, preferably of the light-displacement category, where navigational safety permits. Vessels transporting personnel between the landing and any workboat would follow routes of deep water to the greatest possible extent. Shore crews would use upland road access if available.

- Mooring bumpers would be placed on all large vessels wherever and whenever there is a potential for manatees to be crushed between two moored vessels. The bumpers would provide a minimum stand-off distance of four feet.

- All personnel would be advised that there are civil and criminal penalties for harming, harassing, or killing manatees, which are protected under the Endangered Species Act and the Marine Mammal Protection Act.

In addition to the standard protective measures, and in accordance with the USFWS consultation letter, the following measures would also be implemented:

• All in-water work associated with the removal and/or replacement of boulders or other structures (i.e. concrete structure units, geo-tubes, water dams, etc.) shall be restricted to daylight hours only. Daylight hours shall be defined as that period between one-half hour after sunrise to one-half hour before sunset.

• A dedicated manatee observer shall be present for all in-water work associated with the removal and/or replacement of boulders or other structures (i.e. concrete structure units, geo-tubes, water dams, etc.). The observer shall be equipped with polarized sunglasses and binoculars.

• In the event that a mechanical dredge is used, then an additional one to two dedicated observers shall be assigned to this work.

• All observers shall be experienced in manatee observation as described in the manatee observer guidelines developed by the Florida Fish and Wildlife Conservation Commission. The observer's qualifications shall be sent to the USFWS for review and concurrence prior to the commencement of the in-water work.

• The size of openings within concrete structure units, if used, shall be no more than 8 inches in diameter, and/or the grating of openings larger than 8 inches.

• The Great Salt Marsh Island restoration enclosure, which includes the training wall and southern boundary structures, shall be constructed to elevations that would preclude manatees from swimming over the top of the training wall/boundary structures into the enclosure during monthly flood tides.

• An inspection of the enclosure shall be conducted just prior to final closure from the bay and/or river to insure no manatees are present within the enclosure. In the event of manatee presence within the enclosure, the animal(s) must be allowed to leave it of its (their) own volition, prior to proceeding with final construction.

• An additional inspection of the enclosure shall be conducted following its closing to insure no manatees are trapped within it. In the event that one or more animals are observed within the enclosure, all work related to the enclosure must cease immediately. The contractor shall immediately notify the USACE, and the USACE shall then immediately notify the US Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FWC).

• In the event take of a manatee occurs as a result of the project, the USACE shall immediately discontinue work and contact the USFWS and FWC.

7.2.2.2 Piping Plover

The proposed project would not impact the mud flats located to the south-southeast of Helen Cooper Floyd Park, which are possibly used by wintering piping plovers, but the work would eliminate approximately 2,800 feet of shoreline at the park. The plover may occasionally forage along the park's shoreline, but it has not been observed on multiple site visits during the fall and winter months.

7.2.2.3 Wood Stork

Reconfiguration of the Mile Point training wall would impact 8.15 acres of salt marsh and 0.30 acres of tidal channel. It is very likely that the wood stork occasionally forages within these habitats. The proposed restoration of up to 53 acres of salt marsh and 1.6 acres of tidal channels at nearby Great Marsh Island would more than offset these losses. The USACE shall continue to coordinate with the USFWS to insure that the final plan for salt marsh and tidal channel restoration adequately compensates for the expected impacts to suitable wood stork foraging habitat.

7.2.2.4 Sea Turtles, Shortnose Sturgeon, and Smalltooth Sawfish

Since a cutter suction pipeline dredge or a backhoe are anticipated to be used for this project, adverse impacts or "takings" of sea turtles, shortnose sturgeon, and smalltooth sawfish within the proposed work area would not be anticipated. These types of equipment do not pose a risk to these species like hopper dredges do. Dredged material would not be placed on any beaches where sea turtles nest. All of the dredged material generated by this project would be placed within the salt marsh restoration area at Great Marsh Island. In accordance with the NMFS consultation letter, the following Sea Turtle and Smalltooth Sawfish Construction Conditions would be implemented:

- The contractor shall instruct all personnel associated with the project of the potential presence of these species and the need to avoid collisions with sea turtles and smalltooth sawfish. All construction personnel are responsible for observing water-related activities for the presence of these species.

- The contractor shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing sea turtles or smalltooth sawfish, which are protected under the Endangered Species Act of 1973.

- Siltation barriers shall be made of material in which a sea turtle or smalltooth sawfish cannot become entangled, be properly secured, and be regularly monitored to avoid protected species entrapment.

- All vessels associated with the construction project shall operate at "no wake/idle" speeds at all times while in the construction area and while in water depths where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will preferentially follow deep-water routes (e.g., marked channels) whenever possible.

- If a sea turtle or smalltooth sawfish is seen within 100 yards of the active daily construction/dredging operation or vessel movement, all appropriate precautions shall be implemented to ensure its protection. These precautions shall include cessation of operation of any moving equipment closer than 50 feet of a sea turtle, smalltooth sawfish, or shortnose sturgeon. Operation of any mechanical construction equipment shall cease immediately if a sea turtle, smalltooth sawfish, or shortnose sturgeon is seen within a 50-foot radius of the equipment. Activities may not resume until the protected species has departed the project area of its own volition.

- Any collision with and/or injury to a sea turtle or smalltooth sawfish shall be reported immediately to the National Marine Fisheries Service Protected Resources Division (727-824-5312) and the local authorized sea turtle stranding/rescue organization.

7.3 Essential Fish Habitat (EFH)

7.3.1 No action Alternative

There would be no effect to EFH within the project footprint if the no action alternative were selected. However, erosion at Great Marsh Island would continue, and additional salt marsh would be lost. Restoration of salt marsh at Great Marsh Island would not occur.

7.3.2 Recommended Plan

Reconfiguration of the training wall is the only evaluated alternative that redirects currents in a way that provides the desired navigation and Mile Point shoreline protection benefits. Impacts to Essential Fish Habitat within the proposed reconfiguration footprint would be unavoidable. However, the USACE has determined that the work would not have a substantial adverse impact on EFH or federally managed fisheries along the eastern coast of Florida. This determination was based on the fact that project related impacts to salt marsh would be fully mitigated. The proposed restoration of Great Marsh Island should provide a significant net increase in salt marsh functions and values. Impacts to the water column would occur during dredging operations, but these effects should be temporary. Coordination with the National Marine Fisheries Service is on-going. Please refer to Appendix D: Mitigation Plan and Incremental Analysis and Appendix A: Engineering Design and Cost Estimates for more information on the planned restoration work.

7.3.2.1 Salt Marsh Impacts

The proposed reconfiguration of the training wall would impact 8.15 acres of low and high salt marsh at Helen Cooper Floyd Park, which has been identified as a habitat of particular concern per EFH criteria. More specifically, the project would impact a fringe salt marsh (2.05 acres) which has developed between the training wall and the north shore of the park as well as a substantially larger area of higher quality marsh (6.10 acres) along the south shore of the park. The low marsh is generally dominated by salt marsh cord grass (*Spartina alterniflora*) transitioning in slightly elevated areas to high marsh species such as sea oxeye (*Borrichia spp.*) and salt grass (*Distichlis spicata*). A tidal channel also occurs within the marsh along the southern shore of the park and within the project footprint. Using the Uniform Mitigation Assessment Method, the USACE has determined that approximately 18.84 acres of mitigation would be required to offset this loss. The mitigation would be performed by restoring salt marsh which historically occurred at nearby Great Marsh Island. However, as a beneficial use of dredged material, the USACE proposes to restore the entire eroded breakthrough at the island, which is an estimated approximate 53 acres of salt marsh. This would provide 34.16 acres of restored salt marsh in addition to the required 18.84 acres of mitigation. The proposed west leg of the training wall should help prevent future erosion of salt marsh at the island.

7.3.2.2 Water Circulation Impacts

Restoration of Great Marsh Island would close the existing northern connection between Chicopit Bay and the St. Johns River. This connection was created by the erosion and loss of salt marsh in the 1990s. Shoaling within the bay has also decreased the amount of flow or flushing effect coming from the east, or from the bay's historic connection with the IWW. Therefore, as mitigation for this impact, the USACE proposes to construct a Flow Improvement Channel within Chicopit Bay, which should improve the flushing of silt and other waterborne constituents through the bay as well as provide deeper water Essential Fish Habitat. The channel would be constructed from the IWW, through the shoal within the bay, and ending at the mouth of Mt. Pleasant Creek. The Flow Improvement Channel would be constructed to a depth of -6 feet MLW plus 1-foot of allowable overdepth to account for the inaccuracies of dredging. The channel will be 80 feet in width and approximately 3,620 feet in length. According to NOAA navigation charts (1993), Chicopit Bay had depths as great as 9 feet, but depths in this area have greatly decreased over subsequent years due to shoaling. Dredged material from the Flow Improvement Channel would be used to restore salt marsh at Great Marsh Island. It is believed that much of the bay's shoal material originated from the island.

7.3.2.3 Water Column and Substrate Impacts

Dredging of the project footprint would impact an estimated 109 acres of estuarine water column with an unconsolidated bottom. Turbidity would affect the vision of marine life within the sediment plume as well as those marine organisms with gills, but these effects would be temporary as they would be limited to the actual dredging and placement operations. Benthic organisms would also be impacted. However, long-term suppression of benthos is not anticipated because the project footprint would not be maintenance dredged on a regular basis.

7.4 Shellfish and Wildlife Resources

7.4.1 No action Alternative

There would be no effect to shellfish and other wildlife resources within the proposed project footprint if the no action alternative were selected. However, erosion would continue at nearby Great Marsh Island, and additional salt marsh would be lost. Salt marsh restoration at the island would not occur. This would affect shellfish and wildlife resources other than EFH and federally protected species.

7.4.2 Recommended Plan

7.4.2.1 Shellfish and Marine Wildlife Resources

Site inspections at low tide indicate that oyster habitat does occur within the project footprint. Oysters appear to be primarily restricted to the inter-tidal edge of the existing training wall (0.56 acres) and the tidal channel found within the salt marsh along the south shoreline of Helen Cooper Floyd Park (0.30 acres), total of 0.86 acres. However, the highest oyster densities have been observed just east of the project footprint, on the mudflats, and this area should not be impacted by the proposed work. Loss of oyster habitat shall be offset by creating intertidal habitat along the west leg of the new training wall (0.76 acres) and reconfiguration of the east leg training wall (0.37 acres), total of 1.13 acres. The loss would also be offset by the construction of tidal channels within the restoration area at Great Marsh Island (in excess of 1.6 acres). Oyster shell would be placed intermittently along the bottom of constructed tidal channels in order to provide hard substrate for oyster colonization. After consulting with the Florida Division of Aquaculture, the USACE believes that colonization should be fairly rapid and seeding the area with live oysters would not be necessary. Other species, including a variety of mollusks besides oysters, arthropods, sponges, polyps, and wading birds should benefit from the restoration of Great Marsh Island. Please refer to Appendix D: Mitigation Plan and Incremental Analysis and

Appendix A: Engineering Design and Cost Estimates for more information on the proposed restoration work.

7.4.2.2 Terrestrial (Upland) Wildlife Resources

The proposed work would result in the loss of an estimated four acres of upland habitat within the western portion of Helen Cooper Floyd Park. As previously stated, the entire park area was created by side-casting dredged material from the Federal channel along the southern side of the training wall during the early 1900s. The uplands are dominated by sabal palm, various grasses, cacti, and shrubs. Some species of migratory birds, especially common passerines, are likely to nest here; therefore, this area would be monitored for nesting species from April 1 through August 30 in order to avoid the taking of migratory birds, per the Migratory Bird Treaty Act. Small mammals and a few terrestrial species of reptiles are also likely to occur within the upland habitat of the study area. The vast majority of uplands within the park would not be affected by the project. The proposed work would also impact approximately 0.25 acres of low dunes or coastal strand habitat, which is vegetated by sea oats, railroad vine, and other native plant species. In accordance with the U.S. Fish and Wildlife Service request, the USACE shall create a minimum of 0.25 acres of coastal strand habitat at the Great Marsh Island Restoration Site

7.5 Cultural Resources

7.5.1 No action Alternative

The existing conditions have resulted in substantial erosion and loss of the Great Marsh Island which has exposed the prehistoric site. This erosion is expected to continue with an eventual loss of the archeological site.

7.5.2 Recommended Plan

This alternative will have minimal effect on the archeological site. The effect will be similar to past conditions and will provide protection from ongoing and potential future erosion. As such the effect will not be adverse.

7.6 Water Quality

7.6.1 No action Alternative

There would be no effect to water quality if the proposed work was not performed.

7.6.2 Recommended Plan

Reconfiguration of the training wall would affect water circulation patterns and current velocities, but significant impacts to water quality caused by these changes are not anticipated. To offset any adverse effects that would be caused by closing off the breakthrough of Great Marsh Island, a Flow Improvement Channel (FIC) would be constructed within the historical flow way in the southeast portion of Chicopit Bay. This feature would allow flushing of sediment and other waterborne constituents into the adjacent Intracoastal Waterway. If Great Marsh Island is restored and the FIC is not built, then water quality is expected to degrade within Chicopit Bay (approximately 164 acres) due to non-point source pollution loadings from the upstream watershed not being flushed out of the hydrological system. Water quality within Mt. Pleasant Creek (approximately 3.4 stream miles) and Greenfield Creek (approximately 3 stream miles), which flow into Chicopit Bay, may also be adversely affected.

The primary anticipated change in water quality during construction would be a temporary increase in turbidity during construction. According to the State of Florida's water quality standards, turbidity levels during dredging or placement of dredged material are not to exceed 29 nephelometric turbidity units (NTUs) above background levels at the edge of normally a 150-meter mixing zone. In order to comply with this standard, turbidity will be monitored according to state protocols during the proposed dredge work. If at any time the turbidity standard were exceeded, those activities causing the violation would cease. The project footprint lies to the south of the Nassau River St. Johns River Marshes Aquatic Preserve. However, water quality impacts within the preserve are not anticipated.

Restoration of this area provides an opportunity to address other impacts caused by the physical decay of the ecosystem such as shoaling in Chicopit Bay. Without the project, Great Marsh Island will continue to erode. The channel would allow for improved water quality and environmental stability of the project area by potentially improving the flushing of sediment and other waterborne constituents through the bay as well as provide deeper water for Essential Fish Habitat. The construction of the FIC would 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 feet wide and 6 feet deep for a length of approximately 3,620 feet through Western Chicopit Bay. Dredged material from the FIC would be placed back into the Great Marsh Island restoration area. The Recommended Plan provides NED benefits from alleviating the navigation restrictions, incidental environmental benefits from restoring Great Marsh Island, and incidental erosion benefits from reducing the effects of the crosscurrents on the adjacent shoreline.

7.7 Air Quality

7.7.1 No action Alternative

There would be no effect to air quality if the proposed work was not performed.

7.7.2 Recommended Plan

No air quality permits would be required for this project. Exhaust emissions from labor transport and dredge equipment would likely be well under the de minimus levels for criteria air pollutants. The proposed action may result in small, localized, temporary increases in concentrations of NO2, SO2, CO, VOC, and PM. Since the project is located in an attainment area, there is no requirement to prepare a conformity determination. The total increases are relatively minor in context of the existing point and nonpoint and mobile source emissions in Duval County. Emissions from the proposed action would not adversely impact air quality given the relatively low level of emissions and the likelihood for prevailing offshore winds. With the proposed action, the criteria pollutant levels would be well within the national ambient air quality standards. The contract specifications would require the contractor to minimize pollution of air resources such as controlling particulates, i.e. dust, or excess machinery emissions. This project shall be coordinated with the U.S. Environmental Protection Agency and the Florida Department of Environmental Protection.

7.8 Hazardous, Toxic, and Radioactive Waste (HTRW)

7.8.1 No action Alternative

There are no known sources of HTRW within the study area.

7.8.2 Recommended Plan

There are no known sources of HTRW within the study area. However, appropriate assessment and coordination would be performed in the unlikely event that HTRW is discovered during the construction of the project.

7.9 Recreation

7.9.1 No action Alternative

There would be no effect to recreation if the no action alternative were selected.

7.9.2 Recommended Plan

Recreational boat traffic from Mt. Pleasant Creek has historically accessed the IWW and the St. Johns River by proceeding east through Chicopit Bay. The

erosion of Great Marsh Island in the 1990's opened a new channel which currently allows recreational boats from the creek to access the river by going north. At the same time the island was eroding, Chicopit Bay was shoaling which has made it very difficult for small boats to go east and access the IWW and the river like they used to. The restoration of Great Marsh Island would close the new channel. However, the proposed Chicopit Bay Flow Improvement Channel would help reestablish the historical depths of the bay and should make it possible for recreational boats from Mt. Pleasant Creek to access the IWW as well as the river.

7.10 Aesthetics

7.10.1 No action Alternative

There would be no effect to aesthetics if the no action alternative were selected.

7.10.2 Recommended Plan

Construction activities within the project area would temporarily impact the aesthetics of the area. The proposed restoration would result in additional salt marsh.

7.11 Noise

7.11.1 No action Alternative

There would be no effect to noise levels if the no action alternative were selected.

7.11.2 Recommended Plan

Construction activity would result in a minor short term increase over the existing background level. As previously stated, the U.S. Environmental Protection Agency (EPA) has established that construction noise resulting in an hourly equivalent sound level of 75 dBA at a sensitive receptor (e.g., hospital, residence, church) would represent a significant impact. During operation, heavy equipment and other construction activities generate noise levels ranging typically from 70 to 90 dBA at a distance of 50 ft. That portion of the study area where construction would occur is located within or adjacent to Helen Cooper Floyd Park and Great Marsh Island. These locations are over 2,000 feet from the nearest development, i.e. residential or commercially zoned properties. Based on this, significant impacts to sensitive receptor sites are not anticipated, and it is likely that noise emanating from construction activities would not be noticeable in residential or commercially zoned properties.

7.12 Socio-economics

7.12.1 No action Alternative

There would be a long-term adverse impact to the Port of Jacksonville and commercial shipping interests, as well as the local, regional and statewide economies, if the proposed work was not performed.

7.12.2 Recommended Plan

The Port of Jacksonville and commercial shipping interests would benefit if the proposed work was performed. It is important to note that this project would also benefit many businesses, both locally and around the state, that depend on the Port for the transport of commodities. Residents along the Mile Point shoreline should also benefit due to reduced erosion.

7.13 Navigation

7.13.1 No action Alternative

There would be a long-term adverse impact to navigation if the no action alternative were selected. The difficult crosscurrents at the confluence of the IWW and the St. Johns River would remain. The current restriction on deep draft vessels, drafting 33 feet or more, navigating through the Mile Point area during flood tide only would not be removed.

7.13.2 Recommended Plan

There would be a long-term benefit to navigation if the proposed work were performed. The difficult crosscurrents at the confluence of the IWW and the St. Johns River would be redirected. The current restriction on deep draft vessels, drafting 33 feet or more, navigating through the Mile Point area during flood tide only could be removed.

7.14 Cumulative Impacts

Cumulative impact is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). **Table 16** summarizes the impact of such cumulative actions by identifying the past, present, and reasonably foreseeable future condition of the various resources which are directly or indirectly impacted by the proposed action and its alternatives. The table also illustrates the with-project and without-project condition (the difference being the incremental impact of the project).

The timeline for this cumulative impacts analysis is from the 1890's, which is immediately prior to construction of the Mile Point Training Wall, to the present. The analysis is spatially restricted to the lower St. Johns River and the adjacent shoreline, with emphasis on the study area.

TABLE 16: SUMMARY OF CUMULATIVE IMPACTS

	Past	Present	Future without-project	Future with-project
General Environment	Numerous physical changes including shoreline development and channel modifications. Extensive loss or degradation of aquatic and upland habitats.	High percentage of shoreline built-out, but infra-structure changing. Channel modifications include deepening. Significant adjacent habitat now preserved, but still threatened.	Shoreline infra-structure changes would continue as well as channel modifications such as deepening. Restoration of Great Marsh Island would not occur.	Cumulative adverse impacts to the general environment caused by the proposed work in combination with other actions may occur, but protective regulations should reduce impacts. Restoration of Great Marsh Island would have a positive impact.
Threatened and Endangered Species	Extensive loss or degradation of habitat. Mortalities increase with increasing recreational boat traffic and construction activities.	Significant adjacent habitat now preserved, but still threatened. Protective regulations have been instituted and have decreased mortalities and helped to conserve existing habitat.	Cumulative adverse impacts caused by increases in recreational boat and ship traffic, changes in shoreline infra-structure, and other actions may occur. However, protective regulations should reduce the risk of these actions having a significant adverse effect. Restoration of Great Marsh Island would not occur.	The proposed work in combination with other actions may adversely impact protected species. However, protective regulations should reduce the risk of these actions having a significant adverse effect. Restoration of Great Marsh Island would have a positive impact.
Essential Fish Habitat (EFH)	Extensive loss of salt marsh and other wetlands due to shoreline development. Water column adversely affected by changes in water quality.	Loss of wetland functions have declined due to mitigation requirements. Significant salt marsh and other wetlands now preserved, but still threatened. Current water quality regulations have improved water column habitat.	Cumulative adverse impacts caused by water pollution occurring throughout the watershed and physical changes may occur. Protective regulations should reduce impacts. Restoration of Great Marsh Island would not occur.	The proposed work in combination with other actions may adversely impact EFH. However, protective regulations should reduce the risk of these actions having a significant adverse effect. Restoration of Great Marsh Island and construction of the Chicopit Bay Flow Improvement Channel would provide substantial EFH benefits.

Table 16 continued

	Past	Present	Future without-project	Future with-project
Shellfish and Wildlife Resources	Extensive loss or degradation of habitat.	Significant adjacent habitat now preserved, but still threatened. Protective regulations help to conserve these resources.	Cumulative adverse impacts caused by water pollution and other types of habitat degradation may occur. However, protective regulations should reduce impacts. Restoration of Great Marsh Island would not occur.	The proposed work in combination with other actions may adversely impact shellfish and other wildlife resources. However, protective regulations should reduce the risk of these actions having a significant adverse effect. Restoration of Great Marsh Island and construction of the Chicopit Bay Flow Improvement Channel would provide substantial benefits.
Cultural Resources	A prehistoric site has been identified, but past and present effects have not been evaluated	A prehistoric site has been identified, but past and present effects have not been evaluated	Continued erosion at Great Marsh Island would have an adverse effect.	No adverse effect.
Water Quality	Historically, point and non-point sources of water pollution have adversely impacted water quality.	Federal laws and state statutes have significantly improved water quality.	Cumulative adverse impacts caused by runoff and other discharges may occur, but protective regulations should continue to reduce impacts.	The proposed work in combination with other actions may adversely affect water quality, but protective regulations should continue to reduce impacts.
Air Quality	Location, weather patterns, and a lack of heavy industry have contributed to generally good air quality.	Florida is in attainment with all air quality standards.	Local cumulative emissions are not expected to significantly change.	The proposed work in combination with other actions is not expected to significantly change local emissions.
Hazardous, Toxic, and Radioactive Waste (HTRW)	HTRW may be associated with some industrial sites.	HTRW sites have mostly been identified and have been remediated or are being studied for possible future remediation.	Remediation of HTRW sites are expected to continue.	The proposed work in combination with other activities is not expected to contribute to additional HTRW or interfere with remediation efforts.

Table 16 continued

	Past	Present	Future without-project	Future with-project
Recreation	Recreational use and associated impacts have increased over time.	High recreational use including boating, fishing, and use of adjacent public lands.	High recreational use is expected to continue.	The proposed work in combination with other actions should not adversely impact recreation. The Chicopit Bay Flow Improvement Channel would be a benefit to recreational boaters.
Aesthetics	Development of shoreline affected local aesthetics.	Shoreline is mostly built out, but infra-structure is changing. Significant areas of salt marsh, tidal creeks, and coastal hammock have been preserved.	Significant cumulative impacts to local aesthetics are not anticipated.	The proposed work in combination with other actions should not significantly impact local aesthetics.
Noise	Development has minimally increased ambient noise levels.	Current noise levels generally appear to be minimal, with the exception of some local construction and military aircraft.	Significant increases to noise levels are not anticipated.	The proposed work in combination with other actions should not significantly increase noise levels.
Socio Economics	Development of the Port and adjacent areas created a positive economic stimulus.	Port continues to provide a significant economic stimulus.	Port would continue to provide a significant economic stimulus. However, navigation restriction would continue at Mile Point.	The proposed work in combination with other planned projects should provide significant benefits to the Port and surrounding community.
Navigation	Construction of federal navigation channels provided access for deep draft vessels to Port of Jacksonville.	Deepening of federal channels and maintenance dredging continues to provide safe navigation for deep draft vessels.	Deepening and maintenance dredging projects would continue.	The proposed work in combination with other planned actions should provide significant navigation benefits.

7.14.1 General Environment

The lower St. Johns River (LSJR) flows through the City of Jacksonville and provides deep draft vessels access to the Port of Jacksonville. Population growth and commercial development along this portion of the river has resulted in the extensive loss of wetland systems and upland habitats (Dennis et al 2001, FDEP 2002, UNF and JU 2008). It is difficult to quantify the wetland impacts due to a lack of conclusive records (UNF and JU 2008). However, a review of

historical aerials and maps suggests that wetland losses were indeed considerable. Still, the Federal, state, and local governments have been successful in purchasing significant tracts of remaining wetlands and uplands. The most notable perhaps is the Timucuan Ecological and Historic Preserve which is managed by the National Park Service, and contains approximately 46,000 acres.

Except for protected areas, the LSJR shoreline has been mostly built out within the city limits of Jacksonville. Changes in infrastructure such as conversion of older housing to more upscale communities and construction of more modern port facilities are ongoing. These changes as well as deepening of the Federal system of navigation channels within the port may have the most significant future cumulative impacts on the general environment within this portion of the LSJR. Conversely, deepening may result in a decrease in total vessel call traffic compared to without-project conditions. More specifically, deepening will likely lead to some reduction in dry bulk cargo vessel calls. The case for container ships is more conjectural based on vessel deployment itineraries and other ports called. The proposed restoration of Great Marsh Island would provide substantial wetland benefits. Protective Federal laws, such as the Clean Water Act of 1972, as well as state statutes shall regulate any future construction activities and should help protect remaining resources.

7.14.2 Threatened and Endangered Species

Loss and degradation of habitat along the LSJR and other regions of the state is generally considered to be one of the most important factors affecting threatened and endangered species (O'Shea and Ludlow 1992, Gilbert 1992, UNF and JU 2008). Deaths and injuries of manatees resulting from boat strikes have also been significant (JU 2007). However, according to a study by the University of North Florida and Jacksonville University (2008), a comparison of two time periods (1980-93) and (1994-07) indicated a four percent decrease of manatee mortalities from collisions with watercraft in the LSJR. Future increases in recreational boat traffic may reverse this trend.

According to data collected by the USACE, sea turtle mortalities caused by hopper dredges, which are frequently used within the LSJR, were once much higher than they currently are. The development of a sea turtle deflector which is mounted on the drag arm of the hopper dredge, operational windows which prohibit the use of a hopper dredge during times of the year when sea turtles are present in greater numbers, and take limits established by the NOAA Fisheries Service have all combined to reduce sea turtle mortalities within the LSJR.

Protective Federal laws, such as the Endangered Species Act and Marine Mammal Protection Act, state legislation, and partnerships to better refine existing protective measures should help conserve these species. Restoration

efforts, such as the proposed restoration of Great Marsh Island, and preservation of remaining habitat would also benefit protected species.

7.14.3 Essential Fish Habitat (EFH)

According to Dennis et al (2001), the estuarine environment of the LSJR supports the "last great salt marsh area along the eastern United States coast." It is well documented that salt marsh, and other types of wetlands, are vital to fish populations because they provide shelter, food, spawning and nursery areas, as well as water filtration (Mathews and Minello 1994; USGS 1996, Graff and Middleton 2001). In recognition of its value to federally managed fisheries, NOAA has also designated salt marsh as a "habitat of particular concern". However, over the years, urban development within the City of Jacksonville has resulted in the extensive loss or degradation of salt marsh along the LSJR (Dennis et al 2001; UNF and JU 2008). The regulation of wetlands, like salt marsh, and requisite mitigation for impacts, has resulted in fewer lost wetland functions and values.

In addition to salt marsh impacts, the water column of the river has also been adversely affected by agricultural and urban runoff, as well as point sources discharges (UNF and JU 2008). These negative trends began to slow with the enactment of Federal legislation, such as the U.S. Clean Water Act of 1972, and state statutes which established water quality criteria and provided for the regulation of wetlands with the objective of no net loss of wetland functions. One of the most successful environmental protection programs which have improved water quality is the National Pollutant Discharge Elimination System, which regulates point source dischargers like sewage treatment plants. Recent establishment of Total Maximum Daily Loads (TMDL) of pollutants should further improve water column and substrate habitats.

Deepening and maintenance dredging of the Port of Jacksonville, as well as the proposed training wall reconfiguration, in combination with runoff and point source discharges can have a cumulative adverse impact on EFH. However, the efforts to regulate water quality described above and preservation of wetlands, such as the establishment of the Timucuan Ecological and Historical Preserve, and restoration of impacted wetlands have combined to improve EFH.
A review of fisheries studies conducted within the LSJR indicates that it is not possible to determine accurate long-term trends in federally managed fisheries or prey species based on the data collected. The University of North Florida and Jacksonville University (2008) found that many of the species reported in the LSJR by researchers in the 1960s are still present today. However, the studies used different sampling methodologies so it is unclear whether numbers of individual species have changed over this time period. In more recent years, recreational landings and research sampling indicates that stocks for red drum and spotted seatrout appear to be stable in northeast Florida, including the LSJR (FWC 2007; UNF and JU 2008).

Existing protective laws, including fishing regulations, as well as refinement and implementation of water quality initiatives like the TMDL program, and continued regulation, preservation and restoration of wetlands should result in a continued positive trend for EFH and federally managed fisheries.

7.14.4 Shellfish and Wildlife Resources

The loss of wetlands and upland habitats and changes in water quality has cumulatively impacted shellfish and other wildlife resources throughout the LSJR. However, the efforts to regulate, restore, and preserve wetlands as well as water quality initiatives should also benefit these resources.

7.14.5 Water Quality

Like many major water bodies flowing through agricultural and urbanized areas, the water quality of the LSJR has been adversely affected by a combination of point and non-point source discharges. The enactment of the U.S. Clean Water Act as well as state statutes has established criteria which have resulted in improved water quality.

Many State and local entities continue to address unresolved water related issues within the LSJR basin. At the forefront of this effort, Jacksonville University and the University of North Florida annually produce the State of the River Report which provides a comprehensive summary of water quality issues affecting the LSJR. In 2008, the universities identified dissolved oxygen, nutrients, turbidity, algal blooms, and bacteria as water quality indicators that are continuing to be tracked. They report that dissolved oxygen levels in shallow water areas and tributaries of the LSJR are low in summer, and are likely to continue to be low until nutrients, sediment and industrial inputs are substantially reduced. Other water quality improvement efforts include the Lower St. Johns River Basin Surface Water and Improvement Management (SWIM) Program administered by the St. Johns River Water Management District and the City of Jacksonville River Accord program.

Continued wastewater treatment improvements, and implementation of best management practices (BMPS) to control runoff from cities, agricultural areas, and homeowners should reduce nutrient loading, bacteria levels and algal blooms. The previously mentioned TMDL program should result in substantial reductions of nutrient levels, and could include specific recommended BMPs like zero or low phosphorus fertilizers for urban lawns within the watershed. The universities further report that turbidity, within the main stem of the LSJR, is currently satisfactory and the trend is one of overall improvement. Cumulatively, construction work like the proposed reconfiguration of the training wall and other dredging projects will produce minor incidental turbidity, but the work shall be

performed in compliance with state water quality criteria and is not expected to alter the current positive trend.

7.14.6 Air Quality

Emissions from past dredging and other sources along the LSJR have not had a significant cumulative effect on air quality, and this trend is expected to continue. Industries like paper mills and power plants do occur within the LSJR basin, but emissions from these facilities are regularly monitored and regulated in order to meet requisite standards. The state of Florida remains in attainment with air quality criteria.

7.14.7 Hazardous, Toxic, and Radioactive Waste (HTRW)

Existing legislation requires strict handling and disposal of HTRW. That being said, most HTRW sites within the LSJR basin are the result of past activities. The proposed project and future construction activities are not expected to have a cumulative impact on existing HTRW sites.

7.14.8 Recreation

Development has had a substantial cumulative impact on outdoor recreational opportunities in many parts of the LSJR basin. However, government entities continue to plan for recreation, as is evidenced by the creation of new parks, bike and footpaths, boat ramps and beach access routes. Improvements in water quality also results in more desirable fishing and other water related recreation. Dredging and other types of construction projects can temporarily impact recreation. Measures shall be taken to insure that projects, like the restoration of Great Marsh Island, in combination with other actions will not result in significant cumulative impacts to recreational boaters or other outdoor activities.

7.14.9 Aesthetics

Population growth and associated development along the LSJR have had a substantial cumulative impact on the aesthetics of this region. New projects, like additional training walls can add to this impact. Nevertheless, large natural areas like the Timucuan Ecological and Historic Preserve have been preserved and provide some regional balance to the innumerable development projects. The proposed restoration of Great Marsh Island should also have a positive impact on local aesthetics, and may offset the construction of the new training walls associated with the project.

7.14.10 Noise

With the exception of certain construction activities, which are temporary, ambient noise levels throughout the LSJR appear to be minimal. This situation is not expected to significantly change with anticipated future activities.

7.14.11 Socio economics

The proposed reconfiguration of the training wall should lift current navigation restrictions and at the same time reduce erosive forces on the Mile Point shoreline. This work in combination with other planned projects designed to improve the Port of Jacksonville should provide significant socio economic benefits to the Port and surrounding community.

7.14.12 Navigation

The proposed work would not only lift current navigation restrictions, but should also reduce navigational hazards by redirecting the difficult crosscurrents. In combination with other planned actions, the reconfiguration of the training wall should provide significant navigation benefits.

7.15 Irreversible and Irretrievable Commitment of Resources

7.15.1 Irreversible

An irreversible commitment of resources is one in which the ability to use and/or enjoy the resource is lost forever. The proposed reconfiguration of the Mile Point Training Wall would result in the loss of 8.15 acres of salt marsh at Helen Cooper Floyd Park, which would be more than offset by the planned restoration of up to 53 acres of salt marsh at Great Marsh Island. The work would also result in the loss of approximately four acres of uplands at the park that are comprised of old dredged material.

7.15.2 Irretrievable

An irretrievable commitment of resources is one in which, due to decisions to manage the resource for another purpose, opportunities to use or enjoy the resource as they presently exist are lost for a period of time. The proposed work would temporarily impact benthos and other biota in the project area. The restoration of Great Marsh Island would close off the current recreational boat channel through this area. This area was formerly salt marsh, but has eroded and become open water. This action may temporarily disrupt recreational boating until the planned Flow Improvement Channel is completed through Chicopit Bay.

7.16 Unavoidable Adverse Environmental Effect

The proposed work would adversely affect EFH, benthic organisms and some upland species. Impacts to EFH and benthic organisms would be offset by the proposed restoration of Great Marsh Island. Protective measures shall be implemented to protect threatened and endangered species during construction activities. Dredging and placement activities would result in turbidity, and these activities shall be monitored per the terms and conditions of the water quality certification.

7.17 Local Short-term Uses and Maintenance/Enhancement of Long-term Productivity

The proposed work is expected to take up to 16 months, and completion of the proposed restoration of Great Marsh Island may take longer. The restored marsh may take up to 4 growing seasons to develop functions comparable to the impacted marsh, but should provide more long-term productivity than the lost marsh. Long-term impacts to benthos within the project footprint are not anticipated as this area would not be maintenance dredged on an annual basis. Most fish species and other motile organisms like crabs should be able to avoid the dredging equipment. Since the project area is limited in size, the long-term productivity of fish and other motile species should not be significantly affected.

7.18 Indirect Effects

Reconfiguration of the Mile Point Training Wall would benefit the Port of Jacksonville, the shipping industry, local and statewide economies. This may encourage expansion of the port, deepening the project channel, and contribute to increased large ship traffic.

7.19 Compatibility with Federal, State, and Local Objectives

This project has wide support and is compatible with Federal, state, and local objectives.

7.20 Uncertain, Unique, or Unknown Risks

There are no uncertain, unique or unknown risks associated with the proposed work.

7.21 Precedent and Principle for Future Actions

As this project involves training wall work similar to previous projects, there would be no precedent and or principle for future actions established.

7.22 Environmental Commitments

The USACE and its contractors commit to avoiding, minimizing or mitigating for adverse effects during construction activities by including the following commitments in the contract specifications:

1. All conditions contained within the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) consultation letters would be implemented (refer to Section 7.2.2).

2. The loss of 8.15 acres of salt marsh at Helen Cooper Floyd Park would be mitigated. In fact, the USACE proposes to restore up to 53 acres of salt marsh, oyster habitat, tidal channels, and coastal strand habitat at Great Marsh Island which would more than offset this loss (see Appendices A and D for more detail).

2. A Flow Improvement Channel (FIC) shall be constructed in Chicopit Bay, which will improve flushing of silt and other waterborne constituents, create deeper water EFH, and provide a small vessel navigation channel (see Appendices A and D for more detail).

3. Protective measures for threatened and endangered species shall be implemented during construction activities as described in Section 7.2.

4. The District's migratory bird protection policy shall be implemented.

5. The work shall be performed in compliance with state water quality statutes.

6. The project footprint shall be surveyed for cultural resources, and, if required, protective measures shall be implemented.

7. Air emissions such as vehicular exhaust and dust shall be controlled.

8. The contracting officer would notify the contractor in writing of any observed noncompliance with Federal, state, or local laws or regulations, permits and other elements of the contractor's Environmental Protection Plan. The contractor would, after receipt of such notice, inform the contracting officer of proposed corrective action and take such action as may be approved. If the contractor fails to comply promptly, the contracting officer would issue an order stopping all or part of the work until satisfactory corrective action has been taken. No time extensions would be granted or costs or damages allowed to the contractor for any such suspension.

9. The contractor would train his personnel in all phases of environmental protection. The training would include methods of detecting and avoiding pollution, familiarization with pollution standards, both statutory and contractual, and installation and care of facilities to insure adequate and continuous

environmental pollution control. Quality control and supervisory personnel would be thoroughly trained in the proper use of monitoring devices and abatement equipment, and would be thoroughly knowledgeable of federal, state, and local laws, regulations, and permits as listed in the Environmental Protection Plan submitted by the contractor.

10. The environmental resources within the project boundaries and those affected outside the limits of permanent work under this contract would be protected during the entire period of this contract. The contractor would confine his activities to areas defined by the drawings and specifications.

11. As stated in the standard contract specifications, a spill prevention plan would also be required.

7.23 Compliance with Environmental Requirements

7.23.1 National Environmental Policy Act of 1969

Environmental information on the project has been compiled and an Environmental Assessment has been prepared. The project is in compliance with the National Environmental Policy Act.

7.23.2 Endangered Species Act of 1973

In accordance with Section 7 of the Endangered Species Act, the USACE has completed informal consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service. The USFWS by letter dated 14 September 2011 concurred with the USACE determination that the proposed work may affect, but is not likely to adversely affect the West Indian (Florida) manatee and its designated Critical Habitat, piping plover, and wood stork. The NMFS by letter dated 13 July 2011 also concurred with the USACE determination that the project may affect, but is not likely to adversely affect sea turtles, short-nosed sturgeon, and the smalltooth sawfish. This project is in full compliance with the act.

7.23.3 Fish and Wildlife Coordination Act (FWCA) of 1958

This project has been coordinated with the U.S. Fish and Wildlife Service (USFWS). A Memorandum for Record, dated 6 September 2011, was jointly prepared by the USFWS and the USACE which states that both agencies agree to utilize the NEPA review and ESA consultation processes to complete coordination responsibilities under the FWCA. This project is in full compliance with the act.

7.23.4 NATIONAL HISTORIC PRESERVATION ACT OF 1966 (INTER ALIA)

Archival research, and consultation with the Florida State Historic Preservation Officer (SHPO), has been completed in accordance with the National Historic Preservation Act, as amended (PD 89-665); the Archeological and Historic Preservation Act, as amended (PD 93-291); and Executive Order 11593. The project is in compliance with each of these Federal laws.

7.23.5 Clean Water Act of 1972

The project will be in compliance with this act. A Section 401 water quality certification will be obtained from the Florida Department of Environmental Protection. All state water quality standards would be met. A Section 404(b) (1) evaluation is included in this report as Appendix F. A public notice has been issued in a manner which satisfies the requirements of Section 404 of the Clean Water Act.

7.23.6 Clean Air Act of 1972

Vehicular emission and airborne dust particulates resulting from construction activities will be controlled. This project has been coordinated with U.S. Environmental Protection Agency (EPA) and will be in compliance with Section 309 of the act. Correspondence from EPA will be placed in Appendix E and discussion of any issues therein can be found in the Public and Agency Involvement section of this statement.

7.23.7 Coastal Zone Management Act of 1972

A federal consistency determination in accordance with 15 CFR 930 Subpart C is included in this report as Appendix G. The Florida State Clearinghouse stated by letter dated September 9, 2011 that based on the information contained in the draft Integrated Feasibility Study and Environmental Assessment the project appears to be consistent with the Florida Coastal Management Program (see Appendix E: Pertinent Correspondence). A final consistency determination would be performed concurrently with the issuance of the state water quality certification (permit).

7.23.8 Farmland Protection Policy Act of 1981

No prime or unique farmland would be impacted by implementation of this project. This act is not applicable.

7.23.9 Wild and Scenic River Act of 1968

No designated Wild and Scenic river reaches would be affected by project related activities. This act is not applicable.

7.23.10 Marine Mammal Protection Act of 1972

Protective measures for marine mammals such as manatees will be implemented. This project has been coordinated with the USFWS and NMFS. The work is in compliance with the act.

7.23.11 Estuary Protection Act of 1968

No designated estuary would be affected by project activities. This act is not applicable.

7.23.12 Federal Water Project Recreation Act

The principles of the Federal Water Project Recreation Act, (Public Law 89-72) as amended, have been fulfilled by complying with the recreation cost sharing criteria as outlined in Section 2 (a), paragraph (2) of the act.

7.23.13 Fishery Conservation and Management Act of 1976

The project is being coordinated with the NMFS and will be in compliance with the act.

7.23.14 Submerged Lands Act of 1953

The project would occur on submerged lands of the State of Florida. The project will be coordinated with the state and will be in compliance with the act.

7.23.15 Coastal Barrier Resources Act and Coastal Barrier Improvement Act of 1990

There are no designated coastal barrier resources that would be affected by this project. These acts are not applicable.

7.23.16 Rivers and Harbors Act of 1899

The proposed work would not obstruct navigable waters of the United States. The proposed action will be subject to the public notice, possible public hearing, and other evaluations normally conducted for activities subject to the act. The project is in full compliance.

7.23.17 Anadromous Fish Conservation Act

Anadromous fish species would not be affected. The project is being coordinated with the National Marine Fisheries Service and will be in compliance with the act.

7.23.18 Migratory Bird Treaty Act and Migratory Bird Conservation Act

Measures will be taken to protect migratory birds, i.e. avoiding nesting sites. The project is in compliance with these acts.

7.23.19 Marine Protection, Research and Sanctuaries Act

The term "dumping" as defined in the Act (3[33 U.S.C. 1402](f)) does not apply to the disposal of material for wetland restoration. Therefore, the Marine Protection, Research and Sanctuaries Act does not apply to this project. The disposal activities addressed in this environmental assessment has been evaluated under Section 404 of the Clean Water Act.

7.23. 20 Magnuson-Stevens Fishery Conservation and Management Act

The USACE has determined that the project would impact 8.15 acres of salt marsh, a habitat of particular concern per Essential Fish Habitat criteria. These impacts would be fully mitigated by restoring salt marsh at Great Marsh Island. In fact, the Corps proposes to restore up to 53 acres of salt marsh which would more than offset this loss. The work would also adversely affect water column habitat, but this should be temporary as the impacts would be limited to construction activities. The proposed work is being coordinated with the NMFS. The project will be in full compliance with the act.

7.23.21 E.O. 11990, Protection of Wetlands

The project would impact 8.15 acres of salt marsh, but this impact would be mitigated. In fact, the Corps proposes to restore up to 53 acres of salt marsh which would more than offset this loss. This project is in compliance with the goals of this Executive Order.

7.23.22 E.O. 11988, Flood Plain Management

This project would have no adverse impacts to flood plain management.

7.23.23 E.O. 12898, Environmental Justice

In accordance with this E.O., the USACE has determined that no group of people would bear a disproportionate share of the environmental consequences resulting from the proposed work. As described in the report, construction activities would occur within navigation channels as well as Helen Cooper Floyd Park and Great Marsh Island which are uninhabited, and are primarily publicly owned properties. The proposed work would result in net navigation and environmental benefits. Stakeholders were sought out that may be affected by the project, and they have participated in decisions about proposed project

activities that may affect their environment and/or health. All stakeholder concerns were considered in the selection of the recommended plan. The Integrated Feasibility Report and Environmental Assessment has been coordinated with the U.S. Environmental Protection Agency, which chairs the Interagency Working Group on environmental justice. Their comments have been addressed in Section 7.24.4.1. The project is in compliance with this Executive Order.

7.23.24 E.O. 13089, Coral Reef Protection

This project would not impact those species, habitats, and other natural resources associated with coral reefs.

7.23.25 E.O. 13112, Invasive Species

This project would not introduce any invasive species.

7.24 Public Involvement*

7.24.1 Scoping and Draft Environmental Assessment (EA)

A scoping letter, dated August 4, 2004 was sent to stakeholders soliciting views and comments regarding environmental and cultural resources, study objectives, and important features within the study area. Funding for this project was discontinued but was reallocated in 2007, at which time scoping was resumed. The USACE, Jacksonville District met with all landowners within or immediately adjacent to the footprint of the proposed work in January of 2008. These meetings were held in order to discuss the project, and were attended by staff from the Mayport Naval Station, The Nature Conservancy (TNC), and the Timucuan Ecological and Historic Preserve. A second scoping letter was issued to all stakeholders on March 31, 2008. A Notice of Availability for the draft Integrated Feasibility Study and Environmental Assessment was mailed to interested parties on July 7, 2011. Copies of the draft report were made available in selected libraries within the study area and placed on the District website, along with other pertinent study documents. A public workshop was held on August 15, 2011 in order to provide all stakeholders the opportunity to discuss the draft report. The public and agency comment period on the draft report was initiated on July 7, 2011 and was extended to September 9, 2011.

7.24.2 Agency Coordination

The scoping letters listed in Section 7.24.1 were sent to all appropriate agencies. Federal and state agencies attended the Jacksonville Harbor (Mile Point) Feasibility Scoping Meeting held on July 30, 2004. Informal coordination between the USACE and the USFWS, NMFS, Timucuan Ecological and Historic Preserve, Florida Department of Environmental Protection (DEP), as well as TNC

was conducted during 2008. As requested, site visits were also made in 2008 with the USACE, USFWS, NMFS, and TNC attending. A meeting to discuss the numerical hydrodynamic modeling results for the proposed work was held on August 26, 2008 and was attended by the USFWS, NMFS, TNC, and the Mayport Naval Station. An Alternative Formulation Briefing was conducted on May 25, 2011 and was attended by federal and state agencies. An on-site meeting was held on August 19, 2011 in order to discuss the proposed mitigation and was attended by the DEP, USFWS, and the FWC. Pursuant to Section 7 of the Endangered Species Act, coordination with USFWS and the NMFS has been completed. The USACE, Jacksonville District and the USFWS jointly prepared a Memorandum for Record which stated that both agencies agree to utilize the National Environmental Policy Act review and Endangered Species Act consultation processes to complete coordination responsibilities under the Fish and Wildlife Coordination Act. Coordination with the Florida State Historic Preservation Officer has been completed. Coordination with the NMFS on Essential Fish Habitat and the DEP on state water quality certification is on-going. Agency coordination letters can be found in Appendix E.

7.24.3 List of Recipients

Copies of the draft Integrated Feasibility Report and Environmental Assessment shall be made available to appropriate stakeholders upon request. A list of stakeholders receiving notification can be found within Appendix E.

7.24.4 Comments Received and Responses

Comments received include public comments which are all non state and agency comments including but not limited to resident comments.

7.24.4.1 The scoping letter dated March 31, 2008 and meetings with the agencies generated the following comments. Responses were generated immediately following and later revised to reflect the recommended plan:

Public Comment: When will we know that the "Relocate Mile Point Training Wall" action is the chosen plan?

Response: Completion of the benefit-cost analysis will provide a selected plan. As part of the benefit-cost analysis our economist continues to interview commercial shipping interests to update the benefit analysis while our design engineers evaluate potential measures to reduce construction costs. After our Division and Headquarters offices complete a policy review and approve the draft report for release to the public, you will have an opportunity to review the selected plan. We will notify you when we have received approval to release the draft report to the public.

Public Comment: What is the timeframe for completion of this project?

Response: Due to the extra time required to evaluate additional sources of benefits and cost reduction measures, we anticipate completion of the draft report this summer, but review and approval for release to the public will extend into the fall of 2011. Assuming we have an economically justified project that is environmentally acceptable, avoids or minimizes impacts to the environment, the estimated project completion would occur in 2014 pending a Water Resources Development Act (WRDA) in 2012 followed by Federal appropriation of funds.

Public Comment: Will there be dredging of Chicopit Bay included in this resolution? There is significant silt that has almost closed this entrance currently and if the Great Marsh Island breakthrough was closed it would pretty much make Mt. Pleasant and Greenfield creeks landlocked.

Response: The USACE, Jacksonville District is proposing to construct a Flow Improvement Channel from the IWW, through Chicopit Bay, and ending at the mouth of Mt. Pleasant Creek. Additional details on the channel can be found in Appendices A and D.

Public Comment: Will there be dredging of Mt. Pleasant and Greenfield Creeks included in this resolution? They have been significantly hampered by the change in current flow caused by the current Little Jetties. I have seen them become shallower and shallower on a yearly basis.

Response: As previously stated, the USACE, Jacksonville District is proposing to construct a Flow Improvement Channel from the IWW, through Chicopit Bay, and ending at the mouth of Mt. Pleasant Creek. Additional details on the channel can be found in Appendices A and D.

Public Comment: What future maintenance will be included in this resolution to be sure that there are not future problems in Chicopit Bay and our creeks?

Response: Monitoring and corrective action, if needed, of the Flow Improvement Channel will be implemented by the USACE for no more than 5 years.

Public Comment: As you know many land owners including myself use these tidal creeks to navigate and any lowering of the tidal flow could impact property values as well as wildlife and fisheries. Please let me know what impact these proposed changes may cause? If the tide water levels rise a little that's ok. However, if the tidal waters lessen and make the tidal waters unnavigable this would be unacceptable.

Response: The proposed alternative, which includes relocation of the training wall along Helen Cooper Floyd Park will not lower the tidal water levels of any creeks. The tidal fluctuations in a large river like the St. Johns, this close to the ocean, are too great to be altered by this kind of project. The relocation of the

training wall would, however, result in the loss of salt marsh at Helen Cooper Floyd Park. To mitigate for this impact, as mentioned earlier, we propose to restore salt marsh at Great Marsh Island that would equal or exceed mitigation requirements for the project. Dredged material under this alternative would be placed in the eroded area at the island in order to achieve the desired elevation for the salt marsh to re-establish itself. Placement of dredged material at this location should also help re-direct the flow of Mt. Pleasant Creek towards the Intracoastal Waterway, which is the direction the creek used to flow.

Public Comment: Selection of the "no action alternative" would stimulate the community as the affected class to proceed with a class action suit based on wrongful neglect, diminished property values, and compensatory damages.

Response: Our Planning Guidance regulations require us to consider a no action alternative as part of the plan formulation process, but we also have to consider a National Economic Development Plan which maximizes net economic benefits (commercial ship transportation savings related to the Federal channel) while minimizing or avoiding impacts to the environment. The "no action alternative" usually does not satisfy the planning objectives of the study and rarely results in a selected plan.

City of Jacksonville Comment: Would the relocation of the training wall affect the concrete pier at Helen Cooper Floyd Park?

Response: The pier would not be affected as the proposed work would occur to the west of this location.

City of Jacksonville Comment: Please extend the training wall to the east more.

Response: It is not within the scope of the project.

Timucuan Ecological and Historic Preserve Comment: Examination of aerial photographs from 1943 show the eastern end of Great Marsh Island covered in sand, assumed to be dredge spoil. Do any records or charts of the area exist prior to the placement of dredge spoil? Knowledge of the size and shape of Great Marsh Island would be necessary to understand the circulation of water in Chicopit Bay prior to the alterations that have been made in association with the creation of the Intracoastal Waterway and the training walls on the St. Johns River.

Response: We have found several charts of Chicopit Bay and Great Marsh Island which predate the 1943 aerial. Historically, it appears that Mt. Pleasant Creek flowed in an easterly direction through the bay, and south of the island, towards the Intracoastal Waterway or Pablo Creek. According to NOAA navigation charts (1993), the bay was also much deeper than it is today. A portion of the shoal material which has accumulated in Chicopit Bay most likely

originated from the on-going erosion of Great Marsh Island. The planned west leg of the Mile Point Training Wall would wrap around the north side of the island and should prevent additional erosion from occurring. We also propose to restore up to 53 acres of salt marsh at Great Marsh Island. However, this would close the existing northern connection between Chicopit Bay and the St. Johns River. This connection was created by the erosion and loss of salt marsh in the 1990s. Shoaling within the bay has also decreased the amount of flow or flushing effect coming from the east, or from the bay's historic connection with the waterway or Pablo Creek. Therefore, we propose to construct a Flow Improvement Channel within Chicopit Bay, which should improve the flushing of the bay as well as provide deeper water Essential Fish Habitat.

Timucuan Ecological and Historic Preserve Comment: It appears there are several proposals for the placement of new training walls adjacent to Great Marsh Island. During the harbor deepening scoping meeting on February 7, 2008, a proposed training wall running from Great Marsh Island to Buck Island was shown. However, in the March 31, 2008 letter requesting comments, the length of the proposed training wall is shown much shorter. No information was presented as to the heights or additional walls or dikes that will be needed to retain the proposed fill to be placed. More information as to exact length, height, type of material, and plans to prevent the movement of fill is needed. Where will the fill needed to create the wetlands originate?

Response: Please refer to Appendix A of this report for more information on the dimensions of the proposed training wall. The proposed restoration of Great Marsh Island would utilize dredged material from the reconfiguration of the Mile Point Training Wall, i.e. the western portion of Helen Cooper Floyd Park and the Intracoastal Waterway, and from the Flow Improvement Channel.

Timucuan Ecological and Historic Preserve Comment: More detailed hydrological modeling is needed to determine the water flow into and out of Chicopit Bay. Historic aerial photographs and local lore suggests that in past decades Chicopit Bay was significantly deeper than today. The tidal marshes in and around Chicopit Bay have both ecological and recreational significance to Timucuan Preserve and the Theodore Roosevelt Area, which has extensive hiking trails and a bird observation tower.

Response: As previously stated, we propose to construct a Flow Improvement Channel within Chicopit Bay which should help restore the historical direction of flow through the bay. A tidal prism analysis of Chicopit Bay has been completed, please refer to **Section 6.3.4** of the report.

Timucuan Ecological and Historic Preserve Comment: Additional hydrological modeling is needed to determine the potential for increased erosion to the eastern end of Great Marsh Island or the salt marshes around Greenfield Islands should the proposed training walls be constructed.

Response: It is unclear what exactly constitutes the "Greenfield Islands salt marsh areas"; however, the marshes that border Chicopit Bay should not be adversely affected by the proposed work as the work seeks to restore the condition that existed approximately 10 years ago prior to the Great Marsh Island breakthrough. The hydrology of the marshes in the project area is tidally dominated and would continue to remain so with or without the project. The footprint of the proposed Flow Improvement Channel (FIC) seeks to follow the historic hydraulic connection through Chicopit Bay, from the Intracoastal Waterway to the mouth of Mt. Pleasant Creek, and replace the tidal flow that will be lost when the Great Marsh Island breakthrough is closed. Based on a tidal analysis, peak flow velocities within the FIC are predicted to be 3.6 feet per second and the presence of the FIC acts to provide a pathway for the tidal flow. While it is reasonable to expect the FIC to shift and change configuration somewhat over time while reaching relative equilibrium, there is no anticipation that the velocities outside of the FIC would be erosive to the surrounding marshes. In fact, without the initial construction of the FIC in the proposed location, a natural flow way would develop to accommodate the tidal prism and such a channel may form more closely to the marsh shoreline with greater potential for erosion. Eventually, the peak velocities in a naturally formed flow way would be the same as for the FIC.

The Nature Conservancy (TNC) Comment: The proposed project will remove 8.15 acres of salt marsh from Helen Cooper Floyd Park, is the proposed marsh creation the only mitigation for the removal of salt marsh?

Response: Using the Uniform Mitigation Assessment Method, we determined that 18.84 acres of mitigation would be required to offset the loss of 8.15 acres of salt marsh at Helen Cooper Floyd Park. However, as a beneficial use of dredged material, we propose to restore up to 53 acres of salt marsh at Great Marsh Island. The restoration would include tidal channels, placement of oyster shell to encourage oyster colonization, and a mix of high and low marsh. Please refer to Appendices D and A for more information.

TNC Comment: During the meeting in January, there were two proposed scenarios for marsh creation. The first scenario is the creation of 18.84 acres and the second scenario proposes to create 41.4 acres. Where will the fill to create marsh beyond the 8.15 acres of removed salt marsh come from? How would the flows and flushing be affected in Chicopit Bay between the two scenarios? Would oyster reefs in the area be impacted?

Response: As previously stated, we propose to restore up to 53 acres of salt marsh at Great Marsh Island. The restoration would use dredged material from the reconfiguration of the training wall, i.e. Helen Cooper Floyd Park and the Intracoastal Waterway. The restoration of Great Marsh Island would close off the eroded break through or channel that now exists in that location. This channel

was created due to the erosion of salt marsh. Also, much of this eroded material has most likely contributed to the shoaling of Chicopit Bay. Therefore, we also propose to construct a Flow Improvement Channel (FIC) within the bay. Dredged material from the FIC would be used to help restore Great Marsh Island. Site inspections of the proposed project footprint indicate that there is some oyster habitat in this area. However, the oyster reefs with the highest density in the vicinity of the project occur on the inter-tidal mud flats adjacent to Helen Cooper Floyd Park which are outside the project footprint and would not be affected by the work. We do plan to include tidal channels and place oyster shell within one of these channels as part of the proposed restoration of Great Marsh Island. Please refer to Appendices D and A for more information.

TNC Comment: Marsh creation would include plantings. What is the plan for monitoring success of the sand placement into productive salt marsh?

Response: The restoration of Great Marsh Island would be monitored for five years. Additional information on the monitoring plan can be found in Appendix D.

TNC Comment: As of the date of our meeting the length and height of the training wall was unknown. As adjacent land owners we are concerned about the length of the training wall. Will the training wall be extended beyond the property line and what effects will it have on the erosion of our property?

Response: Please refer to Appendix A for more information on the dimensions of the proposed training wall. The west leg of the training wall would extend out to the eastern side of the TNC property (please see drawings in Appendix A). The TNC salt marsh at Great Marsh Island appears to be actively eroding. The proposed west leg of the training wall should prevent further wave erosion.

TNC Comment: We are interested in the sediment movement along the training wall. Will the position of the training wall change the flows in Chicopit Bay and cause sedimentation? What is the potential for increased erosion on the southern end of Great Marsh Island?

Response: As previously stated, the proposed west leg of the training wall and the restoration of Great Marsh Island would close the eroded breakthrough. This should cause flow from Mt. Pleasant Creek to proceed in an easterly direction through the bay, and this appears to be the historical flow direction. Also as previously stated, we propose to construct a Flow Improvement Channel within the bay which should help re-establish the historical flow path.

TNC Comment: Does the marsh creation and associated fill serve a design purpose for the training wall?

Response: The restoration of Great Marsh Island would serve as mitigation for the loss of salt marsh at Helen Cooper Floyd Park, and it also provides an

opportunity to use dredged material from the project in a beneficial way and restore the entire island.

TNC Comment: This proposed project is part of the Jacksonville Harbor project. How do the different scenarios in the Mile Point project fit into the whole harbor project?

Response: The proposed reconfiguration of the Mile Point Training Wall should lift the current navigation restriction for this area. Per the restriction, vessels that draft more than 33 feet currently transit through the Mile Point turn during flood tide only. This work should allow these vessels to transit this area during flood or ebb tides.

Florida Division of Historical Resources Comment: An archaeological survey of the project area should be conducted.

Response: A survey of the project area has been completed. Please see Section 2.3.5 of the report.

Florida State Clearinghouse Comment: The U.S. Army Corps of Engineers is advised to coordinate with the DEP Bureau of Beaches and Coastal Systems and Florida Fish and Wildlife Conservation Commission.

Response: We have initiated coordination with the state per the scoping letters, and further coordination shall be conducted.

7.24.4.2 Comments from stakeholders on the draft Integrated Feasibility Report and Environmental Assessment (IFR/EA), as well as comments obtained during or after the public workshop, are summarized below (see Appendix H, to view comments):

Public Comment: What assurances can you give us your new flow improvement channel will remain deep enough for the property owners on Mt. Pleasant Creek and Chicopit Bay to get into the Intracoastal Waterway? What plans are there for future dredging of the flow improvement channel if it starts shoaling?

Response: The Chicopit Bay Flow Improvement Channel (FIC) is 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 Flow Improvement Channel. The historical maps show a stable channel flushing Chicopit Bay, as well as freshwater runoff from the neighboring creeks. Once Great Marsh Island is restored, the water from Greenfield and Mt. Pleasant Creeks, as well as the large volume of water within Chicopit Bay's tidal prism, will flush in and out through the FIC. It is reasonable to expect the water velocities in the channel to be sufficient to prevent shoaling within the channel. Monitoring and corrective action, if needed, of the FIC will be implemented by the USACE for 5 years.

Public Comment: What is being done to maintain access to the Intracoastal Waterway and St. Johns River from Mt. Pleasant Creek and Greenfield Creek during construction?

Response: Access will be maintained to the greatest extent practicable through design considerations and construction sequencing.

Public Comment: The new Western Wall should have a break in it that allows for continued navigational access into Chicopit Bay.

Response: Great Marsh Island will be restored to a continuous Island as it was prior to approximately 10 years ago. A Flow Improvement Channel in Chicopit Bay will be constructed based on the historic flows prior to the breakthrough.

Public Comment: It is imperative that the flow improvement channel be monitored and maintained, as required, not only to flush out Chicopit Bay, but also to flush out Mt. Pleasant and Greenfield Creeks. Otherwise, this project will have a significant ecological impact on a large portion of the Timucuan Preserve.

Response: The Flow Improvement Channel shall be monitored and maintained per pending agreements with regulatory agencies.

Public Comment: The flow improvement channel will be dredged to 6 feet. Is that 6 feet mlw?

Response: 6 feet Mean Lower Low Water (MLLW)

Public Comment: According to your current charts, the new plan shows less water movement or current in Chicopit Bay. This would cause more silting than present. Can the flow improvement channel be forked behind the newly created marsh so one channel would continue toward the northwest to connect to the other 2 creeks near Buck Island that will increase more water flow?

Response: The area to the northwest is not within the project footprint, as the project will restore the area to a condition similar to what it was prior to the breakthrough of Great Marsh Island approximately 10 years ago.

Public Comment: What is the definition of high marsh? How high will the created marsh be in the Chicopit Bay area NW of Great Marsh Island?

Response: High salt marsh is found on slightly higher ground than low salt marsh; therefore, high and low salt marshes have different levels and durations of inundation, and they have different plant communities. In the Integrated Feasibility Report and Environmental Assessment, the USACE used +3 feet above mean lower low water (mllw) for high marsh and +2 feet above mllw for

low salt marsh. These elevations were based on existing information from previous surveys. Prior to performing any construction, the USACE will resurvey adjacent high and low salt marshes in order to more precisely determine the target elevations required for high and low salt marshes within the proposed restoration site.

Public Comment: Has the Army Corps ever made a determination on whether Mt. Pleasant and Greenfield Creeks are navigable per CFR 33 Part 329?

Response: Per CFR 33, Part 329.4, both creeks appear to meet the definition of navigable waterways of the United States as stated below.

329.4 General definition.
Navigable waters of the United States are those waters that are subject to the ebb and flow of the tide and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. A determination of navigability, once made, applies laterally over the entire surface of the waterbody, and is not extinguished by later actions or events which impede or destroy navigable capacity.

Public Comment: Why is Great Marsh Island being used as a disposal site for dredge spoils?

Response: A total of 8.15 acres of salt marsh would be impacted by the proposed work, and the USACE has determined that 18.84 acres of mitigation would be required to offset this loss. The mitigation would be performed by placing dredged material within the eroded breakthrough at Great Marsh Island, and restoring salt marsh which historically occurred at this location. However, as a beneficial use of dredged material, the USACE proposes to restore the entire breakthrough at the island, which could be up to 53 acres. This would provide up to 34.16 acres of restored salt marsh, oyster beds, and tidal creeks in addition to the 18.84 acres of required mitigation. Restoration of Great Marsh Island is also the least cost alternative for dredged material placement.

Public Comment: Why is no retaining wall proposed for the south side of Great Marsh Island?

Response: The USACE proposes to place a geotube on the south side of Great Marsh Island. During initial dredged material placement at the island it will be necessary to contain the material to allow for settlement and dewatering of the dredge slurry. Containment would be accomplished on the north side by the new west leg of the training wall, and a combination of geotubes or water dams on the east, west and south sides. In addition, the new west leg of the training wall will wrap around the southeast end of Great Marsh Island.

Public Comment: Do Phase I (relocating jetties) and Phase II (restoring Great Marsh Island) have the same funding and priority? Is it possible Phase I would be done without Phase II?

Response: Per the Engineering and Mitigation Plan Appendices of the IFR/EA, Phase I would include relocation of the jetties as well as placement of dredged material at the Great Marsh Island restoration site. Phase II would include final grading of the material to elevations that would support salt marsh, planting, etc. The amount of final grading and planting would be dependent on how the material has settled and how much natural recruitment of marsh vegetation has occurred since the completion of Phase I. Both Phases I and II have the same priority. Phase II would be required per the U.S. Clean Water Act in order to fulfill the USACE mitigation requirements.

Public Comment: As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

Response: This report shall be sent to the Secretary of the Army for further review, and if presented to the U.S. Congress, the U.S. Congress shall decide whether this project is to be funded for construction.

U.S. Environmental Protection Agency (EPA) Comment: Official correspondence with the U.S. Coast Guard (USCG) about risk analysis should be included with the Final Integrated Feasibility Report and Environmental Assessment (IFR/EA).

Response: The risk assessment dated February 3, 2004 was completed by the USCG relating to a permit request by Atlantic Marine, Inc. (AMI); the assessment evaluated impacts to navigation in the main Federal channel in the St. Johns River and the IWW. The Risk Assessment can be found in the following document SAJ-1994-9814340580; the Jacksonville District Regulatory Division retains these documents.

EPA Comment: Specific and detailed information should be provided (or referenced) that addresses any changes in local sedimentation or shoaling rates that may be caused by the proposed work. In addition to shoreline erosion on the north shore of Mile Point, a breakthrough has occurred at Great Marsh Island on the southern bank of the St. Johns River, and this has led to severe shoaling in Chicopit Bay. The Corps should conclusively address the potential for increased shoaling in Chicopit Bay and flow alterations.

Response: The shoaling of Chicopit Bay has apparently resulted from the breakthrough that has occurred and the subsequent erosion of Great Marsh Island and the deposition of such into the Bay. This source of sedimentation will no longer be present upon completion of the West leg Training Wall component.

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 feet MLW are of such magnitude to expect little deposition to occur in either of the channels. The Chicopit Bay Flow Improvement Channel (FIC) is also not expected to require maintenance dredging. Prior to the breakthrough of Great Marsh Island, a natural channel existed in approximately the same location as the proposed FIC. The historical maps (**Figures 8-10**) show water depths up to 10 feet 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 Flow Improvement Channel. It is reasonable to expect the water velocities in the channel to be sufficient to prevent shoaling within the channel.

EPA Comment: Conclusive information about the eligibility for listing of the Great Marsh Island prehistoric site should be included in the Final IFR/EA.

Response: The Great Marsh Island prehistoric site has been determined to be eligible for listing on the National Register of Historic Places in accordance with guidelines for implementing Section 106 of the National Historic Preservation Act (36 CFR, Part 800). Consultation with the Florida State Historic Preservation Officer and Federally recognized tribes have determined that the preferred alternative would have no adverse effect on this prehistoric site.

EPA Comment: The Corps should conclusively address the north bank homeowners' concerns about increased future erosion of their property and subsequent property losses. These homeowners on the north bank of the river at Mile Point have experienced significant shoreline erosion to their property and have legitimate and serious concerns about future property losses; therefore, final recommendations for solving these erosion problems should be included in the Final IFR/EA in the Problems and Opportunities section.

Response: Compared to the existing without-project condition, the future with-project condition reduces the magnitude of the ebb flow currents along the north shoreline. A reduction of water flow immediately adjacent to a shoreline should ordinarily reduce erosional conditions. However, exactly how the current reduction will relate to the rate of future erosion at the Mile Point north shoreline is not certain because there are other dynamic factors present such as flood tide, wave attack, storm activity (direct or in the St. Johns River watershed), and underlying geology that can affect erosion.

EPA Comment: The Final IFR/EA should also include the computer model predicted velocities along Mile Point and demonstrate that they are within acceptable limits.

Response: Maximum velocities along the northern shoreline vary with location, and are approximately 3 to 3.25 feet per second for both with and without-project conditions. From the model results, the velocities are reduced for the majority of the northern shoreline.

EPA Comment: The Corps should also show the proposed work will not adversely affect the salt marshes in the Greenfield and Four Pines Islands areas.

Response: It is unclear what exactly constitutes the "Greenfield and Four Pines Islands salt marsh areas;" however, the marshes that border Chicopit Bay should not be adversely affected by the proposed work as the work seeks to restore the condition that existed approximately 10 years ago prior to the Great Marsh Island (GMI) breakthrough. The hydrology of the marshes in the project area is tidally dominated and would continue to remain so with or without the project. The footprint of the proposed Flow Improvement Channel (FIC) seeks to follow the historic hydraulic connection through Chicopit Bay, from the Intracoastal Waterway to the mouth of Mt. Pleasant Creek, and replace the tidal flow that will be lost when the GMI breakthrough is closed. Based on a tidal analysis, peak flow velocities within the FIC are predicted to be 3.6 feet per second and the presence of the FIC acts to provide a pathway for the tidal flow. While it is reasonable to expect the FIC to shift and change configuration somewhat over time while reaching relative equilibrium, there is no anticipation that the velocities outside of the FIC would be erosive to the surrounding marshes. In fact, without the initial construction of the FIC in the proposed location, a natural flow way would develop to accommodate the tidal prism and such a channel may form more closely to the marsh shoreline with greater potential for erosion. Eventually, the peak velocities in a naturally formed flow way would be the same as for the FIC.

EPA Comment: Pursuant to Section 7 of the Endangered Species Act, coordination with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) reportedly has been initiated. The Corps and the USFWS have entered into an agreement on the review of the draft Fish and Wildlife Coordination Act Report for this project. The Final IFR should include copies of all official correspondence with NMFS and USFWS, as well as the Jacksonville Port Authority.

Response: All official correspondence with the NMFS and USFWS shall be included in the final IFR.

EPA Comment: A report on future real estate negotiations (that occurred after the Draft IFR/EA was issued) regarding the expansion of the Great Marsh Island Restoration Area should be included, as well as an update on the efforts of the Mayport Naval Station and the Nature Conservancy of their real estate agreements.

Response: Once the PPA is signed, land can be specifically requested. Approximately 51.2 acres of land are under the control of the U.S. Navy. The U.S. Army Corps of Engineers 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 Nature Conservancy, Inc. owns lands in the vicinity of the proposed project that will not be negatively impacted. The USACE has and continues to coordinate with The Nature Conservancy, Inc. on the proposed work.

Lands required for the construction and operation of the proposed project are located below the ordinary high water line and as such, available to the Federal government via navigational servitude. Approximately 53 acres of land are within the category of navigational servitude. No additional land interests are required. The U.S. Army Corps of Engineers, as the responsible lead agency for the Jacksonville Harbor Navigation Project will coordinate with the U.S. Navy the license of impacted real property.

EPA Comment: A report of issues raised at future public meetings should also be included in the Final IFR/EA.

Response: All comments and concerns raised at public meetings, and responses to those comments and concerns, are included in the final IFR/EA.

EPA Comment: The status of the existing Mile Point training wall's eligibility for the National Register of Historic Places should be documented in the Final IFR/EA.

Response: In accordance with implementing regulations of Section 106 of the National Historic Preservation Act (36 CFR, Part 800), the final determinations of eligibility and effect are required prior to project implementation. The National Environmental Policy Act (NEPA) requires informed decisions. The National Historic Preservation Act specifically states adverse effects to historic properties does not necessarily trigger significance under NEPA. The decision maker has sufficient information about the historic property to make an informed decision. If the training wall is determined to be National Register eligible, then appropriate mitigation measures would be taken in accordance with Section 106 of the National Historic Preservation Act prior to construction.

FDEP Comment: The Florida Department of Environmental Protection (DEP) staff notes that the project will require an Environmental Resource Permit (ERP) under Part IV of Chapter 373, *Florida Statutes*, from the Northeast District Office in Jacksonville. The proposed project impacts to jurisdictional wetlands and/or surface waters, and any proposed mitigation activities offsetting those impacts,

will be assessed in accordance with Chapter 62-345, *Florida Administrative Code*.

Response: Noted.

FDEP Comment: DEP's Hydrographic Engineer has reviewed the Draft IFR/EA and concurs with the modeling study results for the Recommended Plan. Crosscurrents and eddies are key hydrodynamic factors affecting river shoreline stability, particularly in the river winding area. The study results showed that the Recommended Plan would reduce shoreline erosion and navigational impediments in the river to improve navigation in Jacksonville Harbor.

Response: Noted.

FDEP Comment: The report indicated that post-construction, the peak flow velocities in the vicinity of the FIC (*i.e.,* near the mouth of the Chicopit Bay, leading to the Intracoastal Waterway) would be 3.6 feet per second. What are the peak flow velocities at the same location if the FIC is not constructed?

Response: As previously stated, based on a tidal analysis, peak flow velocities within the Flow Improvement Channel (FIC) are predicted to be 3.6 feet per second and the presence of the FIC acts to provide a pathway for the tidal flow. While it is reasonable to expect the FIC to shift and change configuration somewhat over time while reaching relative equilibrium, there is no anticipation that the velocities outside of the FIC would be erosive to the surrounding marshes. In fact, without the initial construction of the FIC in the proposed location, a natural flow way would develop to accommodate the tidal prism and such a channel may form more closely to the marsh shoreline with greater potential for erosion. Eventually, the peak velocities in a naturally formed flow way would be the same as for the FIC.

FDEP Comment: Since related local water velocity will diminish after the initial dredging, the FIC may become a sediment/sand trap as tidal and riverine currents move sediments into the channel. Reportedly, port representatives stated in a public meeting that they have no plans to maintenance-dredge the FIC after its excavation. What are the Corps' plans for future maintenance-dredging of the FIC to keep it open?

Response: Monitoring and corrective action, if needed, of the Flow Improvement Channel (FIC) will be implemented by the USACE for 5 years.

FDEP Comment: Currently, flows from Mt. Pleasant Creek enter the St. Johns River through the area that will become the material placement/mitigation restoration site (*i.e.,* between the eastern and western portions of Great Marsh Island). Upon construction of the new western training wall and the placement of the dredged material, this northward flow of the creek will be eliminated. Will the

FIC improvements fully compensate for the loss of this flow vector? Again, what plans are available to maintain the FIC and sustain access to Mt. Pleasant Creek?

Response: Monitoring and corrective action, if needed, of the FIC will be implemented by the USACE for 5 years. However, the Chicopit Bay Flow Improvement Channel (FIC) is 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 a stable channel flushing 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 Flow Improvement Channel. It is reasonable to expect the water velocities in the channel to be sufficient to prevent shoaling within the channel.

FDEP Comment: If the western training wall is constructed prior to creation of the FIC, sediments from the upstream drainage basin will accumulate in West Chicopit Bay and flushing is at risk of deteriorating. The same risk would occur if the FIC is not maintained, as stated above. Until a sustainable maintenance commitment is identified and construction sequencing of the western wall, restoration site and FIC are addressed to prevent flushing impairment, the DEP may not have the reasonable assurance necessary to provide State Water Quality Certification for the project as presented in the Draft IFR/EA.

Response: Monitoring and corrective action, if needed, of the Flow Improvement Channel (FIC) will be implemented by the USACE for 5 years.

FDEP Comment: The reconfigured eastern training wall will block an existing channel between Helen Cooper Floyd Park and a salt marsh island directly south of the park that leads to the eastern portion of Chicopit Bay. Another channel exists south of the salt marsh island between San Pablo Creek and eastern Chicopit Bay, but its bathymetry appears shallower than the planned FIC. Will the new eastern training wall significantly impact the channel hydrology to East Chicopit Bay? How will the change in flow velocities affect wetland habitat along the shoreline of the salt marsh island?

Response: The new eastern leg training wall will block flow through the identified channel; however, a hydraulic connection will remain such that there is no impact to water levels. Based on the model, the flows through the channel are currently in the range of about 0.5 feet per second and the majority of flow to Eastern Chicopit bay enters through the southern channel. There exists a potential that with the blocking of this connection, the water flows behind the new training wall decrease such that material deposition occurs. If this occurs there could be a formation of salt marsh in an area that is now open water.

FWC Comment: The FWC advises that in-water work could adversely affect the Florida manatee and marine turtles. Since no information was provided detailing the timing or duration of the proposed construction and dredging activities, FWC cannot recommend specific avoidance and minimization measures for the manatee, other than the 2011 Standard Manatee and Marine Turtle Construction Conditions for in-water work. As more details become available, further consultation with FWC staff will be necessary to determine the site-specific conservation measures for this project. Staff requests that additional information be included in the Final IFR/EA to facilitate FWC's review and future state permitting of the proposal: complete detailed Great Marsh Island restoration plans and habitat surveys identifying and quantifying the affected marine habitats.

Response: Information regarding timing and duration of the proposed work were provided in the 404 (b)(1) evaluation (Appendix F). Information regarding restoration of Great Marsh Island were provided in the Engineering and Mitigation Appendices (Appendices A and D).

FWC Comment: There are currently multiple information gaps related to potential habitat impacts and habitat restoration aspects of the proposed project. If the Corps of Engineers includes the information requested below in the final EA, it would facilitate our review of the project and accelerate the future permitting process. In addition, this information will provide the FWC's marine habitat staff with information that will assist them in providing technical recommendations towards successful habitat minimization and mitigation. Therefore, we recommend that the following information be included in the final EA:

1. Complete detailed restoration plans so state agencies can assess the habitat restoration/mitigation aspects of this project, including:

a) Potential effects that the newly proposed channel may have on the southeast portion of Great Marsh Island;

Response: The Flow Improvement Channel (FIC) is proposed to be located approximately 500 feet south of the southeast portion of Great Marsh Island (GMI) and will not be deep enough or close enough to the shoreline of GMI to be impactive. At the location where the FIC is closest to the southeast corner of GMI, the newly constructed west leg training wall will wrap around the shoreline and provide erosion protection.

b) The total amount of fill required to create the Great Marsh Island restoration site and identify the individual sources of fill and the amount of fill that will be used from each site;

Response: Please refer to Table A-2 in the Engineering Appendix for estimated construction quantities. It is currently estimated that approximately 889,000 cubic yards of material will be excavated or dredged from the vicinity of the existing training wall to be removed and approximately 72,000 cubic yards of material will be dredged from the FIC. All excavated/dredged material will be placed in the GMI marsh restoration area and the total amount of marsh created will be split between high marsh and low marsh in a ratio yet to be determined.

c) Proposed construction elevations for Great Marsh Island and the expected subsidence elevations; and

Response: A discussion of construction elevations for Great Marsh Island is provided in the Mitigation Plan (Appendix D).

d) Origin of nursery stock that will be used for planting the restoration sites and the species that will be used.

Response: The origin of nursery stock has not been determined at this time. The USACE shall coordinate with the Florida Fish and Wildlife Conservation Commission on this issue.

2. The results of habitat surveys identifying and quantifying the existing marine habitats that would be impacted by the proposed project, other than the 8.15 acres of salt marsh at Helen Cooper Floyd Park.

Response: Information on habitats affected by the proposed work is provided in Section 7 of the report as well as the Mitigation Appendix D.

3. Identify the material that would be used to construct the new training wall as well as the construction designs for the structures. If possible, include a discussion on the potential types of construction methodology.

Response: Please refer to part D of the Engineering Appendix that describes construction materials and methodology, in addition please refer to the 2008 and 2011 Value Engineering attachments. The current design reflects the level of detail required for a Feasibility Study and will be refined and detailed during the Preconstruction, Engineering and Design (PED) phase upon project approval.

SJRWMD Comment: District staff have been communicating directly with the U.S. Army Corps of Engineers about this project (e.g., relative to concerns about hydrologic effects, such as the potential for erosion to affect the shoreline and emergent vegetation within Chicopit Bay) and will continue this coordination. The Recommended Plan includes adding a Chicopit Bay flow improvement channel, which involves dredging. USACE should work closely with the marine mammal experts at the University of North Florida to develop and use best management practices that will protect the resident dolphin population from dredging-related

impacts. Background information/note: Last year, the St. Johns River experienced a well documented marine mammal mortality event. In addition, there was an unusually high death rate among young dolphins occurred coincident with the deepening of the St. Johns River Channel. Although it is not certain, it has been suggested that the placement of the dredge spoil pipes along the channel of the river in a location where the river's dolphin population is active, and at a time when young dolphins are still reliant upon their mothers, may have impaired the ability of mothers and their young to communicate.

Response: The proposed work has been coordinated with the National Marine Fisheries Service (NMFS), and shall be in compliance with the Marine Mammal Protection Act.

FLORIDA DEPARTMENT OF STATE Comment: No Comment/Consistent.

Response: Noted.

FLORIDA DEPARTMENT OF TRANSPORTATION Comment: The FDOT Seaport Office and District Two have no comments.

Response: Noted.

NORTHEAST FLORIDA REGIONAL PLANNING COUNCIL Comment; No comments.

Response: Noted.

Duval County Comment: No comments from the Duval County Planning and Development.

Response: Noted.

7.25 References

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8.0 RECOMMENDATIONS

I concur with the findings presented in this report. The recommended plan developed is technically sound, economically justified, and socially and environmentally acceptable.

The work proposed is not within existing authority. I recommend that the plan selected herein for the relocation of the Mile Point training wall, which combines the reconfiguration of the existing training wall, restoration of Great Marsh Island as the least cost disposal option, and the creation of a Flow Improvement Channel in Chicopit Bay be authorized by Congress for implementation. Mitigation is required for approximately 8.15 acres impacted by the training wall relocation. Aids to navigation will be provided at 100% Federal cost. For the purpose of calculating the Section 902 limit, the total estimated project first cost of the project is $35,999,000 including an estimated Federal share of $26,998,000 and an estimated non-Federal share of $9,001,000.

The recommended plan conforms to the essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies and complies with other Administration and legislative policies and guidelines on project development. If the project were to receive funds for Federal implementation, it would be implemented subject to the cost sharing, financing, and other applicable requirements of Federal law and policy for navigation projects including WRDA 1986, as amended; and would be implemented with such modifications, as the Chief of Engineers deems advisable within his discretionary authority. Aids to navigation are to be funded by the U.S. Coast Guard. Federal implementation is contingent upon the non-federal sponsor agreeing to comply with applicable Federal laws and policies. Prior to implementation, the non-federal sponsor shall agree to:

a. Provide 10 percent of the total cost of construction of the general navigation features (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 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 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 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 feet.

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 betterments, 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 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 USC 9601–9675, that may exist in, on, or under 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.

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.

Alfred A. Pantano, Jr.
Colonel, U. S. Army
District Commander
03/08/12

March 2012

Jacksonville Harbor (Mile Point) Navigation Study
Duval County, Florida

FINAL
INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

APPENDICES

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APPENDIX B – SOCIO-ECONOMICS
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NAVIGATION STUDY FOR JACKSONVILLE HARBOR (MILE POINT), FLORIDA

DRAFT INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

APPENDIX A

ENGINEERING

NAVIGATION STUDY FOR JACKSONVILLE HARBOR (MILE POINT), FLORIDA

FINAL INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

APPENDIX A ENGINEERING

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JACKSONVILLE HARBOR (MILE POINT), FLORIDA
APPENDIX A
ENGINEERING

A. INTRODUCTION

1. General. This Appendix presents the discussion of applicable design considerations and construction methods utilized to adequately address the project requirements and to establish a basis for the cost estimates. General requirements for real estate and operation and maintenance are also presented. This Appendix has been prepared in accordance with the applicable policy guidance as contained in ER 1110-2-1150, Engineering and Design for Civil Works Projects; ER 1110-2-1403, Studies by Coastal, Hydraulic, and Hydrologic Facilities and Others; and ER 1110-2-1404, Hydraulic Design of Deep Draft Navigation Projects.

2. Recommended Plan. The recommended NED plan, Alternative VE-3B+F.I.C., combines the reconfiguration of the existing training wall with the creation of a flow improvement channel in Chicopit Bay. The training wall reconfiguration includes removal of the western 3110 feet of existing Mile Point training wall and the construction of a new Western Leg and a relocated Eastern Leg training wall of approximately 4250 feet and 2050 feet, respectively. The Flow Improvement Channel (F.I.C.) consists of dredging a channel 80 feet wide and 6 feet deep for a length of approximately 3623 feet through Western Chicopit Bay. A plan view of the recommended plan is shown on Plate A-3.

The initial plan, Alternative 3B, was modified by the results of a Value Engineering (VE) Study which incorporates the beneficial use of dredged material by creating a salt marsh mitigation area that restores wetlands lost on Great Marsh Island. The original Plan 3B utilized the Buck Island Disposal Area for placement of dredged material which would have resulted in increased cost and loss of capacity in the D/A. A plan view of the Material Placement/Salt Marsh Mitigation Area is shown on Plate A-8. The VE program has also identified concrete structural units for the West Leg training wall that will serve as both initial containment for the mitigation area and on-going shoreline protection beyond the project life of 50 years. The VE Study Reports are provided as Attachments to this Appendix. Further modification of Alternative 3B occurred with the addition of the F.I.C.; refer to Plates A-10 and A-11. Western Chicopit Bay has experienced shoaling as a result of the breakthrough at Great Marsh Island and tidal flushing could be increased by opening a flow channel that was present prior to the breakthrough's occurrence.

A discussion of the plan formulation involved in the selection of the recommended plan is presented in the main portion of this report. All soundings presented in this report are at Mean Low Water (MLW). Jacksonville Harbor is scheduled to be updated to the datum of Mean Lower Low Water (MLLW) in the future once data collection is complete and processed. The project features shall be designed and constructed to MLLW at the time of Plans and Specifications development. This conversion will likely increase stone quantities by a nominal amount.

3. Alternatives. One alternative that remains under consideration at the request of the St. Johns Bar Pilots consists of a proposed widening of the existing channel in the Mile Point reach (Cuts 9 through 19) by varying amounts with disposal of dredged material in Buck Island as shown on Plate A-9. The widening only alternative benefits high powered vessels with a DWT to horsepower ratio of 0.75 or greater. This alternative would allow for alleviation of the restrictions associated with the difficult cross-currents; however, it does not meet the study objective of reducing the effects of the currents on the erosion of the Mile Point shoreline. This Alternative was combined with the recommended plan to further increase safety and navigability of this reach of the project and this combination was carried to the final array of alternatives that can be found in the Main Report.

B. HYDROLOGY AND HYDRAULICS

4. General. The St. Johns River is the longest river in Florida, meandering more than 300 statute miles. The river discharges into the Atlantic Ocean at Mayport in Duval County. The total elevation drop from its headwaters to the Atlantic Ocean is less than 30 feet—an average slope of about one inch per mile.

Over most of its length, the river's average depth is relatively shallow. However, the 26-mile stretch of river from the mouth to downtown Jacksonville (the deepest segment) has an average depth of approximately 30 ft. Many small rivers, creeks, and tributaries feed into the St. Johns River, increasing the overall river flow, and affecting the tidal signal, especially during storm events. Some of the larger rivers and creeks along the lower portion of the St. Johns River include: Pablo Creek, Sisters Creek, Clapboard Creek, and Cedar Point Creek. Others, farther upriver, include: Dunn Creek, Broward River, Trout River, Arlington River, and Ortega River.

The St Johns River runs through the city of Jacksonville, located in northeast Florida. Deep-draft vessels transit as far as downtown Jacksonville, or about 24 miles upriver from the confluence with the Atlantic Ocean. Beyond this point, commercial traffic is light, and comprised mostly of tug-assisted barges.

The effect of tides on the river is significant. Tidal influences are prevalent from the mouth of the river to slightly more than 100 statute miles upriver, near Georgetown, where the tide becomes negligible. The exact point where the river becomes non-tidal will constantly change, depending on the strength of the tide signal (e.g., spring or neap tides), and the interaction of the tide with the variable river flow. Tidal effects have been reported as far south as Lake Harney, upstream of De Land.

The total flow in the lower reaches of the river is comprised of about 80%-90% tide-induced flow, with the remaining flow caused by wind, freshwater inflow (from

tributaries and rain), and industrial and treatment plant discharges. The river flow generally increases downstream, with the highest flows occurring at the mouth of the river. The total discharge of the river will often exceed 200,000 cfs. Freshwater flows within River is seasonal, generally following the seasonal rain patterns with higher flows occurring in the late summer to early fall, and lower flows occurring in the winter months. The average annual non-tidal freshwater discharge at the river mouth is approximately 15,000 cfs.

The main area of interest in this study centers on the intersection of the St Johns River and the Intracoastal Waterway (IWW). This area is known as Mile Point. The IWW crosses the main channel of the St Johns River at an angle of approximately 45° from the north, out of Sisters Creek. From the south, it crosses at an angle almost parallel to the main channel flow out of Pablo Creek, with flow usually running in the opposite direction of flow in the river. The intersection of the St Johns River and the IWW is subject to cross-currents in the upper depths of the river due to the significant flow rates coming out of Pablo Creek and the large confluence angle with the St Johns River.

Pablo Creek is a navigable waterway that experiences flows in excess of 55,000 cubic feet per second during ebb tide, as measured with Acoustic Doppler Current Profile (ADCP) surveys. This flow coming from the south, out of Pablo Creek can exceed 25% of the total flow of the St. Johns River at Mile Point. In addition, the confluence angle of these two waterways is more than 130 degrees. As the St. Johns River flows in a southeasterly direction during ebb flow, Pablo Creek's flow collides with the river in a northwesterly direction. This combination of high flow and extreme confluence angle causes a deflection of the main channel flows to the northeast.

ADCP surveys clearly show that during flood tide, the majority of the flow (and fast moving water, >5fps) is concentrated toward the southern bank of the river (outer bend) with very slow moving water along the northern bank (inner bend). This is the flow distribution one would expect to see at a river bend. However, during the ebb tide the flow distribution is drastically shifted/deflected to the north. Fast moving water flows can be seen along the northern shoreline, with water moving significantly faster along the northern (inner) bend compared to the southern (outer) bend where the Federal Channel is located. One must consider that the north bank at Mile Point is on the inside of the river bend, where normally sedimentation, not erosion, usually occurs. The unique geometric configuration of this intersection of the IWW and the St Johns River, which produces a dramatic shift in the St Johns River's currents, is the only logical explanation for the extreme cross-currents experienced at this turn. This phenomenon can be visibly seen at the project site, has been measured with multiple ADCP surveys, is reproduced in both two- and three-dimensional modeling, and verified by the St Johns River Bar Pilots. These dangerous cross-currents are the reason for the Bar Pilots' navigation restrictions.

On the southern bank of the St Johns River at Mile Point, the Mile Point Training Wall, also known locally as the "Little Jetties", exists in a deteriorated state. Past records indicate the Mile Point Training Wall was constructed prior to 1910. An examination of the training wall was performed in 1928. According to that examination, the training wall ranged in height from an original design height of 6 feet above mean low water (MLW) to areas with a height of only 0.5 feet above MLW. Maintenance work around 1931 rebuilt the training wall to an original design elevation of 6 feet above MLW. Work began under contract on April 21, 1931 and resulted in the repair of 5,990 linear feet of the training wall. Over 18,000 tons of granite averaging in weight from 1,000 to 1,500 pounds per stone was placed in the Mile Point Training Wall. Currently, the training wall is in a deteriorated state. At high water, only a few sections of the training wall are visible above the water line. Many sections of the training wall are submerged even at low water.

In the recent past, homeowners on the north bank of the river at Mile Point have seen severe erosion of their property and are seriously concerned about future property losses. The homeowners have speculated that this erosion is caused by hydrodynamic effects of dredging done by U.S. Corps of Engineers in the past, installation of the large Atlantic Marine dry dock, as well as by the deterioration of the Little Jetties training wall. Also of concern in this area is the breakthrough of Great Marsh Island on the southern bank of the St Johns at Mile Point, allowing water to flow directly from the St Johns River into nearby Chicopit Bay. This has caused severe shoaling in parts of Chicopit Bay. At low tide, the water depth in some parts of the bay is less than six inches deep.

5. Sea Level Rise. Relative sea level (RSL) refers to local elevation of the sea with respect to land, including the lowering or rising of land through geologic processes such as subsidence and glacial rebound. It is anticipated that sea level will rise within the next 100 years. To incorporate the direct and indirect physical effects of projected future sea-level change on design, construction, operation, and maintenance of coastal projects, the U.S. Army Corps of Engineers (USACE) has provided guidance in the form an Engineering Circular, EC 1165-2-211. EC 1165-2-211 provides both a methodology and a procedure for determining a range of sea level change estimates based on global sea level change rates, the local historic sea level change rate, the construction (base) year of the project, and the design life of the project. Three estimates are required by the guidance, a Baseline estimate representing the minimum expected sea level change, an Intermediate estimate, and a High estimate representing the maximum expected sea level change. The local rate of vertical land movement is found by subtracting regional MSL trend from local MSL trend. The regional mean sea level trend is assumed equal to the eustatic mean sea level trend of 1.7 mm/year. Therefore at Mile Point, there is 0.70 mm/year of subsidence. Adjusting equation (2) to include the historic global mean sea-level change rate of +1.7 mm/year results in updated values for the variable b being equal to 2.36E-5 for modified NRC Curve I (Intermediate), 6.20E-5 for modified NRC Curve II, and 1.005E-4 for modified NRC Curve III (High).

$$\textit{Equation 2: } E(t) = 0.0017t + bt^2$$

Equation (3) of EC 1165-2-211 Appendix B calculates eustatic sea level change over the life of the project. E(t) is eustatic sea level change and b is a constant provided in EC 1165-2-211; t_1 is the time between the project's construction date and 1986 and t_2 is the time between a future date at which one wants an estimate for sea-level change and 1986 (or $t_2 = t_1$ + number of years after construction (Knuuti, 2002)). For example, if a designer wants to know the projected eustatic sea-level change at the end of a project's period of analysis, and the project is to have a fifty year life and is to be constructed in 2015, $t_1 = 2015 - 1986 = 29$ and $t_2 = 2065 - 1986 = 79$.

$$\textit{Equation 3: } E(t_2) - E(t_1) = 0.0017(t_2 - t_1) + b(t_2^2 - t_1^2)$$

Modifying equation (3), to include site-specific sea level change data, results in an equation for Relative Sea Level (RSL). This equation is used to estimate Baseline, Intermediate and High sea level change values over the life of the project.

$$RSL(t_2) - RSL(t_1) = (e+M)\ (t_2 - t_1) + b(t_2^2 - t_1^2)$$

$RSL(t_1)$ and $RSL(t_2)$ are the total RSL at times t_1 and t_2, and the quantity $(e + M)$ is the local change in sea level in m/year that accounts for the eustatic change as well as uplift or subsidence. The quantity $(e+M)$ is found from the nearest tide gage with a tidal record of at least 40 years.

Based on historical sea level measurements taken from NOS gage 8720218 at Mayport, Florida, the historic sea level rise rate $(e+M)$ was determined to be 2.40 +/- .31 mm/year (0.0076 ft/year) (http://tidesandcurrents.noaa.gov/sltrends/index.shtml). The project base year was specified as 2015, and the project life was projected to be 50 years. Table 1 shows the results of equation (3) every five years, starting from the base year of 2015. From this table, the average baseline, intermediate, and high sea level change rates were found to be +2.40 mm/year (0.0079 ft/year), +4.95 mm/year (0.0162 ft/year), and +13.25 mm/year (0.0435 ft/year), respectively.

Projecting the three rates of change to the year 2065, which corresponds to a 50-year project life, provides us with a predicted low level rise of 0.12 m or approximately 0.39 feet, an intermediate level rise of 0.25 m or approximately 0.81 feet, and a high level rise of 0.66 m or approximately 2.17 feet.

In order to assess the impact that either the low level (0.39 feet), the intermediate level (0.81 feet) or the high level (2.17 feet) of predicted sea level rise may have on this project it is first important to understand the function of the affected structure. A training wall by definition is a wall built along the bank of a river or estuary parallel to the direction of flow to direct and confine the flow. With that definition in mind it should be noted that a training wall is not a coastal protection structure and the function and performance of the wall is measured by its ability to "train" river currents; therefore, as long as the water surface level is below the crest of the structure, the structure is performing at 100% design capacity. The structure design crest elevation of +7.5 feet (+2.29 m), MLLW, represents a height of 2.55 feet (0.77 m) above Mean Higher High Water (MHHW) and a height of 0.36 feet (0.11 m)

above the highest observed water level (NOAA Tidal Bench Mark Station ID #8720218 at Mayport). Thus the impact of the low and intermediate level increases of 0.39 feet and 0.81 feet, respectively, would be inconsequential to the performance of the structure and the high level increase of 2.17 feet would only affect the performance of the structure during low probability events that exceeded the MHHW level by more than 0.38 feet. 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 although the crest width would have to decrease slightly to do so.

6. Currents. In addition to the severe erosion experienced in the Mile Point area, dangerous crosscurrents are a major concern to deep-draft commercial navigation. Meetings with the St. Johns Bar Pilot's Association have highlighted the difficult and intense nature of the crosscurrents at the confluence of the St. Johns River with Sisters Creek to the north and Pablo Creek to the south. The area of the river where the IWW crosses the St. Johns River produces currents that can actually turn an inbound and under powered ship around. In addition, the U.S. Coast Guard describes the junction of the IWW with the St. Johns River as one of particular concern, subject to strong and unpredictable crosscurrents at various stages of tide.

To avoid those difficult ebb flow crosscurrents, the St. Johns Bar Pilots and the Captain of the Port have enacted a restriction which requires vessels with a draft greater than 33 feet to wait on a flood tide before entering or leaving the harbor. The sponsor, the Jacksonville Port Authority, has requested the Corps of Engineers to recommend measures that will allow the St. Johns Bar Pilots and the Captain of the Port to remove those restrictions.

7. Methodology. The project alternative plans were evaluated using a St. Johns River circulation model in addition to ship simulator studies. The circulation models were developed by Corps of Engineers staff, using the hydrodynamic models RMA-2 and RMA-10. Current velocities and flow fields were developed for all alternatives using the two-dimensional model RMA-2. The recommended plan, relocation of the Mile Point Training Wall was determined to be the most effective and feasible plan. This alternative was then verified using the three-dimensional model RMA-10. Further details of this analysis are available in the Hydraulics and Hydrology Attachment. Outputs from the hydrodynamic models were then used as inputs into the ship simulator studies detailed in the Hydrodynamic Model Report (Attachment A).

8. Effects of Recommended Plan. Numerical hydrodynamic modeling of the proposed channel improvements and recommended features for the Mile Point project shows changes to current vectors (velocities and direction) under flood and

ebb tide. Numerical modeling results indicate that the dangerous crosscurrents exiting the IWW southern channel under ebb tide will be redirected to more closely parallel the alignment of the Federal navigation channel instead of being focused toward the erosion prone areas along the northern shoreline of Mile Point. This reduction in crosscurrents should allow for the restriction of ebb tide transit for deep-draft vessels to be lifted. Examination of the maximum flood and ebb tide current vectors indicate that flow velocity magnitudes 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 feet/sec less under the with-project condition. This comparison suggests that little or no significant net increase in shoaling rates will occur within the Jacksonville Harbor Federal channel over existing project conditions.

A natural shift of the Intracoastal Waterway 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. Higher velocities along the eastern side have the potential to scour and undermine the location of the new training wall; therefore this training wall will be designed with significant scour protection.

It is anticipated that the new realignment of the Mile Point Training Wall will produce flows coming out of the IWW that are more aligned with the Federal navigational channel. This should cause a drop in water velocity magnitude in the areas north of the navigational channel at Mile Point, as seen in Figures 19 and 20 of the Hydraulics and Hydrology Attachment.

Little or no significant net increase in shoaling of the Intracoastal Waterway or the Federal Navigational channel is predicted as a result of the reconfiguration of the Mile Point Training Wall.

C. GEOTECHNICAL

9. General. The geotechnical investigations and the geologic conditions encountered within the scope of study of the Feasibility Report are presented in an Attachment to this Appendix. The Attachment includes preliminary core boring locations and associated analytical data. The current level of field work completed pertains to the Feasibility Study. Additional investigations with borings will be needed to enhance the data to bring it to Plans and Specifications (P&S) standards.

D. DESIGN AND CONSTRUCTION

10. General. A project location map is shown on Plate A-1 and a vicinity map is shown on Plate A-2. The proposed project plan is shown on Plate A-3 and typical sections of the relocated Training Wall East and West Legs are provided on Plate A-7. Other plan details are provided on Plates A-4, A-5, A-6, A-8, A-10 and A-11.

11. Structure Removal and Required Excavation. The western most 3110 feet of the existing training wall will be removed and the entire mouth of San Pablo creek at its confluence with the St. Johns River will be dredged to -12 feet MLW plus 1 foot of allowable overdepth. Total estimated quantity of material to be excavated is up to approximately 889,000 cubic yards (cy). All usable stone material recovered from the existing training wall will be stockpiled for use in the East Leg of the relocated training wall and all other material excavated will be placed as beneficial use in the Salt Marsh Mitigation Area and as foundation for the relocated training wall legs. It is estimated that approximately 14,600 cy of armor stone can be recovered for reuse purposes; however, additional geophysical exploration is needed to more precisely ascertain the exact quantities of stone available for reuse.

12. Side Slopes. The design side slopes were derived from historical project information, an analysis of the materials to be dredged and existing channel topography. For estimating excavation volumes, side slopes along the channel length with predominantly SP material have been excavated to 1V:3H. Existing boring data in the area to be excavated for this project show SP material.

13. Overdepth. An additional 1-foot of allowable overdepth is included in the estimated excavation quantities. The allowable overdepth would be included to provide for inaccuracies in the dredging process.

14. Relocated Training Wall. Design of the relocated training wall legs was predicated on an analysis of the original design, repair designs, current velocities from hydrodynamic modeling (further explained in Attachment A, Hydrodynamic Model Report), and predicted wave heights generated from ship traffic. Existing ships are defined as Panamax vessels with a Length Overall (LOA) of 950 feet and a beam of 106 feet. In order to account for the likelihood of larger vessels using Jacksonville Harbor in the future with or without deepening of the harbor once the Panama Canal expansion is complete, a vessel of 984 feet LOA and a beam of 122 feet was considered. A previous study of Chicopit Bay from 1997 identified that at any given speed the future vessels produce between one-half foot and 1-foot higher waves than existing vessels due to the increased beam/length of entry ratio. The result is a recommended design wave height of 5 feet for the East Leg and 3 feet for the West Leg. Maximum current velocities of approximately 5 feet per second (fps) are expected to occur as a result of the project although it is anticipated that the current velocities along the West Leg will decrease over time once the entire project is constructed. 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 2050 feet of training wall tying into the existing structure on Helen Cooper Floyd Park and the West Leg consists of building approximately 4250 feet of training wall across the breakthrough at Great Marsh Island. Estimated quantities associated with the East Leg are 26,900 cubic yards (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 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 square yards of filter fabric. Refer to Plate A-7 for training wall typical sections and Table.

The project area is very dynamic and due to the complex hydrologic processes the conditions are subject to change over relatively short periods of time. Additional survey data and data densification will be needed to refine the design template during the Preconstruction, Engineering and Design (PED) phase along the entire alignment of the relocated training wall West and East Legs. The templates presented in Plate A-7 are considered typical and the final structure design could vary based on actual existing bottom conditions at time of PED development.

15. Flow Improvement Channel. Due to shoaling in Chicopit Bay, likely caused by the breakthrough at Great Marsh Island, historic flow paths from Mt. Pleasant and Greenfield Creeks to Pablo Creek have been greatly diminished. In order to restore this flow path and increase flushing of sediments and tidal exchange in Chicopit Bay, a flow improvement channel will be constructed in conjunction with the training wall relocations and restoration of Great Marsh Island. The flow improvement channel would be constructed to a depth of -6 feet MLW plus 1-foot of allowable overdepth to account for the inaccuracies of dredging. The channel will be 80 feet in width and approximately 3623 feet in length. These dimensions are predicated primarily on an analysis of historical conditions that existed prior to the breakthrough of Great Marsh Island. A total of up to approximately 72,000 cubic yards would be removed from the F.I.C. and all dredged material will be placed in the designated Material Placement Area to expand the acreage of the salt marsh restoration.

16. Disposal Area. It is anticipated that all of the construction material not recovered for reuse would be placed in the Salt Marsh Mitigation Area as a beneficial use dredged material. Refer to Plate A-3 for the approximate location of the Material Placement/Mitigation Area and Plate A-8 for the site plan. As mitigation for the relocated East Leg of the training wall the creation of approximately 18.2 acres of both high marsh and low marsh will be required. By using the remainder of the material to be excavated for the project a total of approximately 53 acres of marsh will be created. It is anticipated that the construction of the marsh will take place in 2 phases. Phase 1 will consist of the material placement from required project excavation that is anticipated to be performed primarily by hydraulic means and phase 2 will follow after a period of time to grade the material to the correct elevations, create tidal flow channels, and plant vegetation. The phasing of this construction is important to allow for evaluation of the actual final quantity of material placed in the site, the consolidation of the dredged material and settlement of underlying materials. An adjustment of the acreages of high marsh versus low marsh may be needed to balance the material that is actually placed within the site. During initial material placement it will be necessary to contain the dredged material to allow for settlement and dewatering of the dredge slurry. Containment will be accomplished on the north side by the new West Leg of the training wall, on the south side by the use of geotube(s) filled with dredged material and on the east and west by use of removable water dams. The water dams will be set to an elevation of approximately +7.5 feet MLW in order to prevent the loss of dredged material into the surrounding existing wetlands on the east and west. The geotube(s) on the south will be set to an elevation of approximately +5 feet MLW which corresponds to

the MHHW level and will allow for retention of dredged material within the disposal area, clarification of the dredge slurry and subsequent return of decant water to the environment. Final fill elevation is not precisely known due to the large number of variables involved with the construction process; however, they should not exceed +2.5 MLW. Additional surveys and geotechnical exploration will be needed during the PED phase to refine design parameters and revise quantity requirements. Additional details regarding the mitigation requirements and restoration plans are provided in Appendix D of this report.

17. Construction Procedure. For cost estimating purposes, it is anticipated that landside excavators would be utilized to remove material on Helen Cooper Floyd Park above the waterline and a 16 inch cutter-suction dredge would be used to remove material to elevation -13 feet MLW in addition to performing the dredging of the F.I.C. to -7 feet MLW. A crane and barge(s) would be required for removal of existing stone from the segment of training wall to be removed and for placement of the relocated training wall East and West Legs. Areas of deep water along the relocated training wall alignments will need to be filled and possibly surcharged prior to stone placement in order to provide structure foundation. Sequence of overall construction will be at the discretion of the Contractor except that the construction of the West Leg Training Wall will be required prior to material disposal in the Great Marsh Island restoration area and the construction of the F.I.C. will be the last order of work. A follow-on contract will be required to perform final restoration of Great Marsh Island including final grading for areas of low and high salt marsh, tidal channels and planting.

E. RELOCATIONS

18. General. The project sponsor would be required to assume the costs of all relocations and alterations.

19. Utilities. There are no known submarine crossings of local or long distance phone, cable television, electrical, sewerage or drinking water lines in the project vicinity as noted in the Jacksonville Harbor Feasibility Study dated September 1998 (see Plate A-12). During a site visit in 2008 it was noted that a wastewater outfall pipe exists that discharges into the St. Johns River near the east end of the existing training wall on Helen Cooper Floyd Park that was not identified during the 1998 study. It appears that this outfall pipe lies well outside the Federal Project and training wall relocation footprint.

F. SHIP SIMULATION STUDY

20. Discussion. The Report for the ship simulation study is provided in Attachment C. Development of the simulation database, model verification, alternatives testing, study conclusions, and associated recommendations are included in the report. The information provided is essential for a complete understanding of the likelihood that

an engineering solution can be provided that will lessen or eliminate the threats to navigation safety at Mile Point during ebb flow in the federal channel. Two important components of the simulation study documentation are not included in the paragraphs that follow. The testing ship track plots and the pilot post-simulation analysis question and comment sheets are not provided for review. The track plots and comment sheets are considered to be proprietary intellectual information by the St Johns Bar Pilots Association. A copy of this information is held in confidence by ERDC and the District Office (Philip Sylvester 904-232-1142). In response to a request from Headquarters, additional ship simulation work was initiated in June of 2009 to test the feasibility of a widener in Training Wall Reach as a solution to vessel controllability issues at Mile Point. Proof of Concept documentation related to that work is provided in Attachment D.

G. OPERATION AND MAINTENANCE

21. General. 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.

22. Estimated Annual Cost. Due to existing current velocities, the Jacksonville Harbor and Intracoastal Waterway channels in the project vicinity presently require little to no maintenance. According to operations managers in CESAJ-OD-N this reach of the Jacksonville Harbor project is maintenance dredged approximately every 5 years and the IWW reaches DU-1 through DU-7 have required no maintenance in the past 50 years. 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 feet MLW are of such magnitude to expect little deposition to occur in either of the channels. It may however become necessary to realign the Intracoastal Waterway to the east if deposition occurs along the West Leg of the relocated training wall.

The Chicopit Bay Flow Improvement Channel is also not expected to require maintenance dredging. As shown in Figures 16 and 17, on pages 22-23 of the main report, prior to the breakthrough of Great Marsh Island, a natural channel exists in the same location as the proposed Flow Improvement Channel. These historical maps show water depths up to 10 feet 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 Flow Improvement Channel. It is reasonable to expect the water velocities in the channel to be sufficient to prevent shoaling within the channel.

Historically the training walls along the St. Johns River have performed well and required very little maintenance. The White Shells Training Wall has received no

maintenance since 1931 and is not scheduled for any maintenance in the near term, the St. Johns Bluff Training Wall received no maintenance between 1931 and 1996 (65 years), the Bartram Island Training Wall received no maintenance between 1931 and 1998 (67 years) and the Mile Point Training Wall received no maintenance for a period of 70 years between 1931 and 2001. Therefore, with proper design and construction it is anticipated that no maintenance of the relocated training wall legs will be required over the project life of 50 years.

23. Navigation Aids. The U.S. Coast Guard (USCG) would be responsible for providing and maintaining navigation aids. Warning signs and lights that are within the training wall reach designated to be removed will no longer be needed once construction has been completed and will be removed along with that portion of the training wall. There are additional range lights and channel markers that will require relocation and the USCG has provided an estimated cost for this effort. These costs are incorporated into the MCACES estimate in the Cost Engineering Appendix.

H. QUANTITIES AND COST ESTIMATES

24. Summary of Quantities. A summary of the major construction items are presented in Table A-2 below. Mitigation construction quantities are discussed in the Mitigation Plan, Appendix D.

25. Summary of Costs. The estimates of first cost for construction of the NED Plan (VE-3B+FIC) were prepared using MCACES software and are presented in the Cost Engineering Appendix. The estimate includes a narrative, a summary cost, and a detailed cost showing quantity, unit cost, and the amount for contingencies for each cost item. The costs of the non-construction features of the project are also included in the cost estimate. Costs are currently provided assuming beneficial use of disposal material at Great Marsh Island.

The costs have been prepared for an effective date of February 2011.

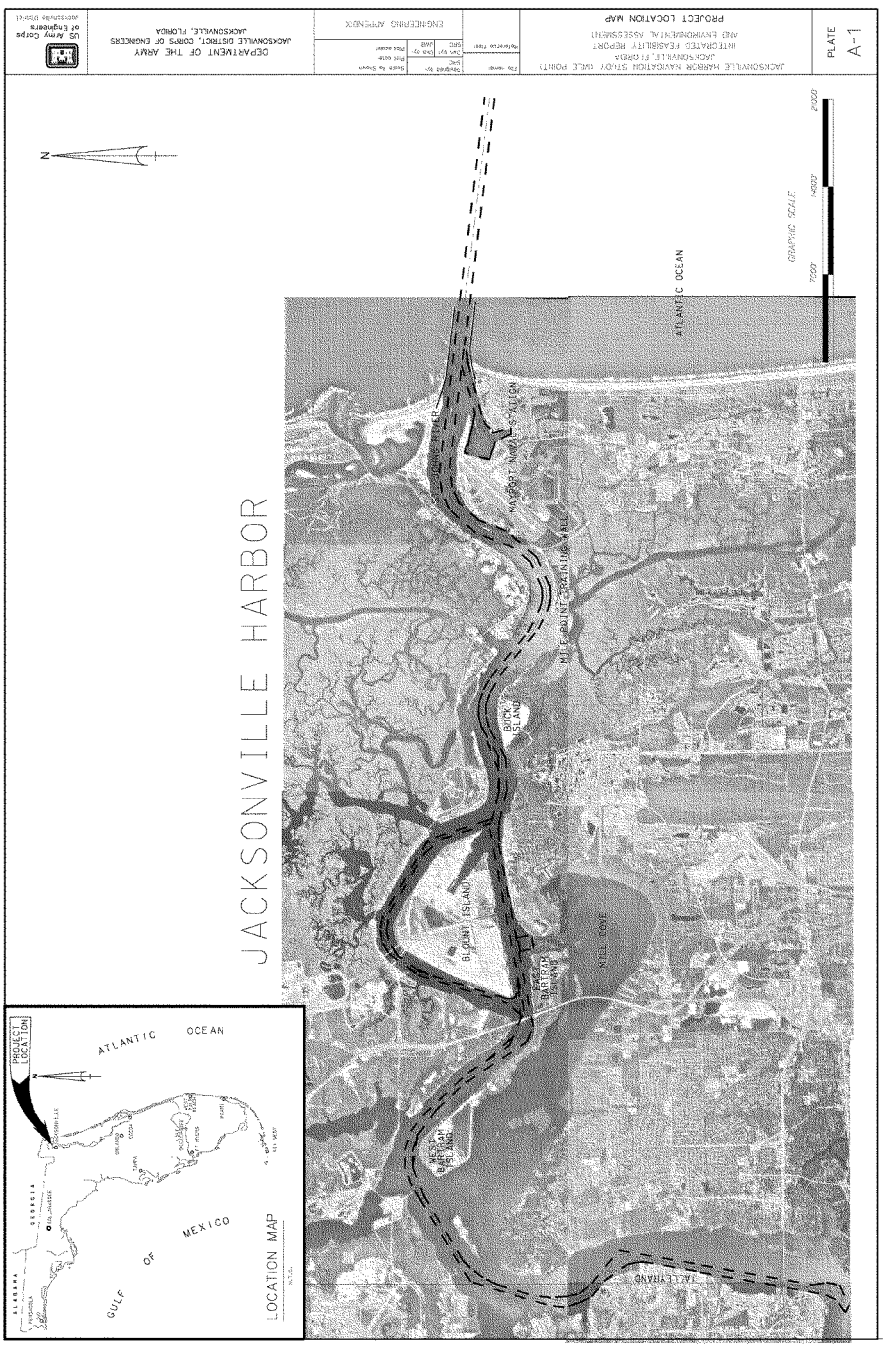
Table A-1: Regional Sea Level vs. Year- Mile Point

	Baseline (Historic)			Intermediate (NRC Curve I)			High (NRC Curve III)		
	Year	mm	ft	Year	mm	ft	Year	mm	ft
Base Year	2015	0.0	0.00	2015	0	0.00	2015	0	0.00
	2020	12.0	0.04	2020	19.4	0.06	2020	43.7	0.14
	2025	24.0	0.08	2025	40.0	0.13	2025	92.3	0.30
	2030	36.0	0.12	2030	61.8	0.20	2030	146.0	0.48
	2035	48.0	0.16	2035	84.8	0.28	2035	204.8	0.67
25 Year	2040	60.0	0.20	2040	109.0	0.36	2040	268.5	0.88
	2045	72.0	0.24	2045	134.3	0.44	2045	337.3	1.11
	2050	84.0	0.28	2050	160.8	0.53	2050	411.1	1.35
	2055	96.0	0.31	2055	188.5	0.62	2055	490.0	1.61
	2060	108.0	0.35	2060	217.4	0.71	2060	573.8	1.88
50 Year	2065	120.0	0.39	2065	247.4	0.81	2065	662.7	2.17

TABLE A-2
Summary of Construction Quantities

Item	Quantity
Clearing and Grubbing	13 acres
Excavation Area	
- Upland Removal and Disposal	67,000 cubic yards
- Dredging and Disposal	822,000 cubic yards
Flow Improvement Channel	
- Dredging and Disposal	72,000 cubic yards
Mitigation/Placement Area	
- Geotextile tube Containment 3 tubes at 1400' each	4200 linear feet
- Water Dam Containment	3275 linear feet
West Leg Training Wall	
- Filter Fabric	20,300 square yards
- Filter/Bedding Stone	5,000 cubic yards
- Concrete Structural Units (567 units at 10cy/unit)	5,670 cubic yards of 5000 psi marine grade, fiber reinforced, pH neutral concrete
- Foundation Fill (from excavation area) with Geotextile Bags/Tubes	40,500 cubic yards plus 32,000 sy of bags/tubes
East Leg of Training Wall	
- Existing TW Stone Removal and Reuse	14,600 cubic yards
- Filter Fabric	22,500 square yards
- Filter Stone	11,900 cubic yards
- Armor Stone	12,300 cubic yards*

*total required in structure is 26,900 cy including reused material


US Army Corps of Engineers
JACKSONVILLE DISTRICT
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
ENGINEERING APPENDIX
PROJECT LOCATION MAP
JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT)
JACKSONVILLE, FLORIDA
INTEGRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
PLATE
A-1
JACKSONVILLE HARBOR
ATLANTIC OCEAN
GRAPHIC SCALE
7500'
14500'
21000'
BLOUNT ISLAND
BUCK ISLAND
MILE POINT TRAINING WALL
NAVPORT NAVAL STATION
BARTRAM ISLAND
NEEL COVE
WEST BARTRAM ISLAND
JALLEYRAND
PROJECT LOCATION
ATLANTIC OCEAN
GULF OF MEXICO
LOCATION MAP

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ENGINEERING APPENDIX
JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT)
JACKSONVILLE, FLORIDA
INTEGRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
PROJECT VICINITY MAP - EXISTING PROJECT
PLATE
A-2
Mayport Naval Station
St. Johns River
North Shore Mile Point
Helen Cooper Floyd Park
Great Marsh Island
Greenfield Islands
Buck Island

PLATE A-3
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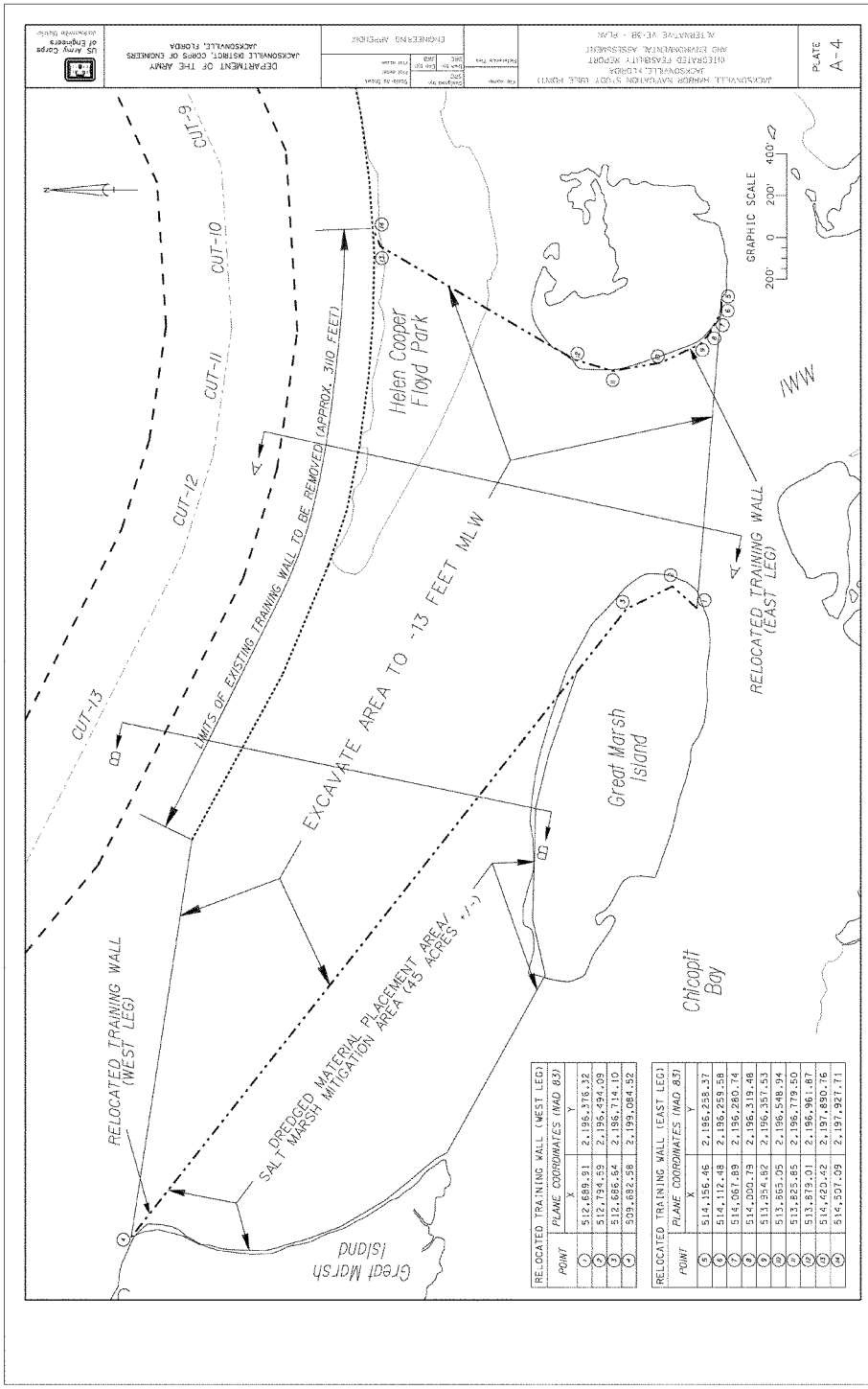
ENGINEERING APPENDIX
PROJECT VICINITY MAP - RECOMMENDED PLAN
Mayport Naval Station
St. Johns River
Buck Island
Great Marsh Island
San Pablo Creek
Greenfield Islands


JACKSONVILLE HARBOR NAVIGATION STUDY, DEAL POINT
JACKSONVILLE, FLORIDA
DETAILED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
ALTERNATIVE 4F-3B - PLAN
PLATE A-4
DEPARTMENT OF THE ARMY
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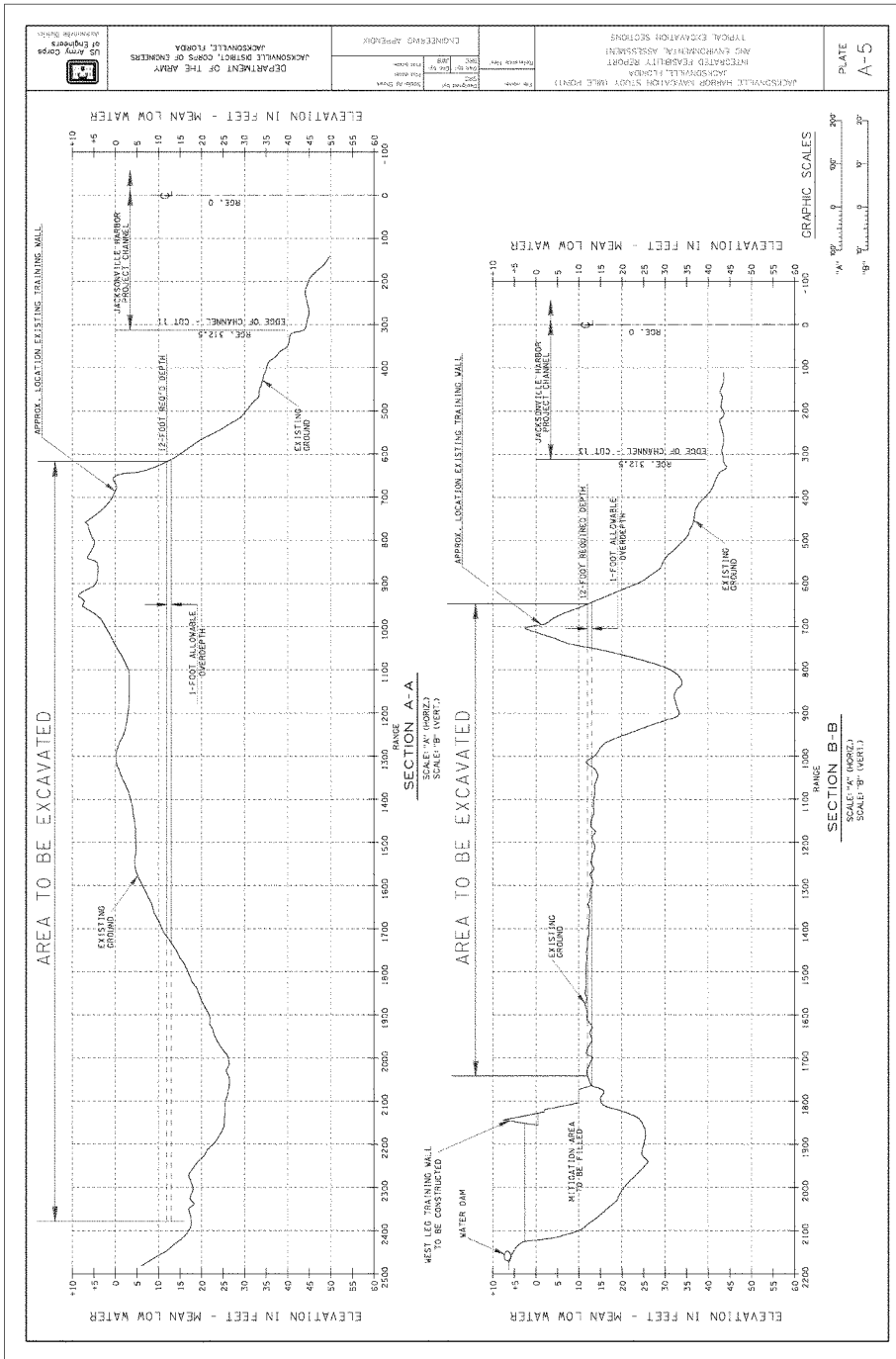
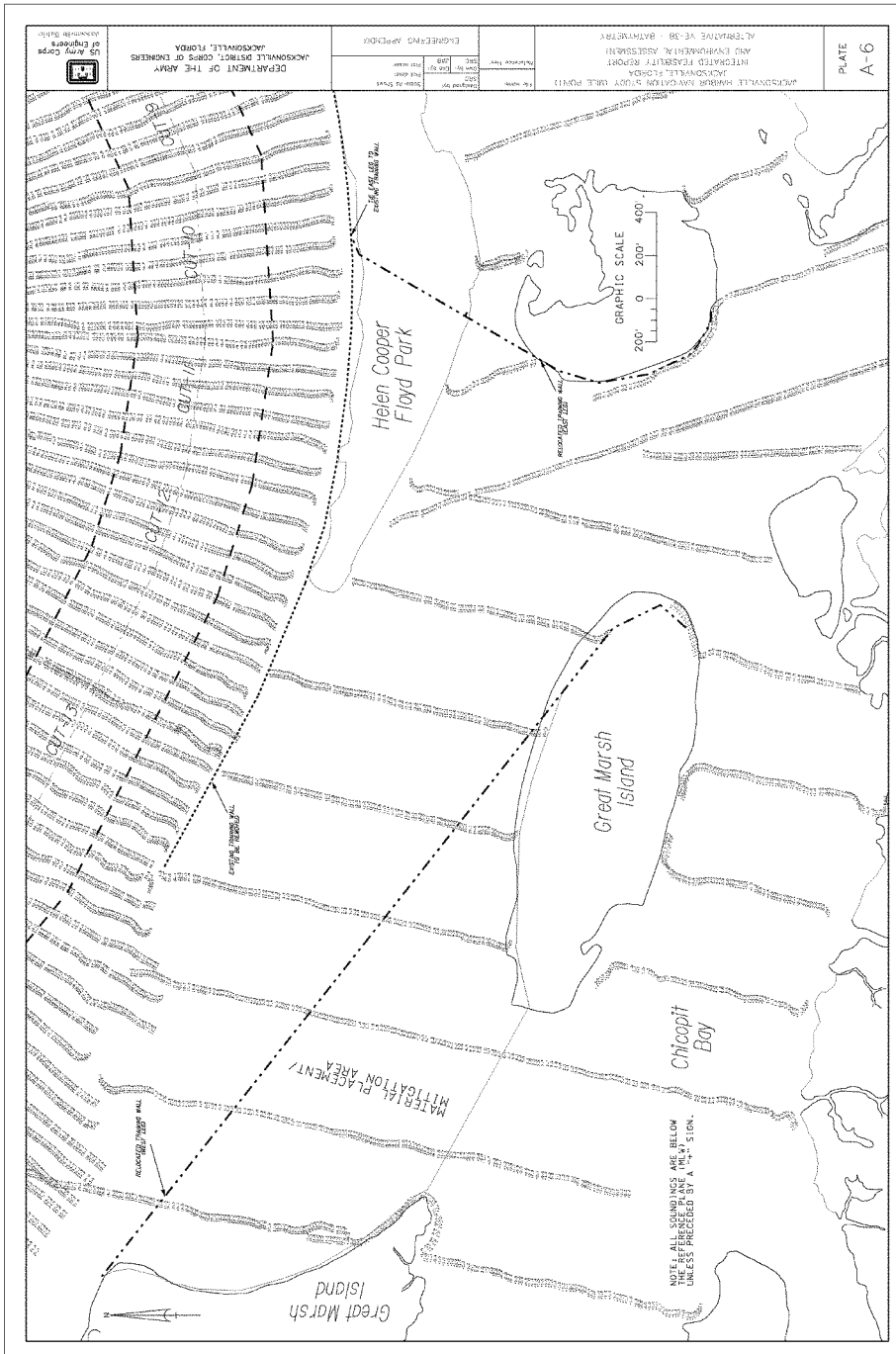
JACKSONVILLE, FLORIDA
US Army Corps of Engineers
ENGINEERING APPROVED
GRAPHIC SCALE
200' 0 200' 400'
CUT-9
CUT-10
CUT-11
CUT-12
CUT-13
LIMITS OF EXISTING TRAINING WALL TO BE REMOVED (APPROX. 3110 FEET)
Helen Cooper Floyd Park
EXCAVATE AREA TO -13 FEET MLW
RELOCATED TRAINING WALL (EAST LEG)
RELOCATED TRAINING WALL (WEST LEG)
DREDGED MATERIAL PLACEMENT AREA/ SALT MARSH MITIGATION AREA (45 ACRES +/-)
Great Marsh Island
Chicopit Bay
INTRACOASTAL WATERWAY
RELOCATED TRAINING WALL (WEST LEG)
POINT
PLANE COORDINATES (NAD 83)
X
Y
1 512,689.91 2,196,376.32
2 512,734.59 2,196,494.09
3 512,686.64 2,196,714.10
4 509,682.58 2,199,084.52
RELOCATED TRAINING WALL (EAST LEG)
POINT
PLANE COORDINATES (NAD 83)
X
Y
5 514,156.46 2,196,258.37
6 514,112.48 2,196,259.58
7 514,067.89 2,196,280.74
8 514,000.79 2,196,319.48
9 513,954.62 2,196,357.53
10 513,665.05 2,196,548.94
11 513,625.85 2,196,779.50
12 513,879.01 2,196,961.87
13 514,420.42 2,197,890.76
14 514,507.09 2,197,927.71


US Army Corps of Engineers
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
ENGINEERING APPENDIX
JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT)
JACKSONVILLE, FLORIDA
INTEGRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
TYPICAL EXCAVATION SECTIONS
PLATE
A-5
AREA TO BE EXCAVATED
APPROX. LOCATION EXISTING TRAINING WALL
JACKSONVILLE HARBOR PROJECT CHANNEL
EDGE OF CHANNEL - CUT 13
RGE. 312.5
RGE. 0
12-FOOT REQ'D DEPTH
1-FOOT ALLOWABLE OVERDEPTH
EXISTING GROUND
WEST LEG TRAINING WALL TO BE CONSTRUCTED
WATER DAM
MITIGATION AREA TO BE FILLED
ELEVATION IN FEET - MEAN LOW WATER
RANGE
SECTION A-A
SCALE: "A" (HORIZ.)
SCALE: "B" (VERT.)
SECTION B-B
SCALE: "A" (HORIZ.)
SCALE: "B" (VERT.)
GRAPHIC SCALES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EXAGREEING APPENDIX
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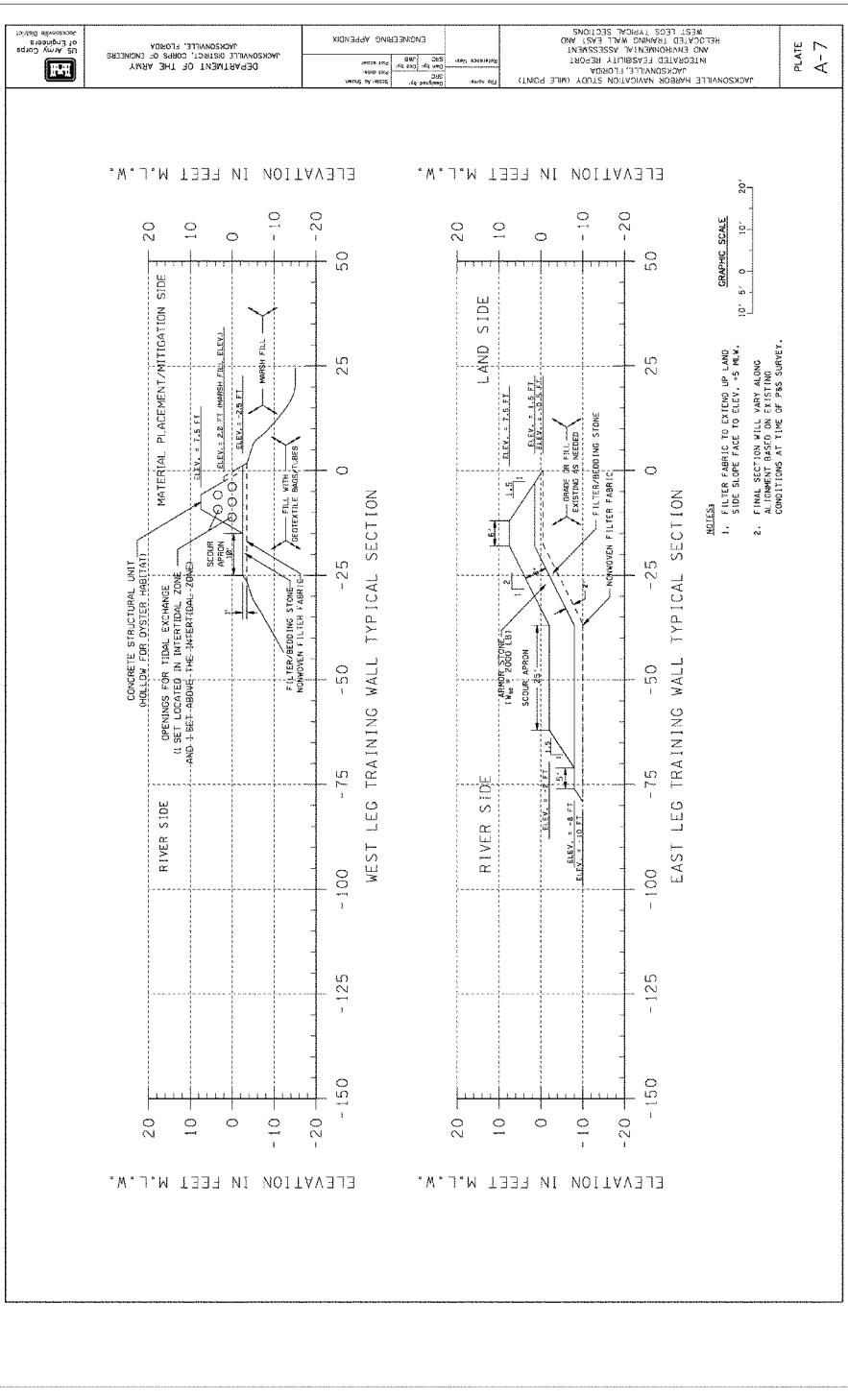
JACKSONVILLE, FLORIDA
INTEGRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
ALTERNATIVE VE-38 - BATHYMETRY
PLATE
A-6
GRAPHIC SCALE
200' 0 200' 400'
Helen Cooper Floyd Park
Great Marsh Island
Chicopit Bay
MATERIAL PLACEMENT/ MITIGATION AREA
Great Marsh Island
NOTE: ALL SOUNDINGS ARE BELOW THE REFERENCE PLANE (MLW) UNLESS PRECEDED BY A "+" SIGN.


JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT)
JACKSONVILLE, FLORIDA
INTEGRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
RELOCATED TRAINING WALL EAST AND
WEST LEGS TYPICAL SECTIONS
PLATE
A-7
ENGINEERING APPENDIX
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JACKSONVILLE, FLORIDA
US Army Corps of Engineers
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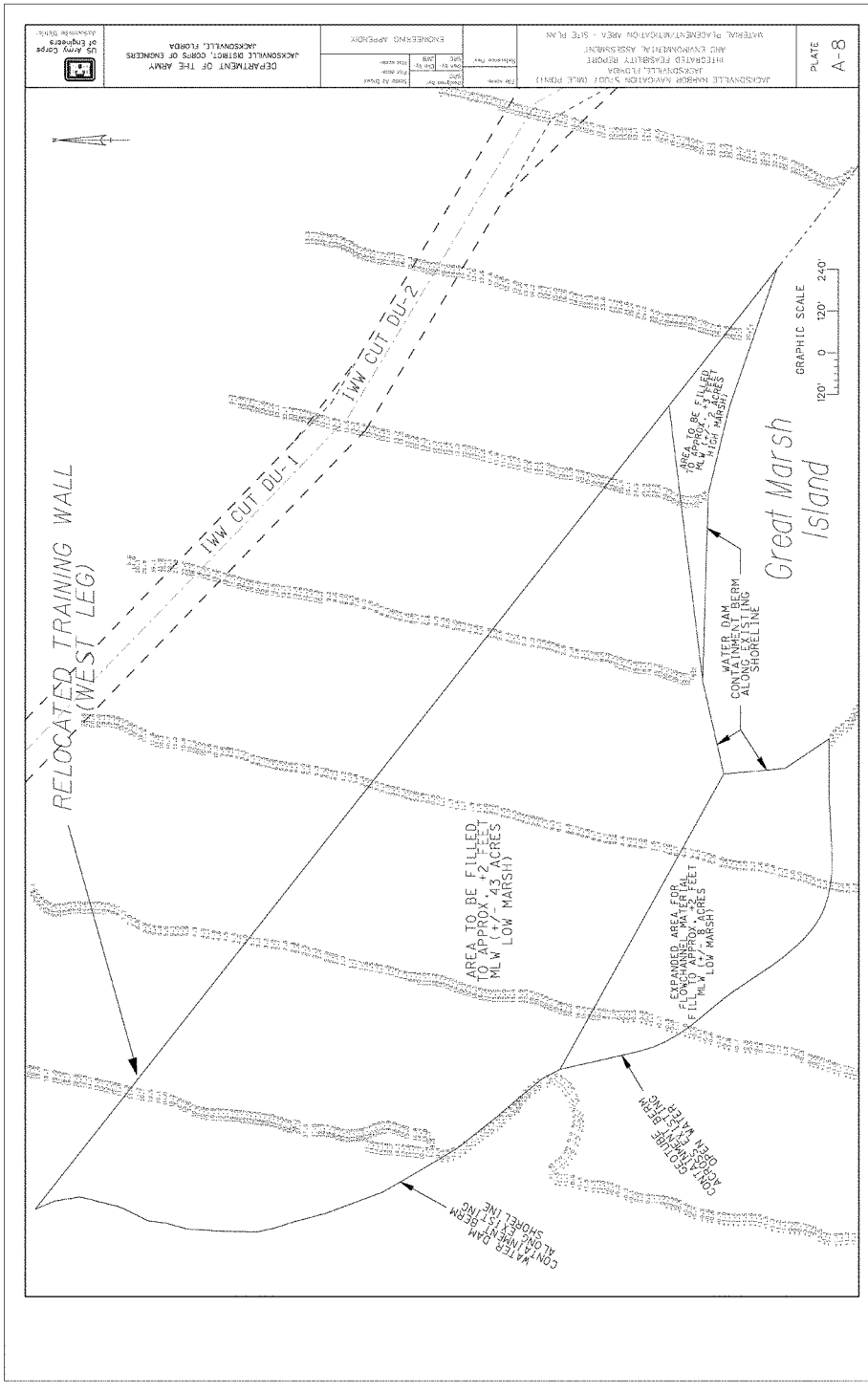
WEST LEG TRAINING WALL TYPICAL SECTION
EAST LEG TRAINING WALL TYPICAL SECTION
ELEVATION IN FEET M.L.W.
RIVER SIDE
LAND SIDE
MATERIAL PLACEMENT/MITIGATION SIDE
CONCRETE STRUCTURAL UNIT
(HOLLOW FOR OYSTER HABITAT)
OPENINGS FOR TIDAL EXCHANGE
(1 SET LOCATED IN INTERTIDAL ZONE
AND 1 SET ABOVE THE INTERTIDAL ZONE)
SCOUR APRON
FILTER/BEDDING STONE
NONWOVEN FILTER FABRIC
FILL WITH GEOTEXTILE BAGS/TUBES
MARSH FILL
ARMOR STONE
SCOUR APRON
GRADE IN FILL EXISTING AS NEEDED
NOTES:
1. FILTER FABRIC TO EXTEND UP LAND SIDE SLOPE FACE TO ELEV. +5 M.L.W.
2. FINAL SECTION WILL VARY ALONG ALIGNMENT BASED ON EXISTING CONDITIONS AT TIME OF P&S SURVEY.
GRAPHIC SCALE
10' 5' 0 10' 20'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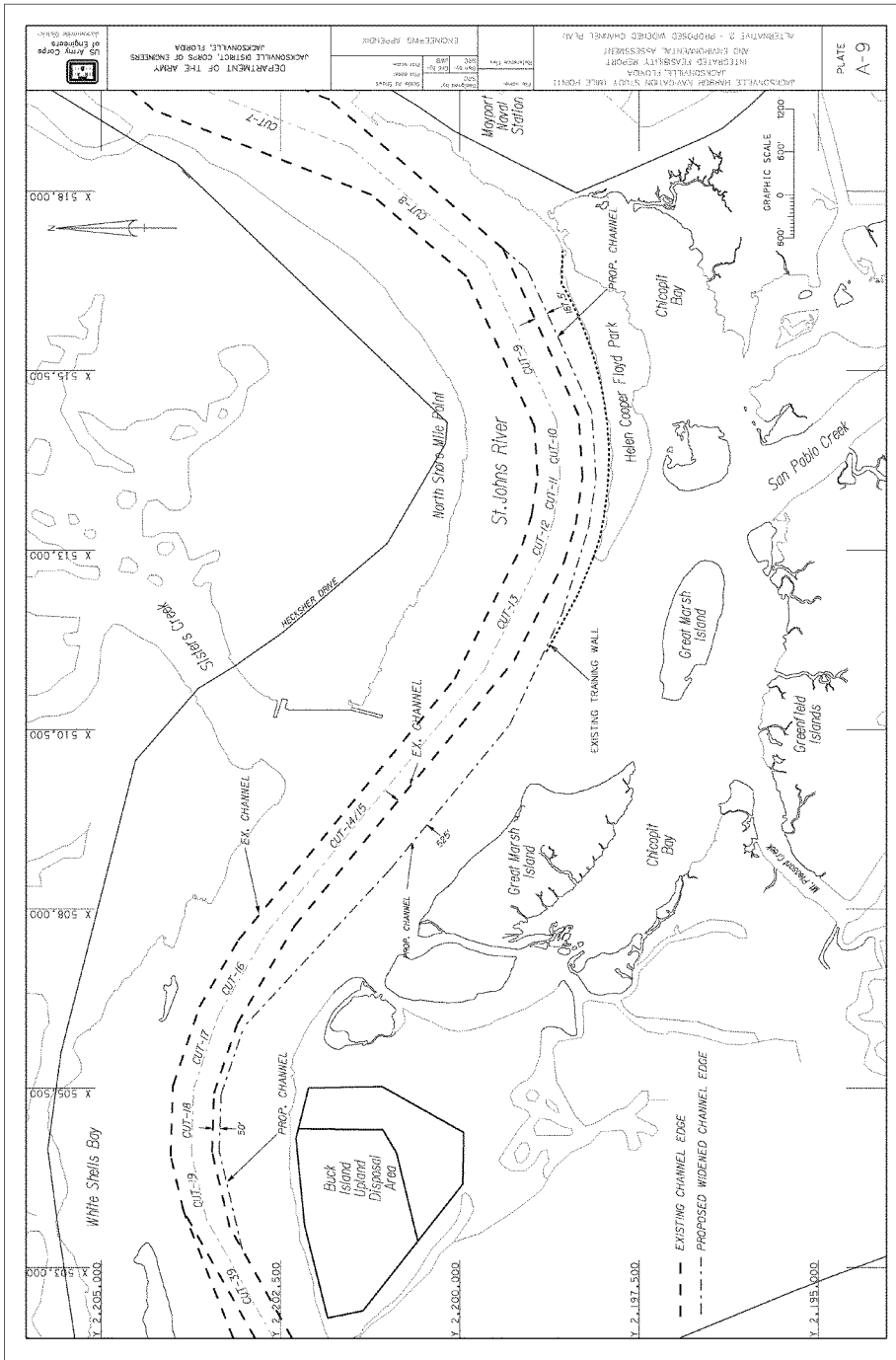
JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT)
JACKSONVILLE, FLORIDA
HYDRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
MATERIAL PLACEMENT/MITIGATION AREA - SITE PLAN
PLATE
A-8
RELOCATED TRAINING WALL
(WEST LEG)
IWW CUT DU-1
IWW CUT DU-2
AREA TO BE FILLED
TO APPROX. +2 FEET
MLW (+/- 43 ACRES
LOW MARSH)
AREA TO BE FILLED
TO APPROX. +3 FEET
MLW (+/- 2 ACRES
HIGH MARSH)
Great Marsh
Island
WATER DAM
CONTAINMENT BERM
ALONG EXISTING
SHORELINE
EXPANDED AREA FOR
FLOWCHANNEL MATERIAL
FILL TO APPROX. +2 FEET
MLW (+/- 8 ACRES
LOW MARSH)
CONTAINMENT BERM
ACROSS EXISTING
OPEN WATER
WATER DAM
CONTAINMENT BERM
ALONG EXISTING
SHORELINE
GRAPHIC SCALE
120' 0 120' 240'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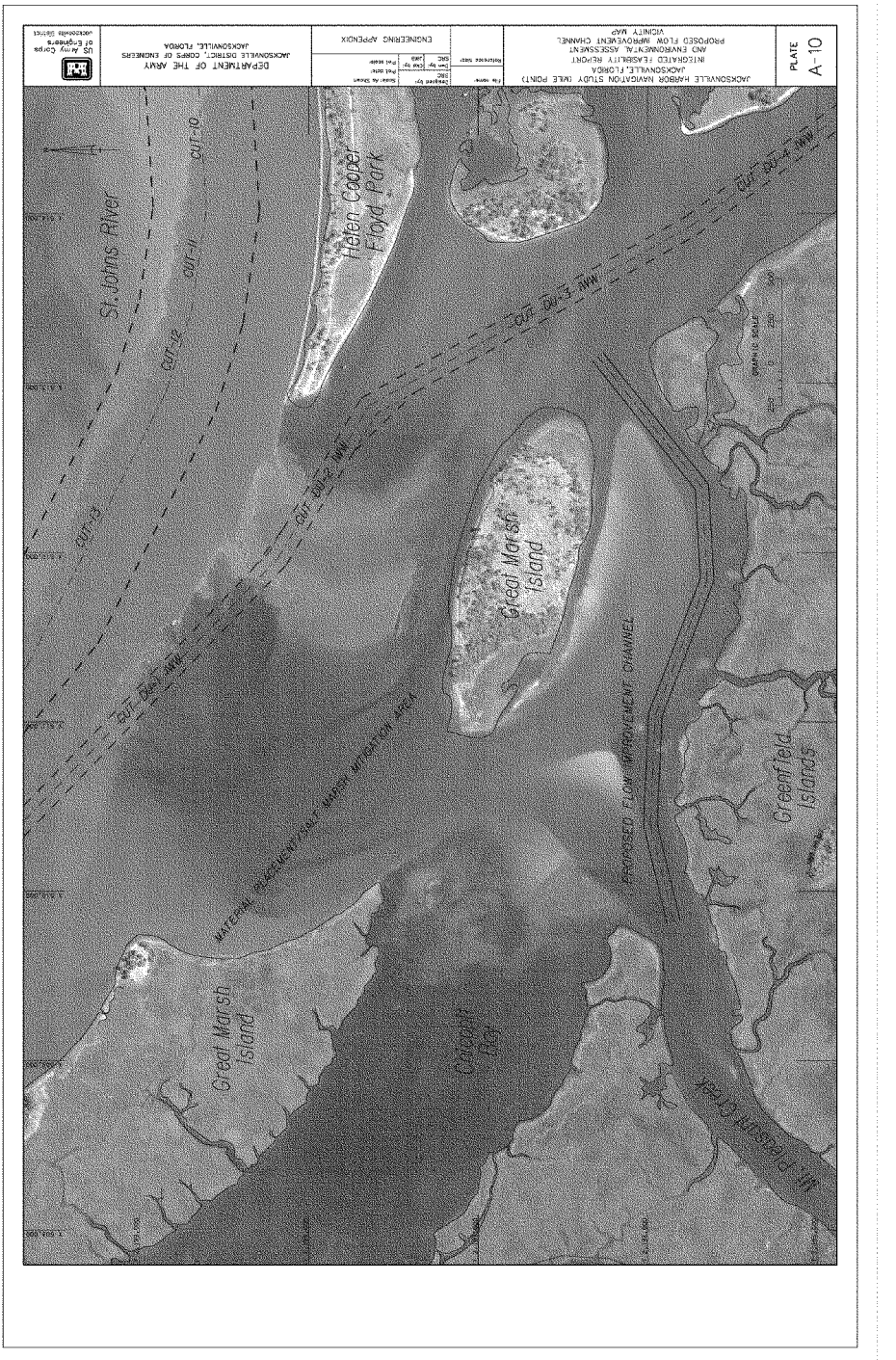
JACKSONVILLE, FLORIDA
ENGINEERING APPENDIX
JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT)
JACKSONVILLE, FLORIDA
INTEGRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
ALTERNATIVE 2 - PROPOSED WIDENED CHANNEL PLAN
PLATE
A-9
GRAPHIC SCALE
600' 0 600' 1200'
Mayport Naval Station
CUT-7
CUT-8
CUT-9
CUT-10
CUT-11
CUT-12
CUT-13
CUT-14/15
CUT-16
CUT-17
CUT-18
CUT-19
CUT-39
PROP. CHANNEL
Chicopit Bay
Helen Cooper Floyd Park
San Pablo Creek
North Shore Mile Point
St. Johns River
Sisters Creek
HECKSHER DRIVE
EXISTING TRAINING WALL
Great Marsh Island
Greenfield Islands
EX. CHANNEL
525'
Mt. Pleasant Creek
White Shells Bay
Buck Island Upland Disposal Area
50'
EXISTING CHANNEL EDGE
PROPOSED WIDENED CHANNEL EDGE
X 518,000
X 515,500
X 513,000
X 510,500
X 508,000
X 505,500
X 503,000
Y 2,205,000
Y 2,202,500
Y 2,200,000
Y 2,197,500
Y 2,195,000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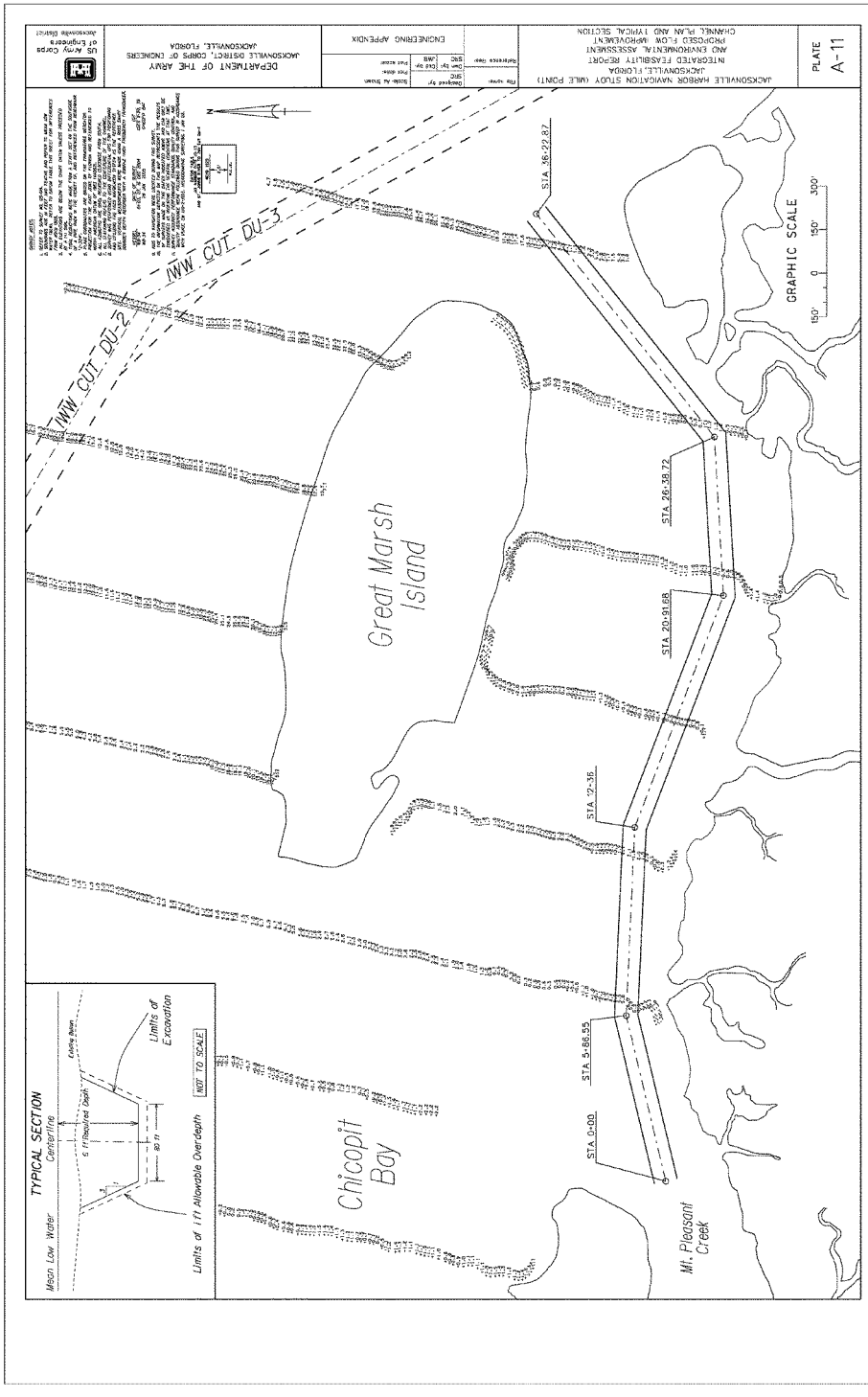
JACKSONVILLE, FLORIDA
ENGINEERING APPENDIX
JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT)
JACKSONVILLE, FLORIDA
INTEGRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
PROPOSED FLOW IMPROVEMENT CHANNEL
VICINITY MAP
PLATE
A-10
St. Johns River
Helen Cooper Floyd Park
Great Marsh Island
Greenfield Islands
Great Marsh Island
Colcott Bay
Mt. Pleasant Creek
CUT-10
CUT-11
CUT-12
CUT-13
CUT-DU-1 IWW
CUT-DU-2 IWW
CUT-DU-3 IWW
CUT-DU-4 IWW
MATERIAL PLACEMENT/SALT MARSH MITIGATION AREA
PROPOSED FLOW IMPROVEMENT CHANNEL


JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT)
JACKSONVILLE, FLORIDA
INTEGRATED FEASIBILITY REPORT
AND ENVIRONMENTAL ASSESSMENT
PROPOSED FLOW IMPROVEMENT
CHANNEL PLAN AND TYPICAL SECTION
PLATE A-11
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
ENGINEERING APPENDIX
US Army Corps of Engineers
Jacksonville District
IWW CUT DU-2
IWW CUT DU-3
Great Marsh Island
Chicopit Bay
Mt. Pleasant Creek
STA 0+00
STA 5+86.55
STA 12+35
STA 20+91.68
STA 26+39.72
STA 46+22.87
GRAPHIC SCALE
150' 0 150' 300'
TYPICAL SECTION
Mean Low Water
Centerline
Safety Berm
6 ft Required Depth
80 ft
Limits of Excavation
Limits of 1 ft Allowable Overdepth
NOT TO SCALE

JACKSONVILLE HARBOR NAVIGATION STUDY (BLUE POINT)
JACKSONVILLE, FLORIDA
DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT, CORPS OF ENGINEERS
JACKSONVILLE, FLORIDA
ENGINEERING APPENDIX
PLATE A-12
NO SCALE
SEG 1
SEG 2
SEG 3
SEG 3A
SEG 3B
SEG 4
CIRCULATION CHANNEL
ATLANTIC OCEAN
DOWNTOWN JACKSONVILLE, FL
NOTED NOTES

HYDRODYNAMIC MODEL REPORT

ATTACHMENT A

JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY
DUVAL COUNTY, FLORIDA

NUMERICAL HYDRODYNAMIC MODEL

(DRAFT)

1. INTRODUCTION. This report describes the modeling performed to provide recommendations for reducing or relocating the difficult crosscurrents during the ebb flow at the confluence of the St. Johns River with the Intracoastal Waterway (IWW) and the analysis to determine the source of the Mile Point erosion problem. The St. Johns Bar Pilots and the Captain of the Port (USCG) have enacted a restriction which requires vessels with a draft greater than 33 feet to wait on a flood tide before entering or leaving the harbor to avoid the difficult ebb flow currents.

The objectives of the proposed feasibility study involve the use of available information and hydrodynamic modeling to evaluate navigation improvements at the confluence of the Intracoastal Waterway with the St. Johns River along Training Wall Reach and Mile Point Lower Range and Turn of Jacksonville Harbor.

The objectives for the Mile Point navigation study include:

- Identify measures that reduce and/or relocate the difficult and erosive Intracoastal Waterway crosscurrents so that the St. Johns Bar Pilots and the Captain of the Port (USCG) agree to remove restrictions on deep draft navigation traffic;

- Determine the cause of the catastrophic shoreline failures at Mile Point; and

- Evaluate the hydrodynamic effects of the measures.

2. LOCATION. Mile Point is located in Duval County, Florida. It consists of about 5000 feet of shoreline located along the north shore of the St. Johns River and east of the IWW.

3. BACKGROUND. Heckscher Drive Community Club (HDCC) homeowners requested that the Corps determine the cause for the loss of land along the Mile Point shoreline. A meeting with the St. Johns Bar Pilot's Association highlighted the difficult and intense nature of the crosscurrents at the confluence of the St. Johns River with Sisters Creek to the north and Pablo Creek to the south. According to the St. Johns Bar pilots, the area of the river where the IWW

crosses the St. Johns River produces currents that can actually turn an inbound and under powered ship around. The U.S. Coast Guard describes that area as one of particular concern. It describes the junction of the IWW with the St. Johns River as subject to strong and unpredictable crosscurrents at various stages of tide.

To avoid those difficult ebb flow crosscurrents, the St. Johns Bar Pilots and the Captain of the Port have enacted a restriction which requires vessels with a draft greater than 32 feet to wait on a flood tide before entering or leaving the harbor. The sponsor, the Jacksonville Port Authority, has requested the Corps to recommend measures that will allow the St. Johns Bar Pilots and the Captain of the Port to remove those restrictions.

A House Resolution, adopted March 1998 for Mile Point, Florida, authorized the Secretary of the Army to conduct a study at Jacksonville Harbor, Florida Federal navigation project to determine whether any modifications are advisable at this time with particular reference to erosion of Mile Point shoreline. Congress added funding in the appropriations for Fiscal Year (FY) 2000 to begin the reconnaissance study. The feasibility study proceeded under that authorization.

4. Modeling. Model simulation of existing and modified or proposed conditions at Mile Point is a design process. Ship simulation of wind and current characteristics were performed by the Engineering Research and Development Center (ERDC) at Vicksburg for the proposed alternatives. SAJ constructed and applied 2-D and 3-D TABS models of the area. The 2-D model, originally developed by Resource Management Association, known as RMA-2 was used to evaluate various modifications to the jetties. The 3-D TABS model known as RMA-10 was also used. The SAJ models were used to develop water current (both magnitude and direction) output for existing condition and the proposed alternatives. Flow fields under tidal ebb and flood conditions were developed for each alternative. Problems addressed in the model include the alternatives discussed in the following section. The Water Resources Branch coordinated with the St. John's Bar Pilots, the Captain of the Harbor Pilots and the Coast Guard to estimate the desired velocity reductions of the ebb tide currents that would allow for the removal of the navigation restrictions in place.

Mile Point alternatives were evaluated using a St. Johns River circulation model extending from the ocean boundary near Mayport, Florida to Palatka, Florida (Figure 1). An existing 2-D model was expanded to 3-D using multiple horizontal layers. The 3-D model (Figure 2) extended from Mayport to Blount Island, approximately eight miles upstream of Mile Point. The 2-D model was expanded to adequately represent the storage volumes of the Intracoastal Waterway north and south of the St. Johns River. The existing conditions model was verified with existing flow data and computed tidal stages. The average net flow (4475 cfs) for

the St. Johns River at Buffalo Bluff was used in the 2-D model. The Advanced Circulation model (ADCIRC) of the St. Johns River, developed by Taylor Engineering, Inc., was used to corroborate the attainment of good hydrodynamic results by the RMA-2 model. The qualitative effect that each practical alternative will have on shoaling in the main channel was determined.

Identified alternatives to address the ebb tide navigation restrictions within the Federal channel are:

1. Construct a groin field with groins extending from Mile Point north shoreline towards the Federal channel. Assume 6 groins about 150 feet long and 15 feet wide at the top spaced about 420 feet apart.
2. Construct a submerged weir across the IWW from the Mile Point Training Wall to the Great Marsh Island.
3. Hydrodynamically model the Mile Point (Little Jetties) Training Wall at its current condition and its original design length.
4. Short Cut Turn Widener and 150 ft Training Wall Reach Widening.
5. Open the landward end of the Mile Point Training Wall to restore flow back through Chicopit Bay. Past hydrodynamic model testing involved two different opening widths, one 6 feet deep by 150 feet wide and the other 6 feet deep by 350 feet wide.
6. Hydrodynamically model the current condition of White Shells Training Wall opposite Back Island along north shoreline and its original design dimensions.
7. Relocate Mile Point Training Wall.

Investigations took place to try to determine to what extent existing Federal navigation improvements, actions by others, and natural conditions are responsible for the current shoreline erosion problems:

1. Mile Point. Investigate the erosion of the north shoreline.
2. White Shells Training Wall. Investigate the erosion, deterioration, overtopping and breakthroughs at the training wall.
3. Ward's Bank Training Wall. Investigate the erosion and deterioration of the training wall near the carrier basin at the U.S. Naval Station Mayport.
4. Huguenot Park. Investigate shoreline erosion near the landward end of the north jetty.
5. Investigate the erosion potential at Chicopit Bay caused by the proposed shoreline restoration at Mile Point.

Project alternatives were evaluated and compared with existing condition runs. Channel current profiles of direction and velocity at 1-meter intervals were made using an Acoustic Doppler Current Profiler (ADCP). ADCP data during spring tide are available for March 21, 2000 and new data were collected on October 27, 2004.

There is a substantial amount of available recent (2003) bathymetric data. Survey data was presented in a digital format compatible with CADD. The

project vertical datum is mean low water (MLW) and the horizontal datum is North American Datum 1983 (NAD 83). All surveys were done in feet.

(a) 1998 hydrographic surveys on Jacksonville Harbor indicated depths of 38 to 40 feet in the St. Johns River area over a bottom width of 500 to 650 feet.

(b) New bank to bank surveys (2003) were performed to cover the same area as 1998 surveys plus an additional 1 mile upstream and downstream. In addition, surveys were also performed to cover ½ mile up the Atlantic Intracoastal Waterway.

4.1. 2-D Modeling Approach and Data.

In this study the changes in current velocities of the proposed plans were tested using a two-dimensional hydrodynamic model. The hydrodynamic model used in this study employs the Galerkin finite element formulation to solve the vertically averaged Reynolds form of the Navier-Stokes equations with hydrostatic assumption applied. These equations are commonly known as the vertically integrated shallow water equations. The hydrodynamic model, known as RMA2-WES was originally written by Dr. Ian King and William Norton of Resource Management Associates (RMA) in Lafayette, California, under contract to the U.S. Army Corps of Engineers (USACE). The model is maintained and has been enhanced by personnel of the USACE Waterways Experiment Station (WES) in Vicksburg, Mississippi. The version used in this study was RMA2-WES 4.35.

The numerical model RMA2-WES was chosen for this study for several reasons. First, the finite element method permits the modeler to develop an unstructured mesh to define the channel geometry. The lower St. Johns River has many tributaries and secondary channels that are difficult to discretize in the sense of a structured, index based grid. The finite element method uses freely connected three-sided and four-sided elements that are knitted together by means of an element connection table, thus permitting the modeler more flexibility to resolve important geometric features that may be required to accurately compute the flow field. Second, a vertically averaged description of the hydrodynamics was sufficient to answer the questions that were posed concerning the relative impacts of the engineering alternatives on cross currents in the navigation channel at Mile Point. Third, RMA2-WES has been successfully applied to a variety of estuarine and riverine modeling studies conducted by the USACE.

The alternatives for the Jacksonville Harbor at Mile Point were compared against a base simulation of the existing conditions. The St. Johns River Mesh was built using data from a variety of sources. The bathymetric data used to generate most of the numerical mesh were digitized from the National Oceanic and Atmospheric Administration (NOAA) Nautical Charts, National Ocean Survey (NOS) Nautical Chart No. 11491 and NOS Chart No. 11492. The bathymetry of

the navigation channel was obtained from the most recent hydrographic surveys available at the Jacksonville District.

The mesh for the existing (base) condition (Figure 3) has 8,999 elements and 24,873 nodes. The depths in reference to the mean low water (MLW), range from -8 ft (= elevation of +8 ft MLW) on the training walls to 83 ft between the jetties. Maximum depths at the offshore boundary are near 80 ft. Most of the navigation channel is 40 ft deep, except for the Blount Island Channel which is 30 ft, and the Terminal Channel to Drummond Creek Range with depths varying from 34 to 38 ft. The rest of the mesh from Jacksonville to Buffalo Bluff is 15 ft deep and is composed of one-dimensional elements. More resolution was added to the navigation channel and adjacent areas around Mile Point than the rest of the grid to decrease errors within the study area. The average surface area of individual elements in the navigation channel at Mile Point is about 30,000 ft^2.

The modeled hydrodynamic boundary conditions were the same for the base and the proposed alternatives. The water discharge into the system was constant. The stream discharge applied in the St. Johns River at Buffalo Bluff was 4475 cfs, the historical mean.

The offshore boundary was defined to be 12 miles away from the coastline and extended 9 miles north and south of the St. Johns River entrance. The boundary condition was applied only on the north and south edge and consisted of a dynamically varying water surface elevation that represents the tidal fluctuations at sea. The tide selected for the runs was the spring tide of 21 March 2000. A period of large tidal range was chosen in order to provide the strongest currents for the ship simulator tests. The period of the initial simulation was 144 hrs, starting 0000 hr on 16 March 2000, which allowed the model to stabilize before the occurrence of the spring tide. This practice is commonly referred to as model spin up. The 144 hrs were divided into 15 minutes time steps. The predicted tide data was obtained from published records by NOAA NOS for the gages located at the Nassau River entrance and Jacksonville Beach (Figure 4).

4.2. 2-D Hydrodynamic Model Verification

The parameters available to adjust the model are channel bed roughness and eddy viscosity. The roughness is controlled by assignment of the Manning's *n* coefficient values. The assignment of the coefficient values is accomplished by associating a material type with each of the element in the mesh. Several different material types can be defined to describe the different physiographic regions of the estuary. For this model, the material types represent either regions of a specific range of depth or an obstruction to the natural flow of the water. A Manning's n coefficient value of 0.025 was assigned to most of the mesh, except near the top of the training wall. The top of the jetty is hydraulically much rougher than the rest of the model domain, so it was assigned a value of 0.20.

The eddy viscosity or turbulent exchange coefficient E describes the degree to which small scale turbulent flow features dissipate energy in the flow field. A high eddy viscosity coefficient indicates high levels of turbulent energy dissipation. This parameter accounts for small scale flow features that are not specifically resolved by the numerical mesh. Therefore, the value of eddy viscosity is a function of both the local flow field and the local grid size. As a rule of thumb, eddy viscosity is often assigned according to a grid Peclet number criterion. The grid Peclet number is defined as[1]:

$P = (\rho V \Delta x)/E_{ij}$

where

ρ = density, slugs/ft^3

V = velocity along a particular streamline, ft/s

Δx = mesh spacing, ft

E_{ij} = eddy viscosity where *i* is momentum turbulent exchange in *j*-direction, lbf•s/ft^2

A Peclet number less than 50 is desirable for numerical stability. By fixing the value of Peclet numbers, eddy viscosities were calculated automatically by the model. A Peclet value of 30 was assigned to greater part of the mesh, 40 was assigned to shallow marsh areas, and values of 70 and 100 were assigned to the jetty to compensate for the numerical instability created by the rapid change in the velocity of water passing over the structure.

To verify the hydrodynamic model, the results were compared to prototype data collected by ERDC personnel. The prototype data available include flow discharge and velocity profiles at several cross sections or ranges during an average time of ten hours. There are data available for nine ranges during 21 March 2000. Also, the water surface elevation was measured around Mile Point during the same period. The spin up time of the model was approximately five days; therefore, real time comparison between the model and the prototype was made for the sixth day of simulation which corresponds to 21 March 2000 (spring tide).

Tide fluctuations from the model and prototype at Mile Point are compared in Figure 5. The shape and the range of the tidal wave of the model is a satisfactory match to the prototype. The water surface in the model at Mile Point is lower than the prototype by approximately 0.7 ft; the reason for the difference being that the model boundary condition was developed using predicted tide data instead of the actual measurement. The actual tide is influenced by winds

inducing varying effects that depend upon the speed, duration, and direction of the wind field. Therefore, the effect of winds was not accounted for in the simulation model. Wind effects were omitted because the objective of this study was to compare the impacts of the proposed alternative plans on tidal currents in the navigation channel. By choosing one wind field for simulation it is possible that the effects of the alternatives on the tidal currents could be obscured because wind effects are actually transient in nature.

During spring tide, prototype flow data were collected at nine locations (Figure 6). Flow discharges from the model and prototype are presented in figures 7, 8, and 9 for the St. Johns River at Mile Point, Pablo Creek, and Sisters Creek, respectively. In general, maximum flows were reproduced and the shape of the flow discharge curves is similar between prototype and model. The timing of the flows at Sisters Creek was one aspect of the calibration where the results were less than optimal; the modeled discharge curve seems to lag the prototype by approximately half hour. The difference can be attributed by the simplification of the river geometry for numerical simulation. In particular, the expansive tidal marshes on the north side of the river, contiguous to Sisters Creek, were schematized for the purpose of this simulation. These marshes have a marked, if unknown, effect on the timing of the tide as it propagates through the system. As expected, the velocities in the model were consistent with a depth-averaged value of the velocities measured in the prototype.

4.3. Results from Modeled Alternatives (2-D)

1) Groin field consisting of groins extending from Mile Point north shoreline towards the Federal channel – Six groins about 150 feet long and 15 feet wide at the top spaced about 420 feet apart were introduced in the model (Figure 10). The groin field was effective at reducing the currents adjacent to the north Mile Point shoreline, but no significant reduction of cross currents within the navigation channel was observed.

2) Submerged Weir – A submerged weir with a crest elevation of -14.0 ft, MLLW, was located to connect the tip of the Mile Point training wall with Great Marsh Island (Figure 11). The purpose of the weir was to reduce the outflow rate from Pablo Creek during ebb. As expected, 2D modeling results showed no significant effects on cross currents within the navigation channel. The proposed crest elevation is the highest it can be without impairing navigation, but is not high enough to limit tidal flow.

3) Rebuild Mile Point Training wall (Figure 12) – The existing training wall has subsided and now has several sections permanently under water. Rebuilding the wall was considered as an alternative since the flow of water over the structure was thought to be contributing to cross currents within the navigation channel. Modeling of this alternative resulted in no

significant impact to cross currents. The ADCP survey measured a maximum flow of approximately 1,500 cfs over the training wall, less than five percent of the maximum ebb flow measured out of Pablo Creek.

4) 150 ft Training Wall Reach Widening (Figure 12) – Widening of the navigation channel in the reach just upstream from the junction of Pablo Creek with the main St. Johns River was considered to reduce the intensity of the currents and add more space to improve navigation maneuverability. Since the adjacent area to be incorporated to the navigation channel is already relatively deep, the insignificant changes to the magnitude of the currents that were detected in the 2D model are not surprising.

5) Short Cut Turn Widener + 150 ft Training Wall Reach Widening (Figure 12) – Short Cut Turn is located just upstream from Training Wall Reach. Extending the proposed 150 ft widener further north into the turn did not provide significant changes to the magnitude of the currents.

6) Rebuild White Shells Training Wall opposite Buck Island along north shoreline to its original design dimensions (Figure 12) – No significant changes to the currents within the navigation channel were observed after rebuilding the training wall.

7) Eastern Chicopit Bay Diversion (Figure 13) – A canal was proposed to redirect flow to the east through Chicopit Bay. Currently the cross currents in the navigation channel are produced by the ebb flow from Pablo creek entering the main navigational channel perpendicularly. The purpose of the diversion is to reduce the magnitude of the existing cross currents by reducing the amount of ebb flow at that particular location. Various canal sizes were tested up to a depth of 30 feet and a bottom width of 200 feet. This configuration reduced the amount of ebb flow by approximately fifty percent, but the magnitude of the cross currents inside the navigation channel was reduced by less than twenty five percent. The angle of the cross currents did not change significantly.

   The construction of such a large diversion canal in an environmentally sensitive area and the additional cost of having to build a bridge to maintain access to the existing park without obtaining significant relief from cross currents makes this alternative impractical.

8) Relocate Mile Point Training Wall – Reconfiguration of the intersection of Pablo Creek with the St. Johns River was performed by relocating the Mile Point Training Wall as presented in Figure14. Ebb flow from Pablo Creek is currently concentrated at the tip of the Mile Point jetty and enters the main St. Johns River navigation channel perpendicular to the main flow

direction. The purpose of the training wall relocation is to redistribute the ebb flow to intersect the main navigation channel further east where the currents will be parallel to the channel.

Modeling of this alternative demonstrated a significant change in the distribution and direction of the currents within the navigation channel. Cross currents were completely eliminated inside the navigation channel during maximum ebb. The ebb currents along the bendway followed a trajectory parallel to the navigation channel. Flood currents did not seem to be negatively affected by the new configuration of the training wall. The magnitude of the currents remained similar to existing conditions.

4.4. 3-D Model Results

A 3-D model was developed to validate the only alternative found to be effective at reducing cross currents, the relocation of the training wall at Mile Point.

The 3-D numerical hydrodynamic model used in this project is known as RMA10-WES. The model was originally developed under contract to Waterways Experiment Station, now known as ERDC, by Dr. Ian King of Resource management Associates of Suisun City, CA. The version known as RMA10-WES has been modified significantly by ERDC personnel. A summary of technical specifications of the model is given:

a) Galerkin finite element formulation;
b) Unstructured mesh composed of bricks, tetrahedral elements, prism, and pyramids in 3-D, triangles and quadrilaterals in 2-D (horizontal averaging or vertical averaging), and line elements in 1-D;
c) Mixed interpolation scheme for pressures and velocities (linear and quadratic);
d) Z – based vertical coordinate transform;
e) Governing equations of the nonlinear Reynolds Form of the Navier-Stokes equations, including baroclinic forcing, wind forcing, tidal forcing, Coriolis effect, and bed friction;
f) Three-dimensional, two-dimensional vertically averaged, two dimensional laterally averaged, and one-dimensional approximations within the same numerical mesh;
g) Time integration via an implicit Crank-Nicholson finite difference operator;
h) Eddy viscosity formulation for horizontal turbulence closure;
i) Mellor-Yamada Level 2 vertical turbulence closure model;
j) Non-linear acceleration and friction terms for the governing equations;

k) Newton-Raphson iteration for the solution of the non-linear system of equations;
l) Frontal solver for the solution of the matrix equations; and
m) Two algorithms available for wetting and drying of 2-D vertically averaged elements.

The numerical mesh used for the 3-D model was cropped from the 2-D model (Figure 2). A reduced horizontal domain was necessary to accommodate additional horizontal layers (elements) without demanding extraordinary computing capacity. The 3-D mesh consisted of 51,580 nodes and 18,785 elements evenly distributed among five horizontal layers. Differing from the dynamic 2-D modeling approach, the 3-D modeling of the tentatively selected alternative was performed in steady state using flows and stages obtained from the 2-D Model as boundary conditions. The boundary inflows during maximum ebb were: 160,000 cfs, 44,000 cfs, and 25,000 cfs at St. Johns Bluff, Pablo Creek, and Sisters Creek, respectively.

The results obtained from the 3-D model confirmed the effectiveness of relocating the training wall at Mile Point. As with the 2-D model, this alternative shows a significant change in the distribution and direction of the currents within the navigation channel (figures 15 through 18). Cross currents were completely eliminated inside the navigation channel during maximum ebb and the ebb currents along the bendway follow a trajectory parallel to the navigation channel. Flood currents in the navigational channel were not negatively affected by the new configuration of the training wall. As shown in figures 19 and 20 the relocation of the training wall will rearrange the flow field at the intersection of St. Johns River with Pablo Creek. Stronger currents in the IWW will shift towards the east, following the new training wall. Therefore, the IWW navigational channel may have to be slightly relocated to accommodate new channel depths.

5. Erosion

There are four shoreline locations along the St. Johns River where erosion is occurring.

5.1. Mile Point

The Intracoastal Waterway or Florida East Coast Canal (FECC) started as a private waterway 5-foot deep and 50-foot wide from the St. Johns River to Miami that was completed in 1912. The dimensions of the project were never effectively maintained, resulting in traffic of vessels having less that 4-foot draft. The Canal was transferred to the United States by local interests and the Corps of Engineers completed construction of an 8-foot deep, 100-foot wide waterway

in 1935. Up to that point hydrographic surveys and maps of the area (Figure 21), when compared to surveys and maps dating back to 1910, show a stable sand bar at Mile Point and no significant changes or evidence of erosion at Great Marsh Island. The sand bar at Mile Point is a typical feature in riverine morphology. Sand bars are usually formed on the inside bank of a river bend as slow water velocities tend to deposit sediment material transported by river currents. A deeper channel is naturally maintained on the outside of the river bend where high velocities tend to concentrate. Other than the construction of the FECC, the only significant modification of the River was the Mile Point Training Wall, which was constructed prior to 1910.

A hydrographic survey dated 1965 shows degradation of the submerged portion of the sand bar at Mile Point. Also, aerials at the time (Figure 22) show a considerable expansion of the channel between the west end of the Mile Point Training Wall and Great March Island. The entire expansion was caused by the extraordinary erosion of a portion of Great Marsh Island's north shoreline adjacent to the training wall. The erosion of Great Marsh Island's north shore continued until a breakthrough of the island (Figure 23) occurred in the late 1990's causing shoaling that prevented access to Mt. Pleasant and Greenfield Creeks. Although erosion of the submerged sand bar at Mile Point started earlier, erosion of the sandy beach began to be noticed by local residents in the late 1960's. The beach vanished and erosion continued producing five slope failures over a fifteen year period between 1986 and 2000. Currently there is a scour area up to 60 feet deep north of the navigational channel at Mile Point Lower Range and Turn; depths in the channel are only about 42 feet. Depths between 30 to 40 feet can be found within 40 to 50 feet of the Mile Point north shoreline in some areas.

5.2. Other Erosion Sites

White Shells Training Wall (Figure 24) deteriorated through the years to the point where overtopping and multiple breakthroughs occurred. The basin behind the training wall had experienced sedimentation as a result of being isolated from the St. Johns River on the south by the training wall and the disposal of dredged material, and from Cedar Point and Hannah Mills Creeks on the north by the construction of Heckscher Drive in the late 1920's. The location of the White Shells Training Wall shares similar conditions experienced at the location of the Mile Point Training Wall, which has experienced similar deterioration and had to be restored in the past. Both structures are exposed to a differential in water pressure and the resulting flow infiltration produced by holding water from both sides twice every day as a result of tidal fluctuations.

The erosion and deterioration of the Ward's Bank Training Wall near the carrier basin at the U.S. Naval Station at Mayport and the erosion of the north shoreline at Huguenot Park near the landward end of the north jetty is caused by the

estuarine tidal dynamics (Figure 25). The change in the soil pore pressure caused by the constant and significant tidal stage fluctuation at the river entrance debilitates the river banks.

These three sites are particularly susceptible to erosion since they were artificially filled in and their soils have not been naturally consolidated as in other areas of the river. All the eroding sites were under water during the beginning of last century (Figure 26). Also, the White Shells Training Wall and the north shoreline at Huguenot Park are located on the outside bank of the river bend where erosive currents tend concentrate.

5.3. Effects of Relocating the Training Wall at Mile Point

A natural shift of the Intracoastal Waterway at the entrance to Pablo Creek will be expected as a result of the realignment of the training wall. Lower water velocities will increase opportunities for sedimentation on the western side of the entrance while higher velocities at the east have the potential to erode and undermine the location of the new training wall (Figures 20 and 21). Significant armoring and scour protection will be utilized for this training wall.

It is anticipated that the new realignment of the Mile Point training Wall will produce flows coming out of the IWW from the south that are more aligned with the Federal navigational channel. This should cause a drop in water velocity in the areas north of the navigational channel at Mile Point, as seen in Figures 19 and 20. We anticipate that this will slow the progressive erosion that has been occurring at the north bank of Mile Point.

No shoaling of the Jacksonville Harbor navigational channel is expected.

6. Conclusions

The U.S. Army Corps of Engineers, Jacksonville District performed numerical modeling of various proposed alternatives to reduce cross currents within the Jacksonville Harbor navigational channel at Mile Point. The cross currents are produced by perpendicular intersection of the Intracoastal Waterway with the St. Johns River at Pablo Creek. Only one alternative, the relocation of the training wall at Mile Point, proved to be effective at reducing the cross currents by realigning ebb flows from Pablo Creek making them parallel to the navigational channel.

A slight eastern shift of the Intracoastal Waterway entrance at Pablo Creek is expected as a result of sedimentation and erosion caused by a change in local currents.

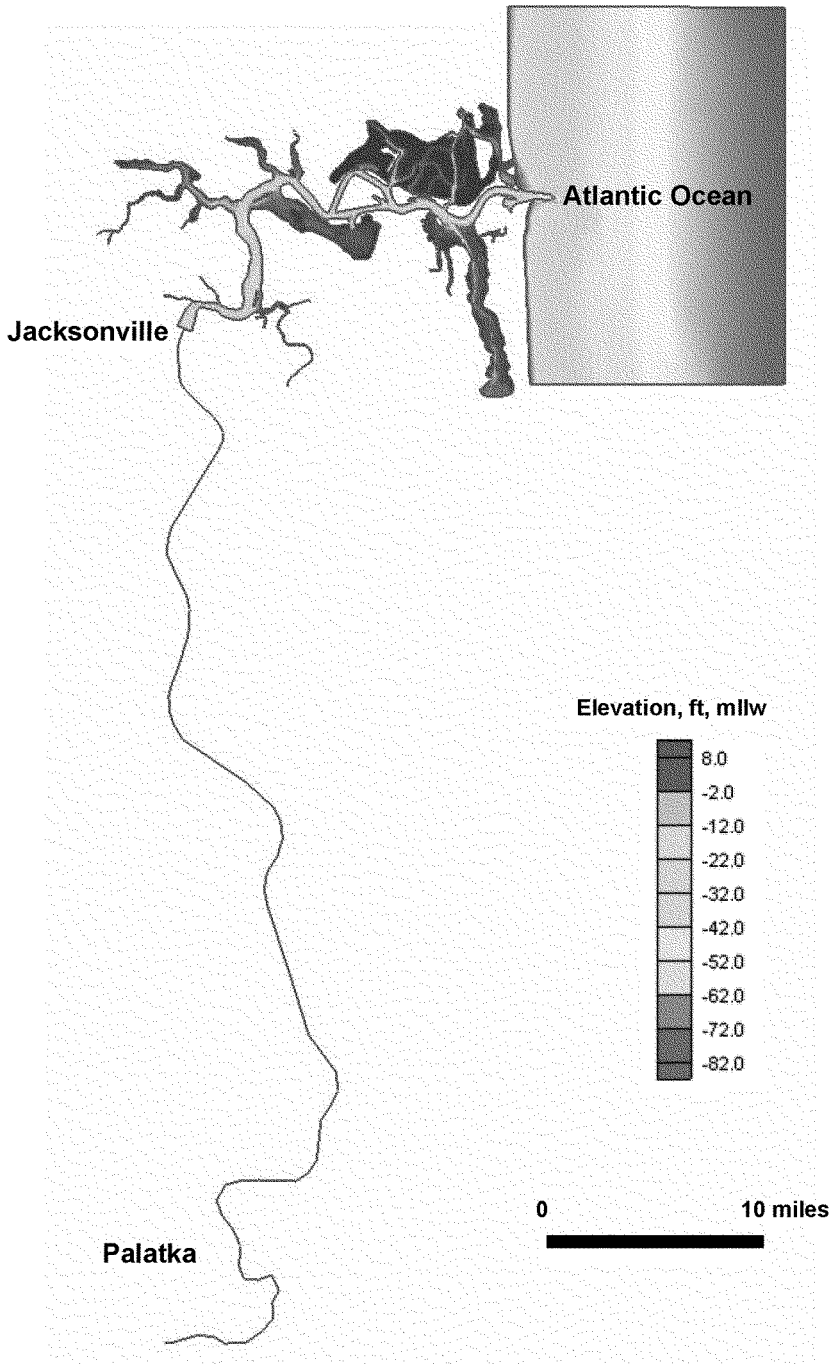


Figure 1. St. Johns River, 2D Hydrodynamic Model

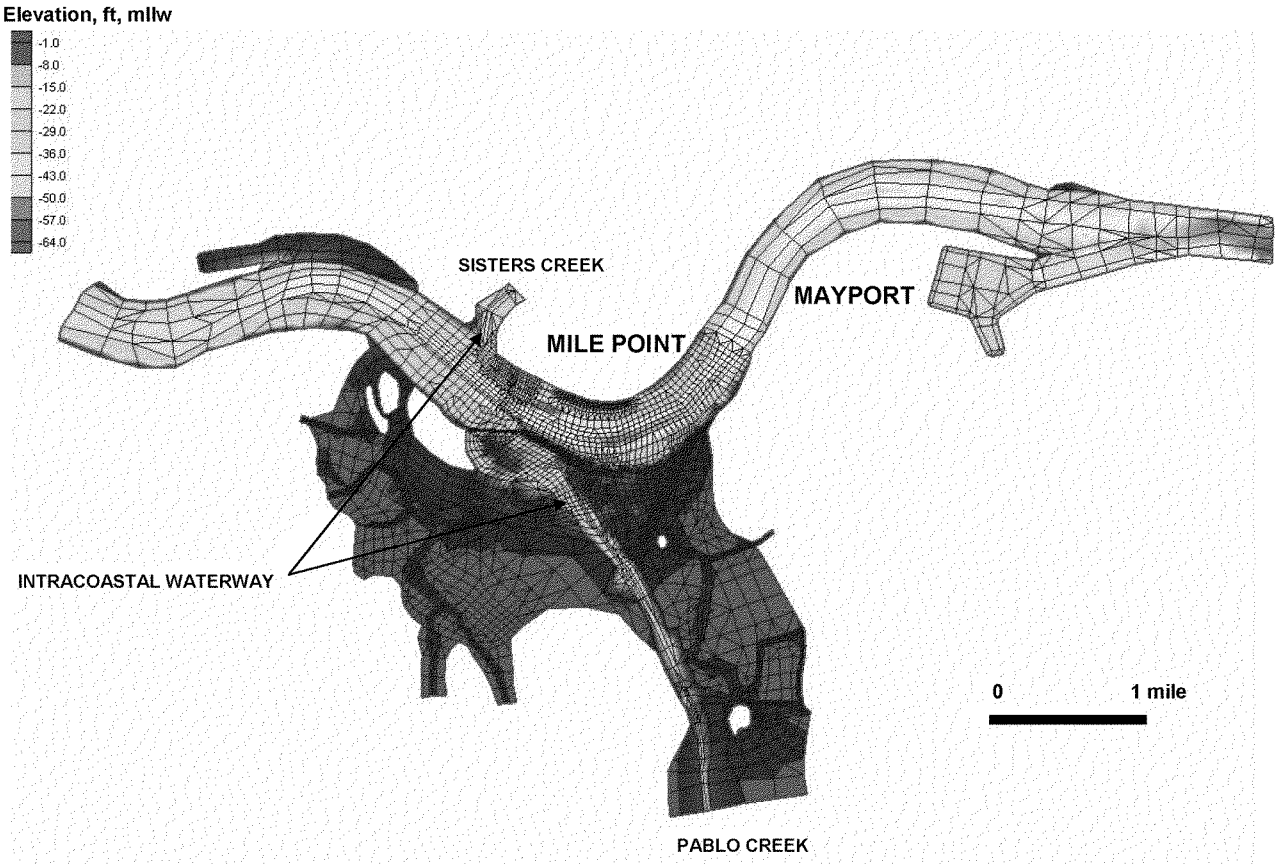


Figure 2. St. Johns River, 3D Numerical Model

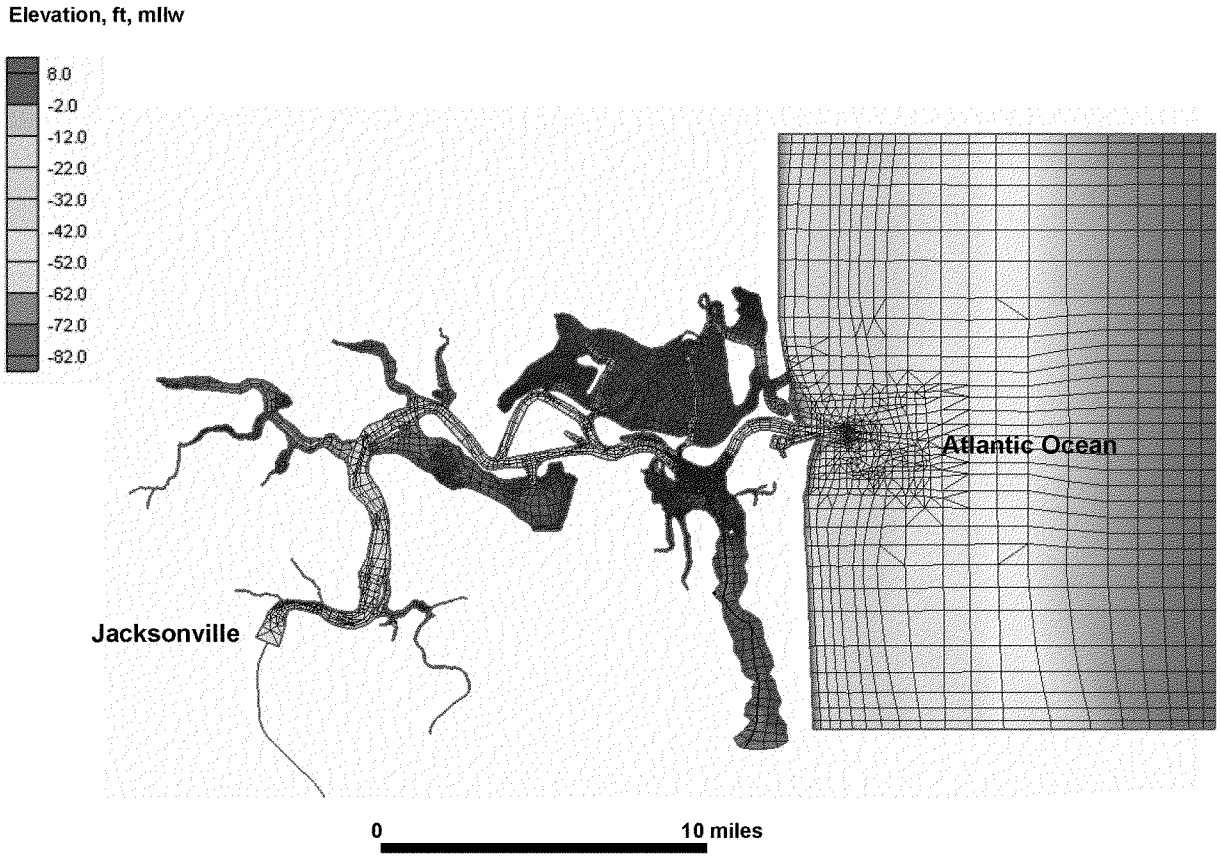


Figure 3. St. Johns River, 2D Numerical Model

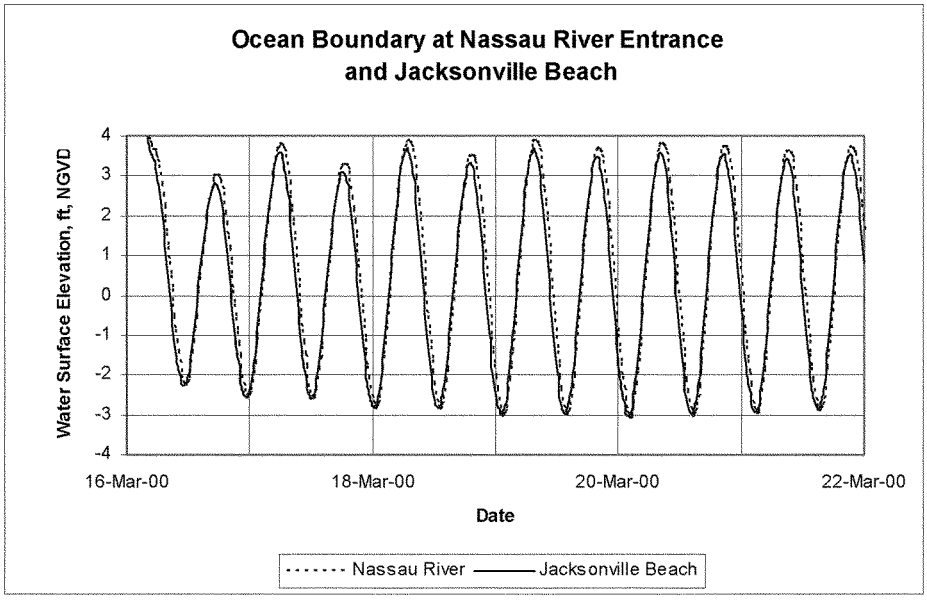


Figure 4. 2D Model, Tidal Boundary

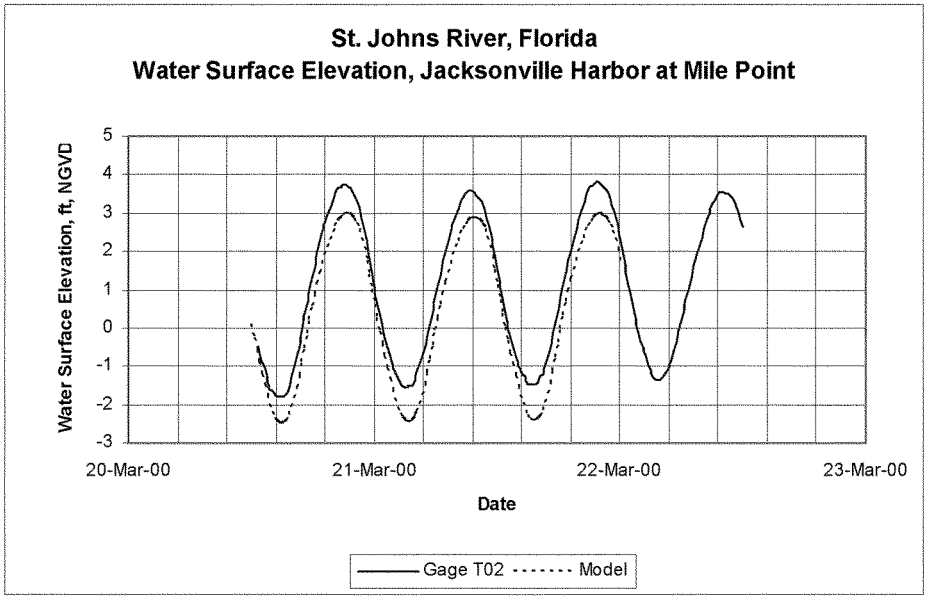


Figure 5. 2D Model, Water Surface Elevation at Mile Point

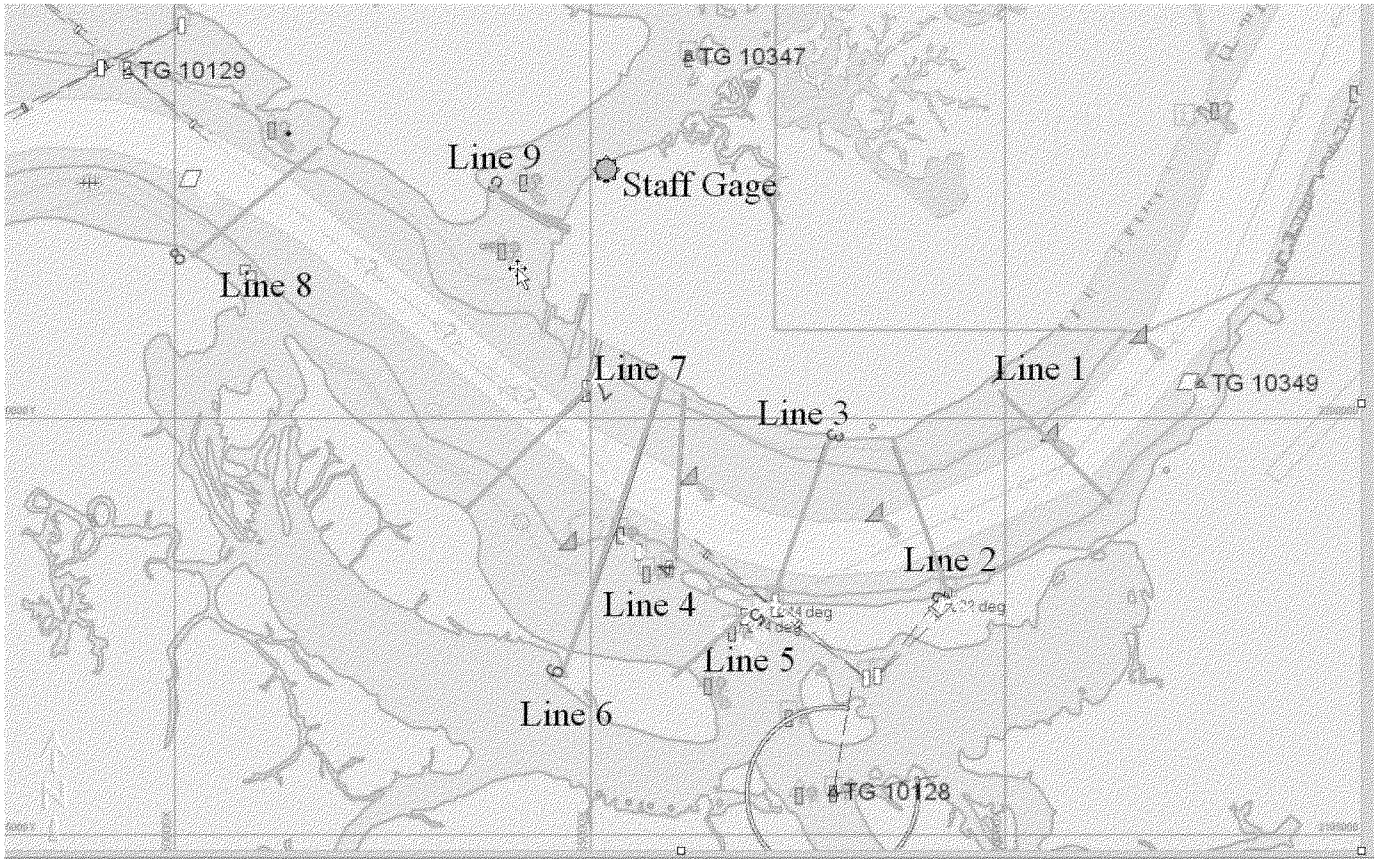


Figure 6. ADCP transect locations and tide gage locations for Mile Point reach data collection.

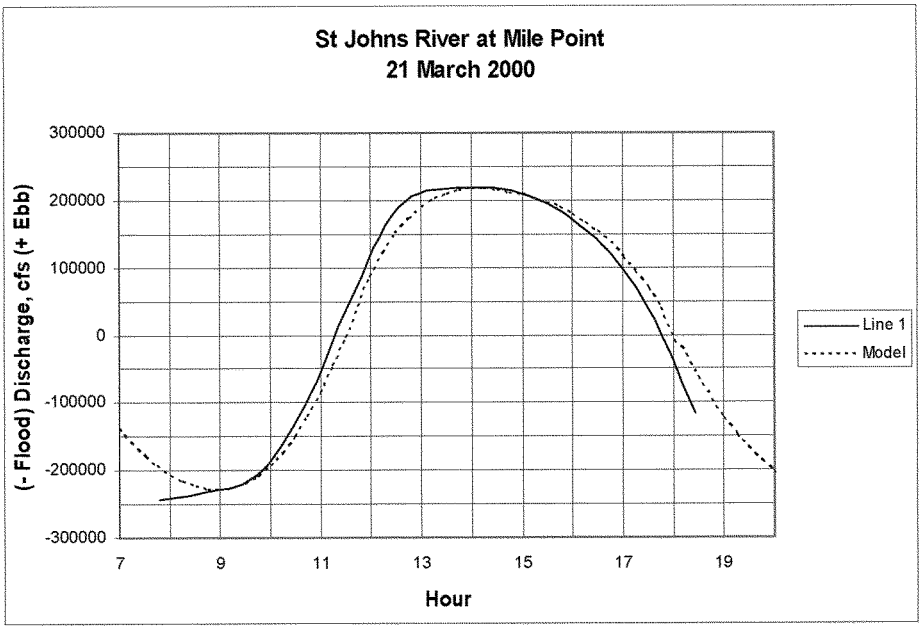


Figure 7. St. Johns River Flow at Mile Point

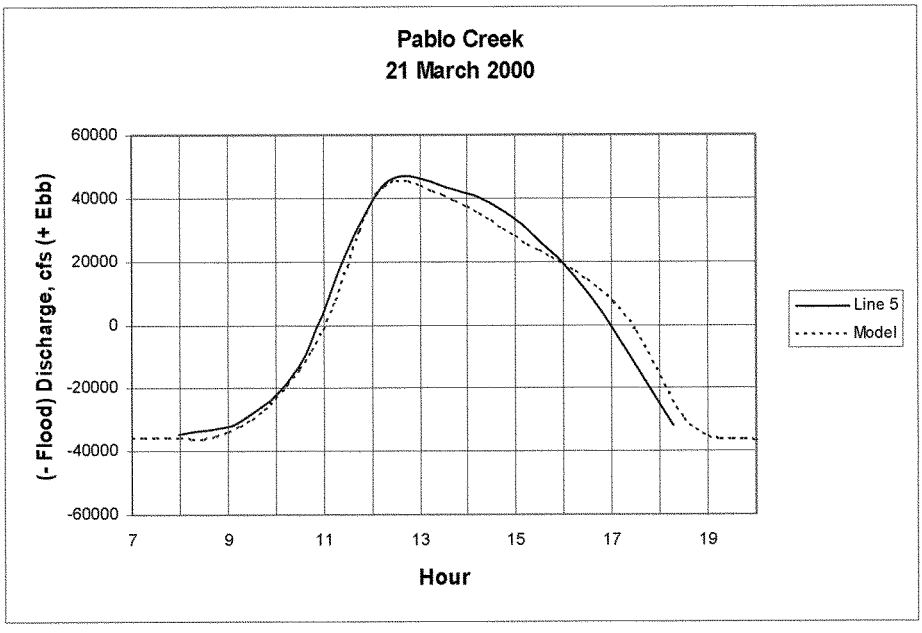


Figure 8. Flow at Pablo Creek

Figure 9. Flow at Sisters Creek

Figure 11. Proposed Alternative: Submerged Weir

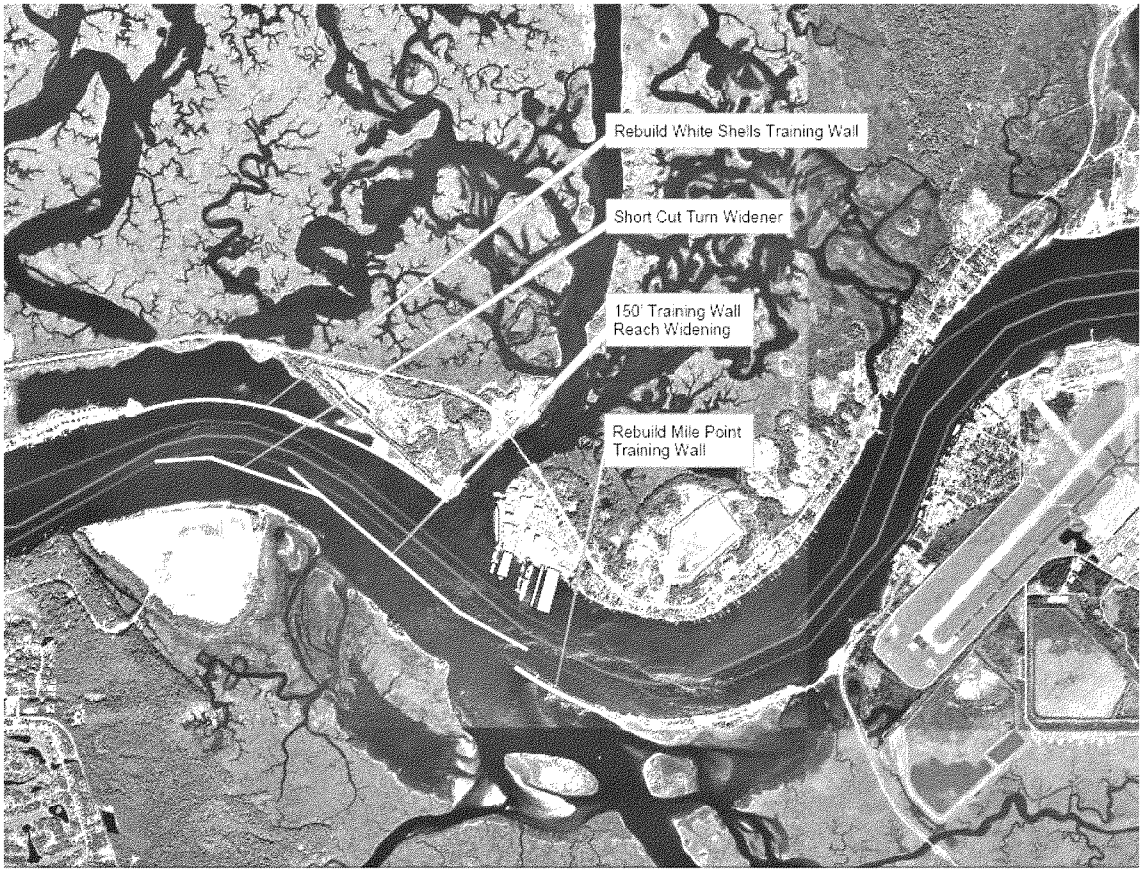


Figure 12. Proposed Alternatives: Rebuild White Shells Training Wall, Short Cut Turn Widener, 150' Training Wall Reach Widener, Rebuild Mile Point Training Wall

Figure 13. Proposed Alternative: Eastern Chicopit Bay Diversion

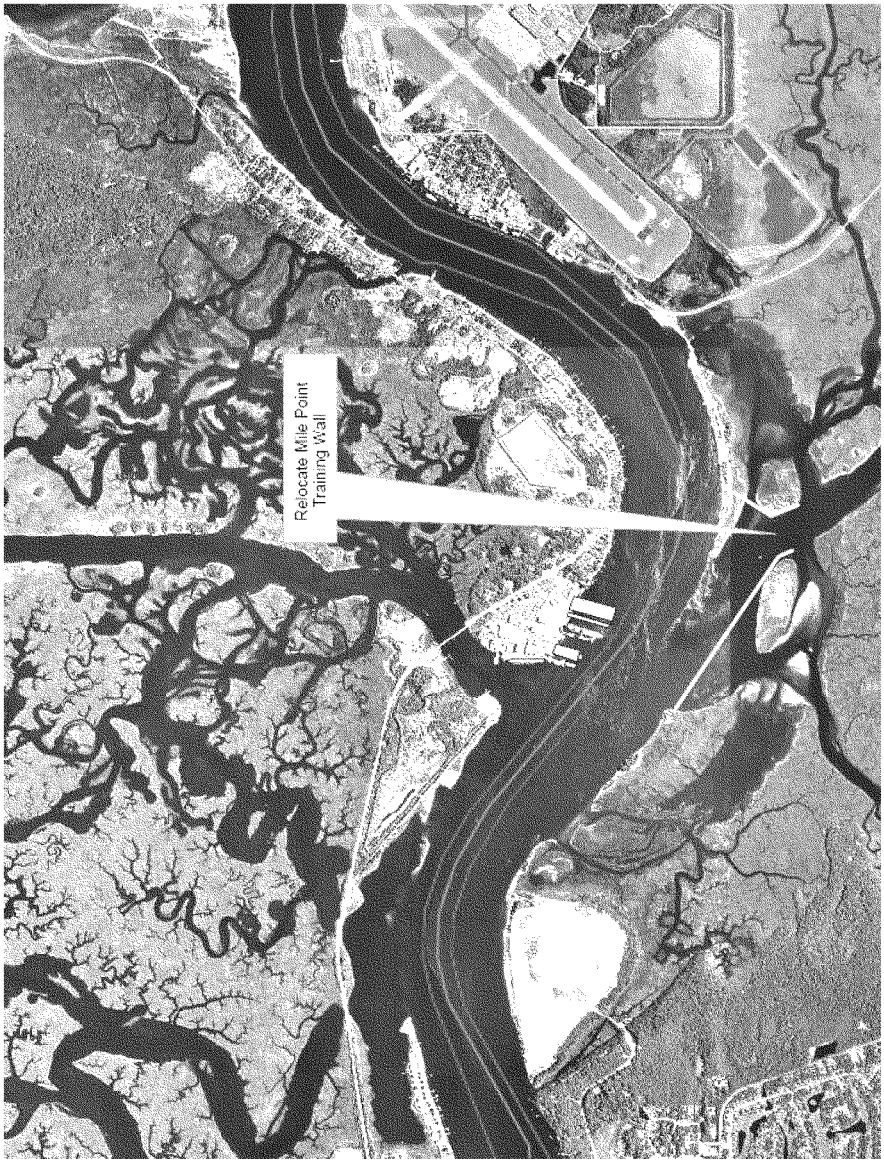


Figure 14. Proposed Alternative: Relocate Mile Point Training Wall

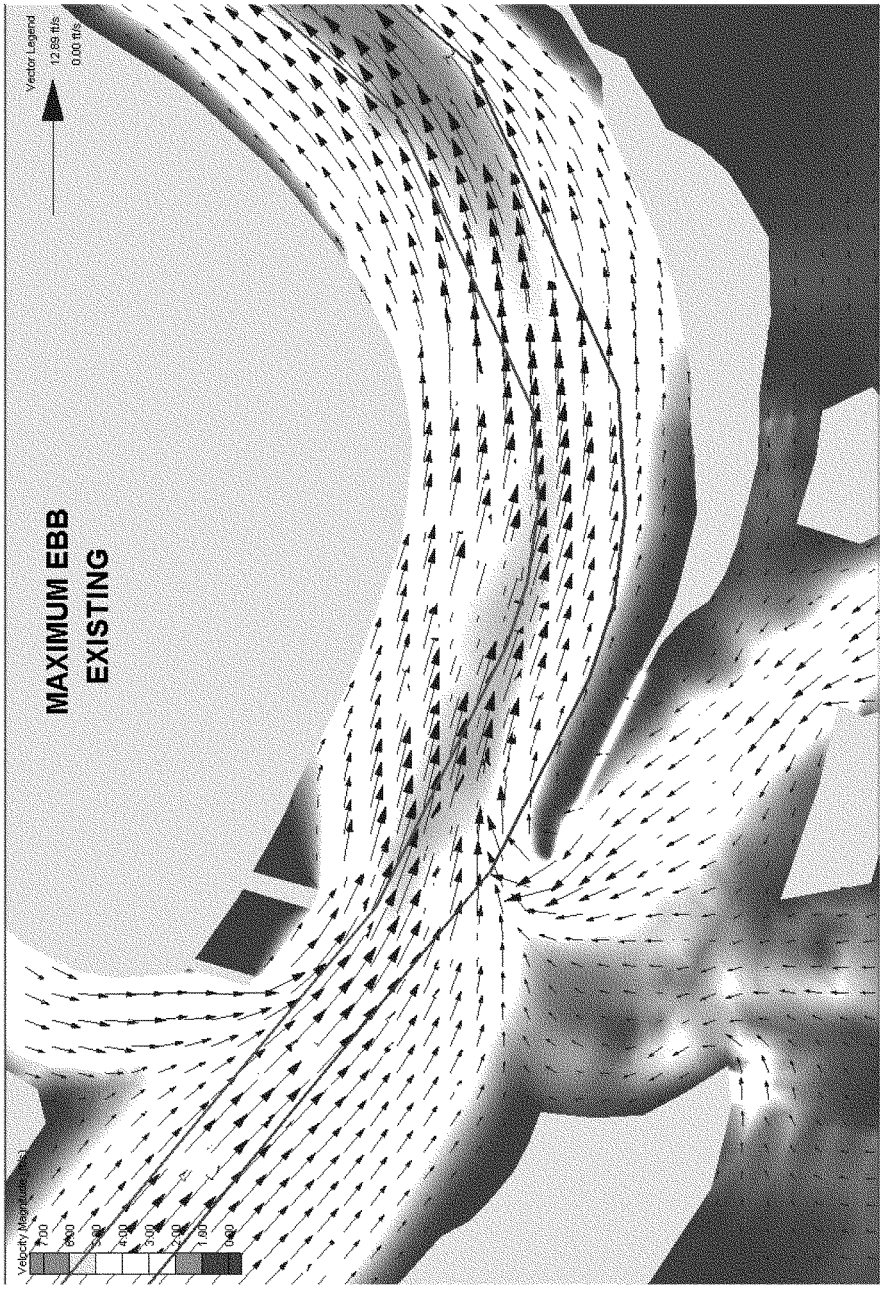


Figure 15. Existing Maximum Ebb Currents at Mile Point, 3D Model

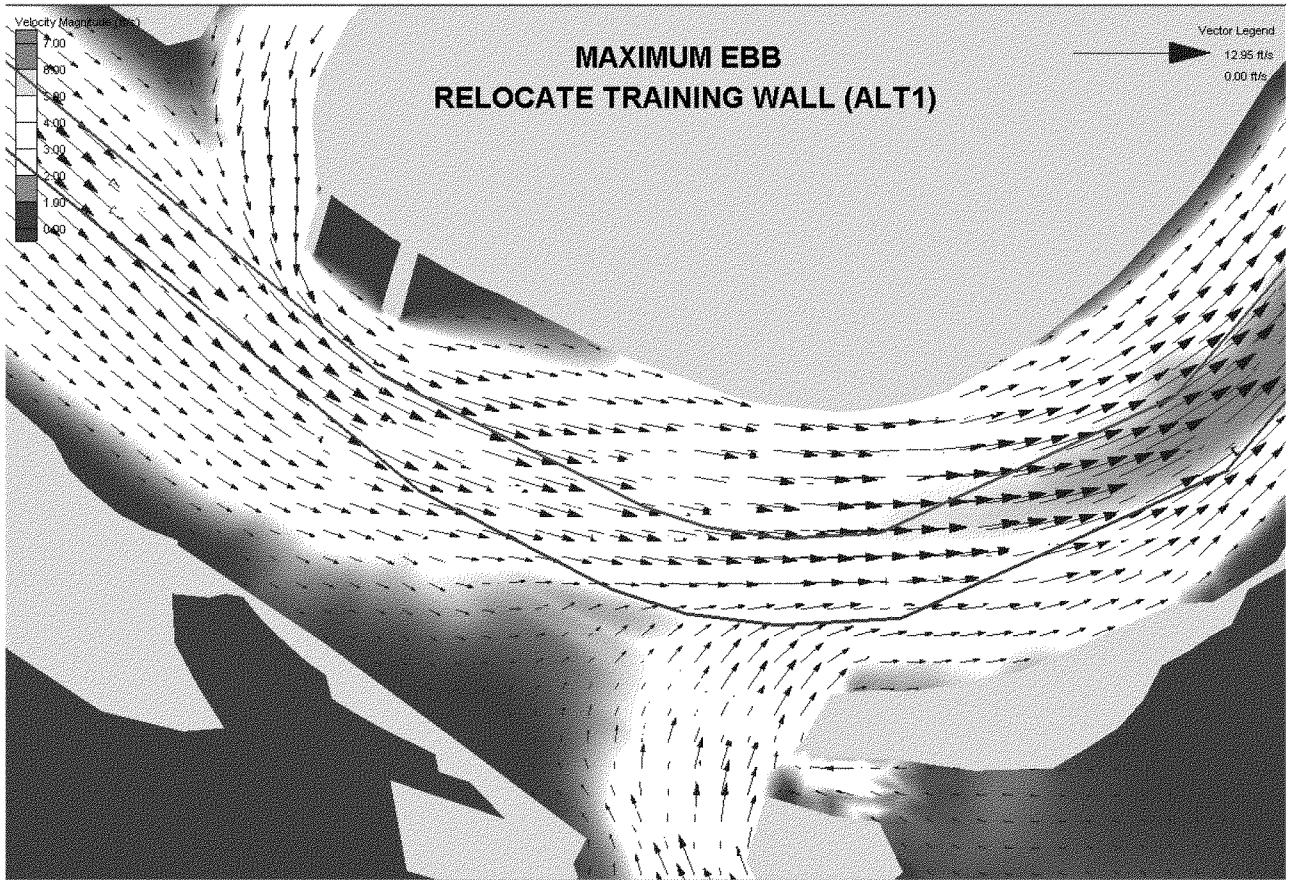


Figure 16. Alternative (Relocate Training Wall) Maximum Ebb Currents at Mile Point, 3D Model

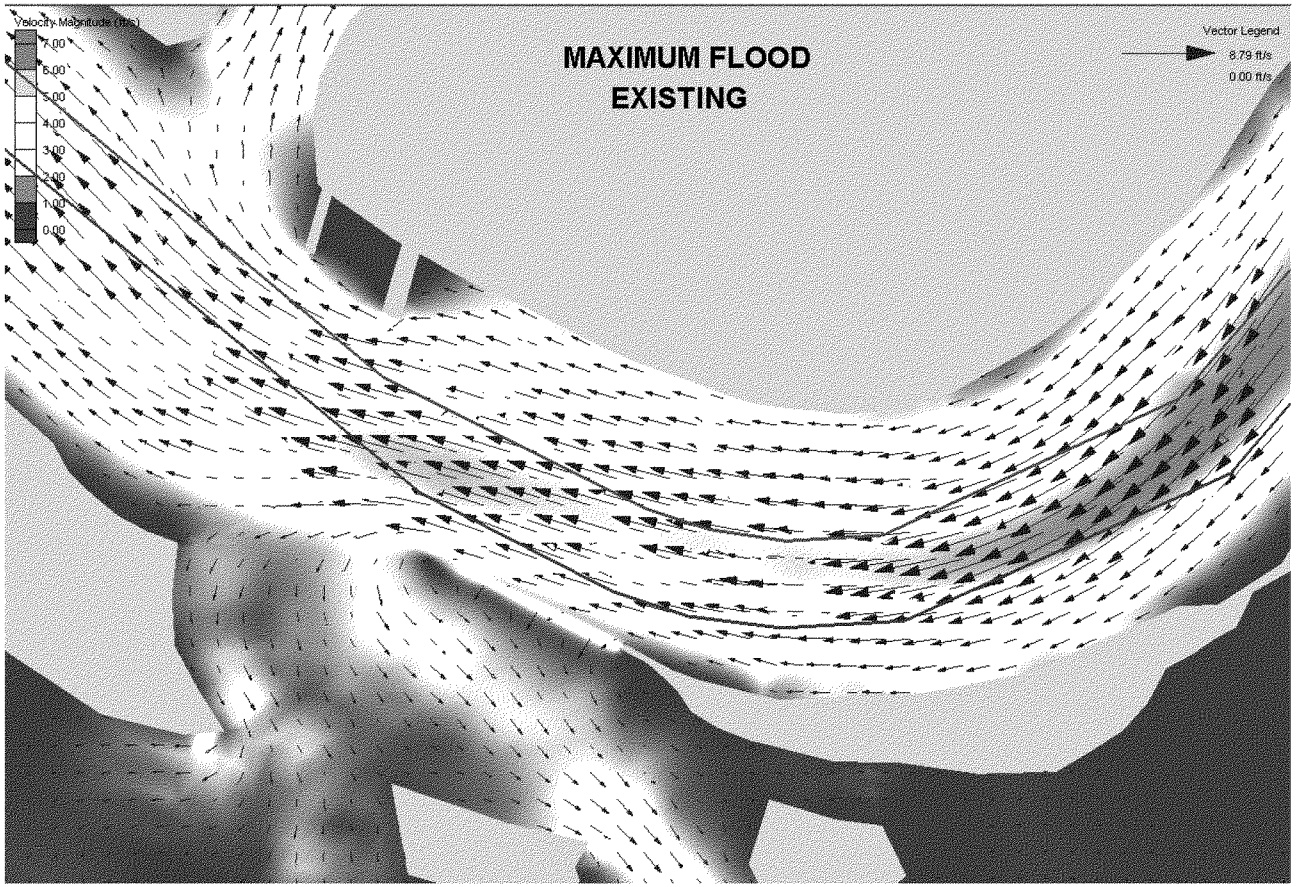


Figure 17. Existing Maximum Flood Currents at Mile Point, 3D Model

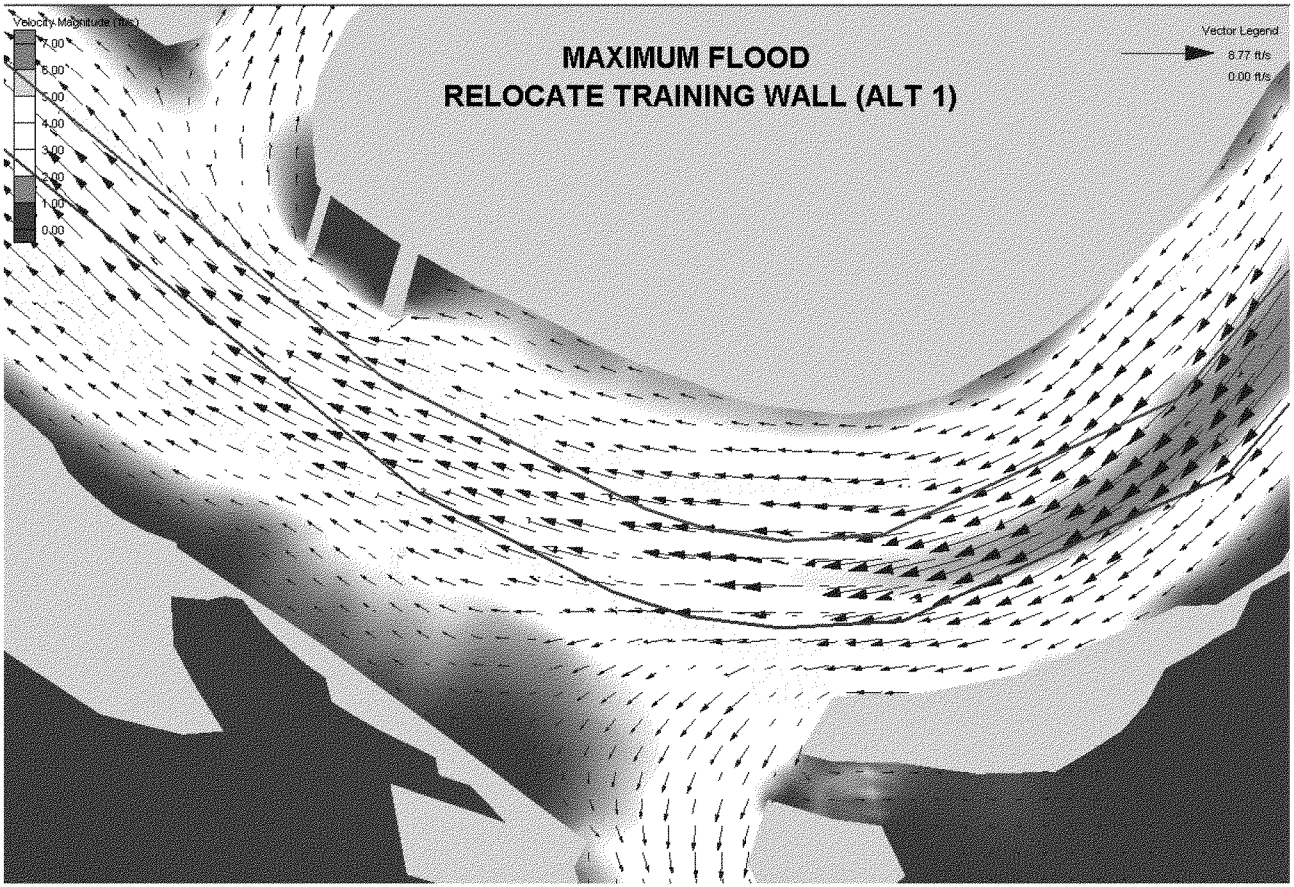


Figure 18. Alternative (Relocate Training Wall) Maximum Flood Currents at Mile Point, 3D Model

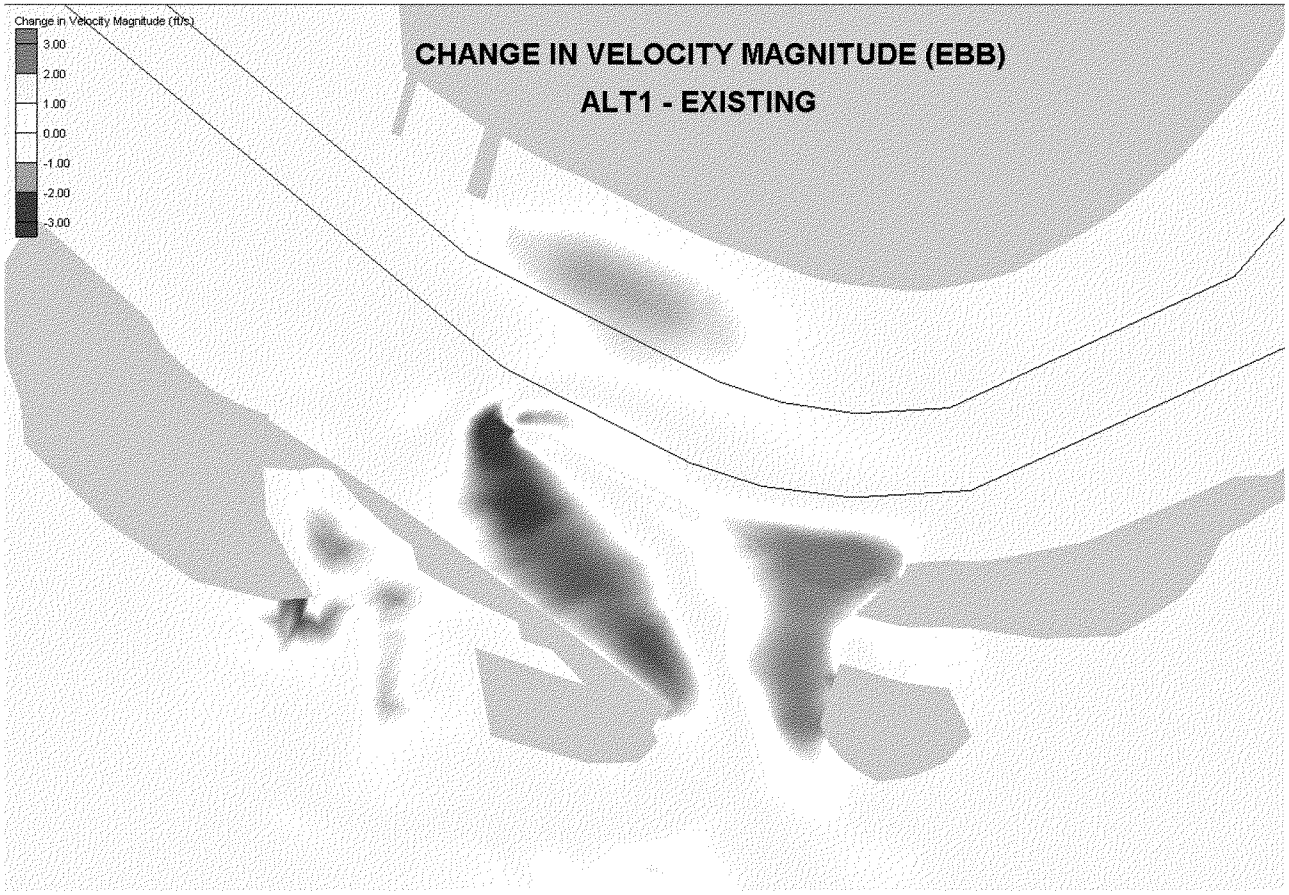


Figure 19. Change in Maximum EBB Water Velocity Magnitude Between Existing and Alternative Conditions

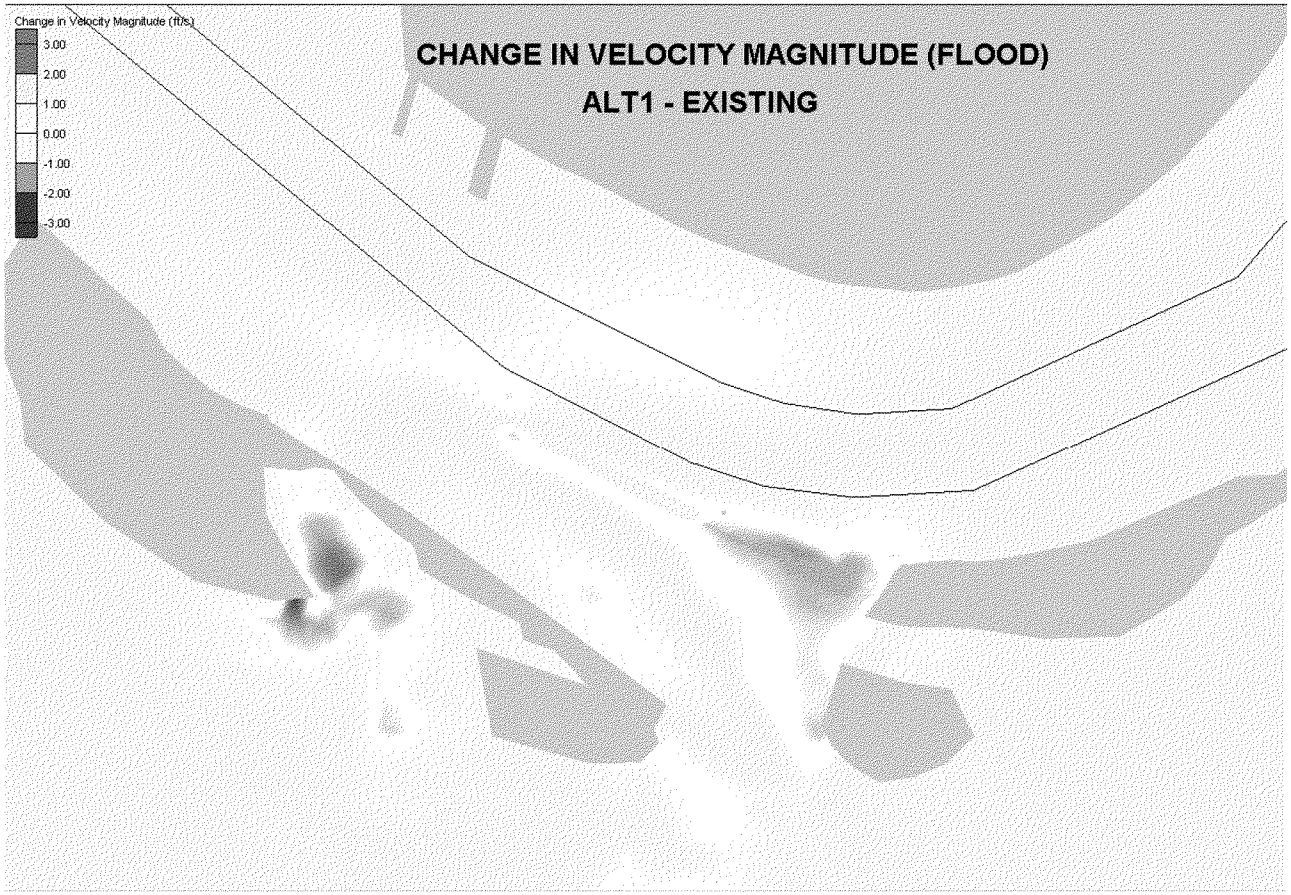


Figure 20. Change in Maximum Flood Water Velocity Magnitude Between Existing and Alternative Conditions

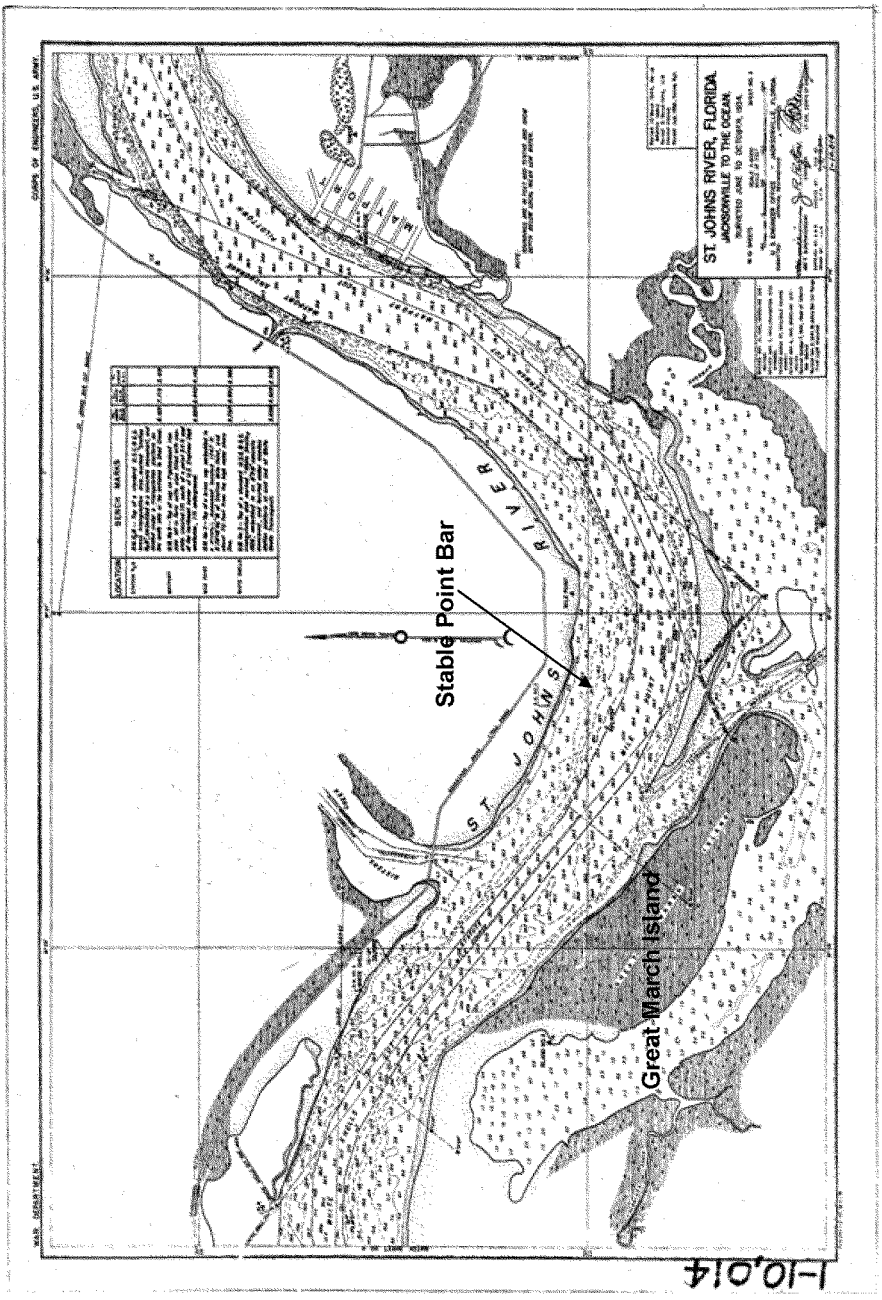


Figure 21. Hydrographic Survey (1934).

Figure 22. Aerial photo (1962).

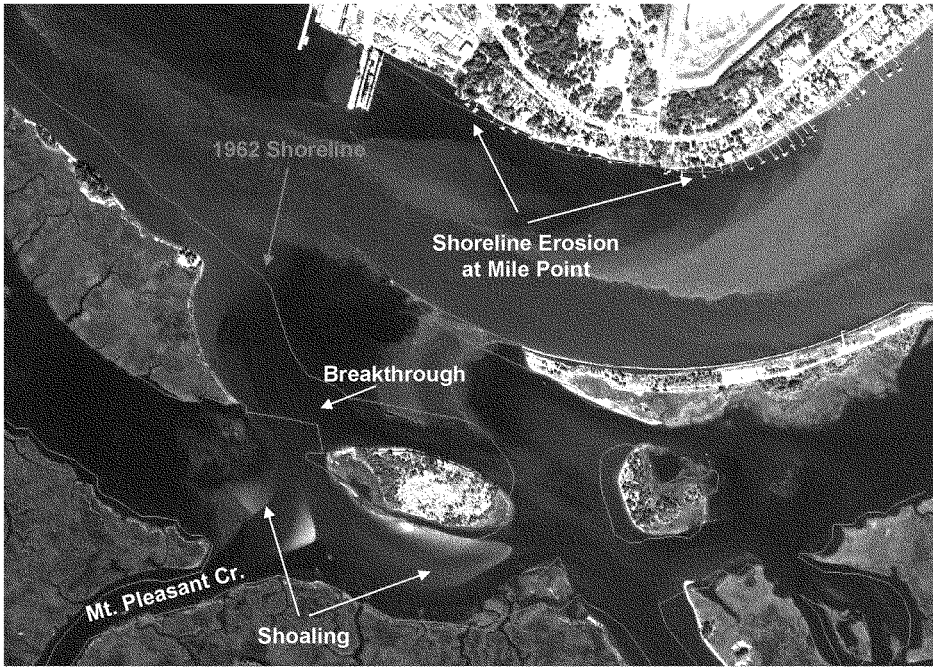


Figure 23. Aerial photo (2004) showing the change in river shoreline at Mile Point and Chicopit Bay since 1962. The erosion of Great Marsh Island's north shoreline continued until a breakthrough of the island occurred in the late 1990's.

Figure 24. Aerial photo (2004) showing the change in river shoreline near White Shells Training Wall since 1962.

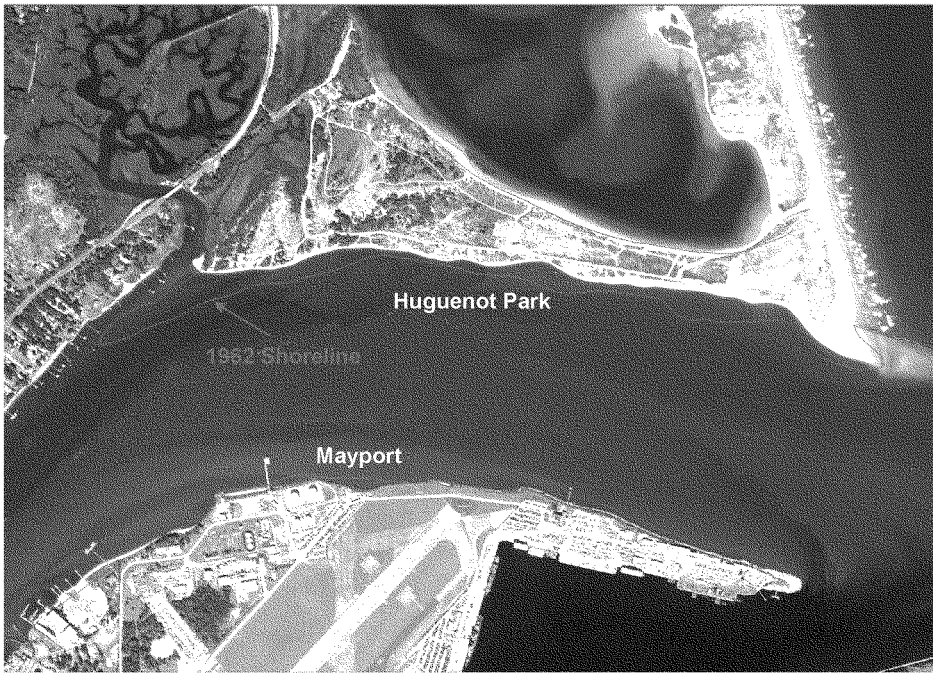


Figure 25. Aerial photo (2004) showing the erosion and deterioration of the Ward's Bank Training Wall near the carrier basin at the U.S. Naval Station at Mayport and the erosion of the north shoreline at Huguenot Park near the landward end of the north Jetty since 1962.

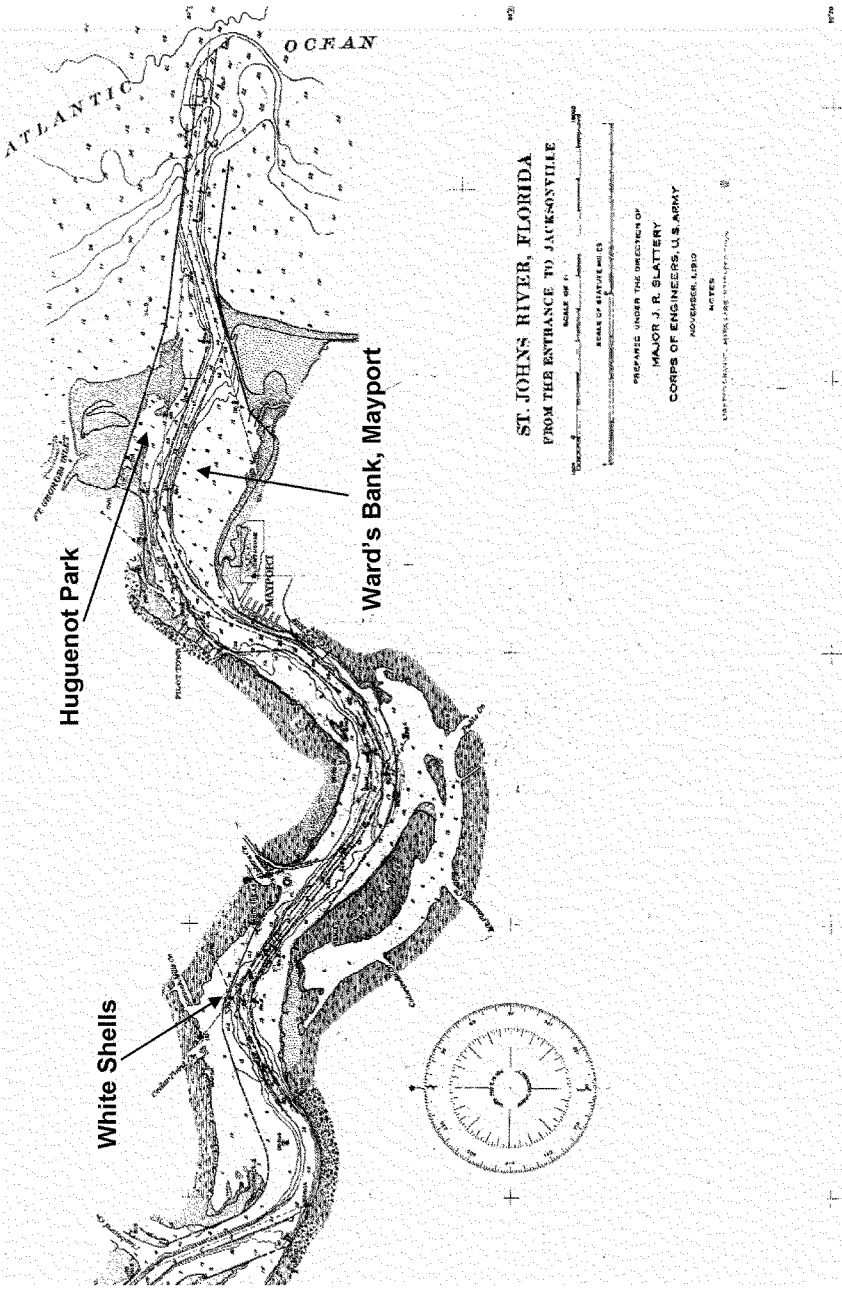


Figure 26. Hydrographic Survey (1913) demonstrates that all the current eroding shoreline sites were under water during the beginning of last century.

GEOTECHNICAL ATTACHMENT

Investigations and Geologic Conditions
Boring Logs and Laboratory Reports

ATTACHMENT B

Mile Point, Jacksonville Harbor, Florida
Feasibility Study

GEOTECHNICAL ATTACHMENT

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MILE POINT FEASIBILITY STUDY
GEOTECHNICAL ATTACHMENT
ENGINEERING APPENDIX SECTION C

1. Introduction

This section provides the results of geologic investigations pertaining to the reconstruction of the intersection of the Intracoastal Waterway with the St. John's River. This reconstruction has several impacts, one to aid navigation and reduce in the impact to vessels from the cross current, and two, the reduction of erosion along the north bank of the St. John's River. This will be accomplished by degradation of the Little Jetty found along the south bank of the St. John's River at the Intracoastal Waterway. The project depth for the degradation and construction of new training walls is proposed to be -13 feet MLW.

2. Geologic Setting

The geologic setting for this project is a tidally influenced major river meander at the intersection with a tributary that drains the salt marsh. This occurs along a nearly flat reach of the St. John's River just before it reaches its mouth. Flow velocities in the river are sufficient to suspend the silt and clay in the vicinity of the project as evidenced by the sediments in the borings in the river. The sand is deposited and the finer material is swept along with the current in the river. Salt marsh sedimentation is characterized by fines of silt and clay suggesting lower carrying capacity and flow velocities.

The topography in the project area consists of relic marine terraces of Pleistocene age. The trend of these terraces is approximately that of the present coastline. The height of the terraces to the south of the Saint Johns River just to the west of the project range from approximately 30 to 50 feet above sea level; the highest point is about 85 feet near Fort Caroline National Monument. North of the river much of the area is covered by saltwater marshes with terrace heights rarely exceeding 30 feet.

Holocene and Pleistocene deposits of predominately sand and clayey sand with localized shell beds mantle the project area. These deposits are underlain by sand, shell, clay, and limestone of Pliocene to late Miocene age.

3. Geotechnical Investigations

The subsurface investigations associated with this project consist of several different periods of investigatory borings. Most are situated in the river channel and are related to the maintenance/deepening of the channel, while there are several borings along the Little Jetty to characterize the material for the previous rehabilitation of the jetty. Six of these Little Jetty borings conducted in 1998 are labeled CB-ML-J98-1 through CB-ML-J98-4 and CB-ML-J98-6 and CB-ML-J98-7 occur where the Little Jetty will be degraded for this project. These borings were

completed to approximately -14 feet, mean low water. Most recently there were nine borings completed in 2005 to depths mostly -30 feet with one to -60 feet and another to -54 feet, specifically to investigate erosion and character of materials at the intersection of the Intracoastal Waterway and the St. Johns River. One boring, CB-JHMP05-9 was completed south along the Intracoastal Waterway to elevation -33 feet to verify the sediment character in that area. Plate B-1 shows the borings found in the area of interest and the boring logs and lab analysis are contained at the end of this Attachment.

4. Material Encountered

The material encountered beneath Little Jetty to the planned dredge depth primarily consists of silty sand and poorly graded sand. However, rock can be expected to be incorporated from the jetty armoring. A few lenses of organic silt and clay less than 2 feet thick are represented on the logs in the area of the proposed jetty degradation. The boring completed in the Intracoastal Waterway south of the river encountered soft silt to an elevation of -32.6 feet below mean low water. One foot of silty sand was found below the silt at the bottom of the hole. Adjacent to Great Marsh Island and just east and west of the island, borings encountered poorly graded sand to an elevation of at least -30 feet below mean low water. This suggests that the material to be dredged east of Great Marsh Island is sand, and the material near the proposed mitigation fill area has a thick sand section beneath it.

5. Geotechnical Design Considerations

Two training walls line the margins of the Intracoastal Waterway where the waterway discharges into the St. John's River. Design of the armor gradation for the new training walls is based on the rehabilitated Little Jetty design and incorporates current design wave and flow velocities. The armor layer is to be two stones thick with a W_{50} of 2000 pounds assuming 165 pounds per cubic foot. The D_{50} is 30 inch material.

6. Work to be Completed

Geotechnical investigations will be completed for the PED phase of the project. These investigations are highlighted below.

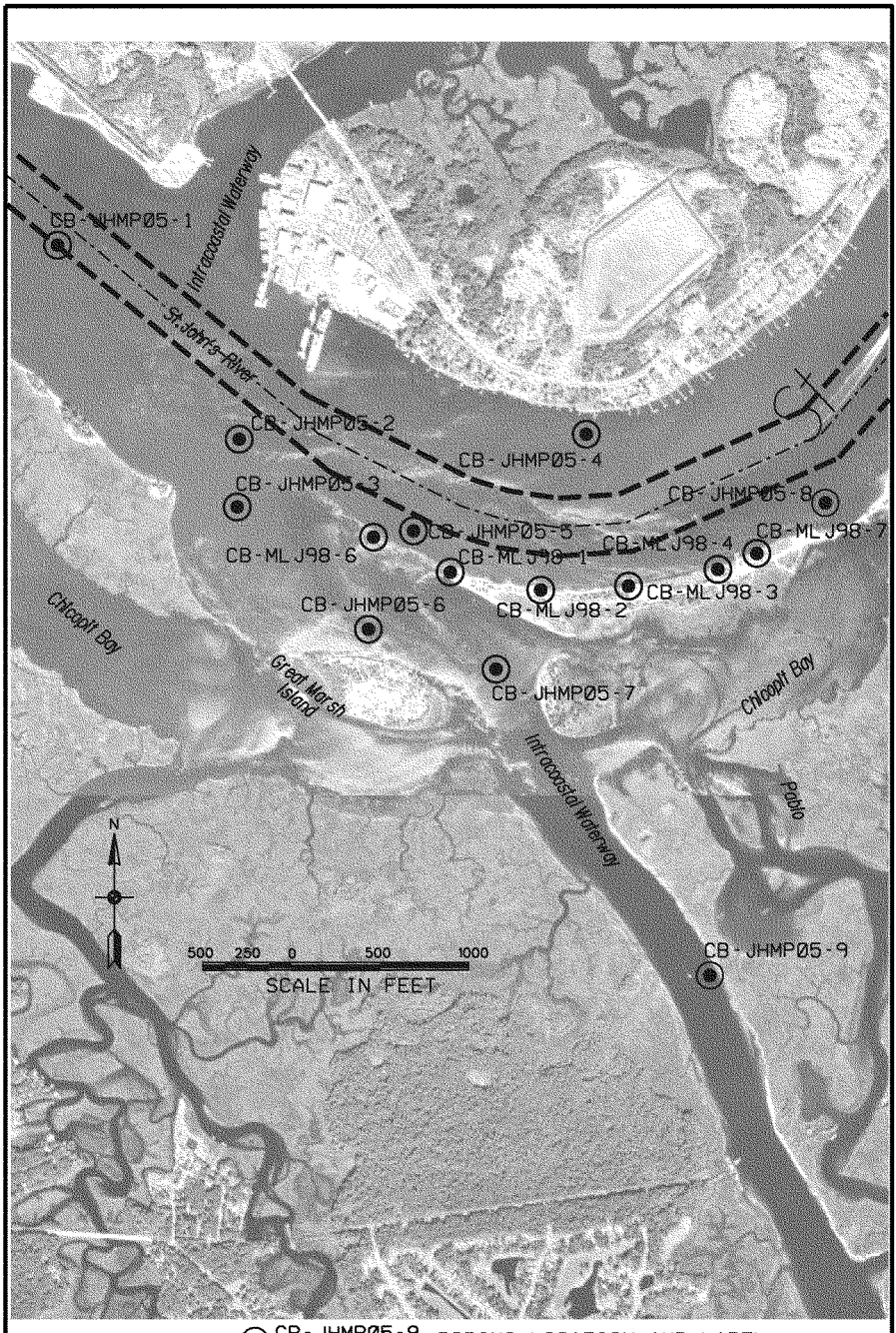
- The proposed wetlands mitigation area west of Great Marsh Island will accept dredged material from degradation of the Little Jetty and from the dredging the channel of the Intracoastal Waterway.

- Geotechnical information is lacking in the immediate area of the proposed wetlands mitigation area and the area to be dredged south of Great Marsh Island.

- The training walls on the east and west sides of the Intracoastal Waterway need to have foundation information gathered to assure a suitable foundation.

GEOTECHNICAL ATTACHMENT

Plate B-1



CB-JHMP05-9 BORING LOCATION AND LABEL

Plate B-1	JACKSONVILLE HARBOR NAVIGATION STUDY (MILE POINT) JACKSONVILLE, FLORIDA INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT BORING LOCATIONS ON EXISTING CONDITIONS	File name Reference Dwgr	Designed by: SRM Drawn by: SRM Chkd by:	Scale As Shown Plot date Plot scale ENGINEERING APPENDIX	DEPARTMENT OF THE ARMY JACKSONVILLE DISTRICT, CORPS OF ENGINEERS JACKSONVILLE, FLORIDA	US Army Corps of Engineers Jacksonville District

GEOTECHNICAL ATTACHMENT

Boring Logs from 1998

ATTACHMENT B

Hole No.CB-MLJ98-1

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Mayport Little Jetties
2. LOCATION (Coordinates or Station): X=356,593 Y=2197,921
3. DRILLING AGENCY: ARDAMAN & ASSOCIATES, INC.
4. HOLE NO. (As shown on drawing title and file number): CB-MLJ98-1
5. NAME OF DRILLER: C. Wallace
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 19.5 Ft.
8. DEPTH DRILLED INTO ROCK: 0.0 Ft.
9. TOTAL DEPTH OF HOLE: 19.5 Ft.
10. SIZE AND TYPE OF BIT: 2 15/16" Tricone
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 45 on ATV
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 13 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: 2.1
16. DATE HOLE STARTED: 2/9/98 COMPLETED: 2/10/98
17. ELEVATION TOP OF HOLE: 5.5 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 8 %
19. SIGNATURE OF GEOLOGIST: ROCKLAND BURR

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/.5'
5.5	0.0					5.5	
			Sand, fine to medium grained, brown, trace of shell (SP)	80	1	Dry	4 6 8
						4.0	
				80	2	Moist	5 5 5
2.5	3.0					2.5	
			Sand, fine to coarse grained, brown, a little shell, trace of shell gravel (SP)	90	3	Water Bearing GWT = 3.4' Start Mud Rotary	3 3 2
						1.0	
				80	4		2 1 2
						-.5	
				50	5	Lost circulation. Set HW casing.	4 3 4
-2.5	8.0					-2.0	
			Sand, fine grained, gray (SP)	75	6		3 2 3
						-3.5	
				80	7		4 3 3
						-5.0	
-6.0	11.5			70	8		3 2 2
-6.5	12.0		Silt, dark gray (ML)			-6.5	
			Sand, fine grained, gray, laminations of silt (SP)	75	9		7 9 13
-8.0	13.5					-8.0	
			Sand, fine grained, gray, trace of shell (SP)	75	10		4 8 10
						-9.5	
				100	11		10 12 15
						-11.0	
				100	12		5 18 20
						-12.5	
				100	13		12 17 21
-14.0	19.5					-14.0	
			End of Boring at 19.5'				
			Soils are field visually classified in accordance with the Unified Soils Classification System.				

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT: Mayport Little Jetties | HOLE NUMBER: CB-MLJ98-1

Hole No.CB-MLJ98-2

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Mayport Little Jetties
2. LOCATION (Coordinates or Station): X=357,614 Y=2197,719
3. DRILLING AGENCY: ARDAMAN & ASSOCIATES, INC.
4. HOLE NO. (As shown on drawing title and file number): CB-MLJ98-2
5. NAME OF DRILLER: C. Wallace
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 19.5 Ft.
8. DEPTH DRILLED INTO ROCK: 0.0 Ft.
9. TOTAL DEPTH OF HOLE: 19.5 Ft.
10. SIZE AND TYPE OF BIT: 2 15/16" Tricone
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 45 on ATV
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 13 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: 4.2
16. DATE HOLE STARTED: 2/10/98 COMPLETED: 2/10/98
17. ELEVATION TOP OF HOLE: 4.9 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 91.5 %
19. SIGNATURE OF GEOLOGIST: ROCKLAND BURR

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/.5'
4.9	0.0					4.9	
			Sand, fine to medium grained, brown, trace of shell (SP)	100	1	Moist GWT = 0.7'	2 2 4
						3.4	
				100	2	Start Mud Rotary	4 6 7
1.9	3.0					1.9	
			Sand, fine to coarse grained, brown, trace of shell (SP)	100	3	Set HW casing to hold fine sand	5 6 8
.4	4.5					.4	
			Sand, fine grained, brown, trace of shell (SP)	90	4		5 7 8
						-1.1	
				100	5		7 12 12
						-2.6	
				75	6		7 5 7
						-4.1	
				100	7		7 12 16
						-5.6	
				90	8		10 17 18
						-7.1	
				80	9		9 16 19
						-8.6	
				75	10		6 11 12
						-10.1	
			Laminations of Silt	90	11		8 15 21
						-11.6	
				90	12		12 18 21
						-13.1	
				90	13		10 16 21
-14.1	19.0						
-14.6	19.5		Sand, fine grained, gray (SP)			-14.6	
			End of Boring at 19.5'				
			Soils are field visually classified in accordance with the Unified Soils Classification System.				

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT: Mayport Little Jetties | HOLE NUMBER: CB-MLJ98-2

Hole No.CB-MLJ98-3

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Mayport Little Jetties
2. LOCATION (Coordinates or Station): X=358,605 Y=2197,764
3. DRILLING AGENCY: ARDAMAN & ASSOCIATES, INC.
4. HOLE NO. (As shown on drawing title and file number): CB-MLJ98-3
5. NAME OF DRILLER: C. Wallace
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 19.5 Ft.
8. DEPTH DRILLED INTO ROCK: 0.0 Ft.
9. TOTAL DEPTH OF HOLE: 19.5 Ft.
10. SIZE AND TYPE OF BIT: 2 15/16" Tricone
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 45 on ATV
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 13 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: 3.3
16. DATE HOLE STARTED: 2/10/98 COMPLETED: 2/10/98
17. ELEVATION TOP OF HOLE: 3.9 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 78 %
19. SIGNATURE OF GEOLOGIST: ROCKLAND BURR

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/.5'
3.9	0.0					3.9	
			Sand, fine grained, brown, trace of shell (SP)	75	1		5 8 8
2.4	1.5					2.4	
			Sand, fine grained, brown (SP)	100	2	GWT = 0.6' Start Mud Rotary	5 7 7
						.9	
				100	3	Set HW casing to control silt and fine sand.	3 2 2
-.1	4.0					-.6	
			Silt, dark gray, lenses of clay (ML)	100	4		1 4 10
-1.6	5.5		Laminations of Sand			-2.1	
			Sand, fine grained, gray (SP)	100	5		7 11 10
						-3.6	
				75	6		4 5 7
						-5.1	
				75	7		4 5 6
						-6.6	
				60	8		10 14 17
						-8.1	
				60	9		6 13 14
-9.6	13.5					-9.6	
			Sand, medium to coarse grained, gray, trace of shell (SP)	75	10		6 6 7
						-11.1	
-12.1	16.0			75	11		6 8 14
			Sand, fine grained, gray (SP)			-12.6	
				60	12		11 17 20
						-14.1	
				100	13		10 13 18
-15.6	19.5					-15.6	
			End of Boring at 19.5'				
			Soils are field visually classified in accordance with the Unified Soils Classification System.				

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT: Mayport Little Jetties | HOLE NUMBER: CB-MLJ98-3

Hole No.CB-MLJ98-4

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Mayport Little Jetties
2. LOCATION (Coordinates or Station): X=359,613 Y=2197,952
3. DRILLING AGENCY: ARDAMAN & ASSOCIATES, INC.
4. HOLE NO. (As shown on drawing title and file number): CB-MLJ98-4
5. NAME OF DRILLER: C. Wallace
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 19.5 Ft.
8. DEPTH DRILLED INTO ROCK: 0.0 Ft.
9. TOTAL DEPTH OF HOLE: 19.5 Ft.
10. SIZE AND TYPE OF BIT: 2 15/16" Tricone
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 45 on ATV
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 13 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: 5.7
16. DATE HOLE STARTED: 2/11/98 COMPLETED: 2/11/98
17. ELEVATION TOP OF HOLE: 5.7 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 74 %
19. SIGNATURE OF GEOLOGIST: ROCKLAND BURR

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/.5'
5.7	0.0					5.7	
			Sand, fine grained, brown, trace of shell (SP)	90	1	GWT = 0.0'	2 7 8
4.2	1.5					4.2	
			Sand, fine grained, gray, lens of silt (SP)	90	2	Start Mud Rotary	4 9 10
1.7	4.0					2.7	
				100	3		5 8 7
1.2	4.5		Sand, fine grained, gray (SP)			1.2	
.7	5.0		Silt, dark gray (ML)				3
			Sand, fine grained, gray, trace of shell, trace of shell gravel (SP-SM)	75	4	Set HW Casing	6 11
-.8	6.5					-.3	
			Sand, medium to coarse grained, gray, trace of shell, trace of shell gravel (SP)	90	5		3 7 11
-1.8	7.5					-1.8	
-2.3	8.0		Sand, fine grained, gray (SP)				4
			Sand, fine to medium grained, gray, trace of shell (SP)	50	6		3 5
						-3.3	
				75	7		8 8 9
						-4.8	
				75	8		3 4 5
						-6.3	
				80	9		4 4 5
						-7.8	
				60	10		3 3 4
						-9.3	
-10.3	16.0			50	11		3 2 0
			Clay, dark gray (CL)			-10.8	
-11.8	17.5			60	12		2 1 3
			Sand, fine grained, gray (SP)			-12.3	
				80	13		15 27 42
-13.8	19.5					-13.8	
			End of Boring at 19.5'				
			Soils are field visually classified in accordance with the Unified Soils Classification System.				

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. | PROJECT: Mayport Little Jetties | HOLE NUMBER: CB-MLJ98-4

Hole No.CB-MLJ98-6

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Mayport Little Jetties
2. LOCATION (Coordinates or Station): X=355,726 Y=2198,315
3. DRILLING AGENCY: ARDAMAN & ASSOCIATES, INC.
4. HOLE NO. (As shown on drawing title and file number): CB-MLJ98-6
5. NAME OF DRILLER: C. Wallace
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 19.5 Ft.
8. DEPTH DRILLED INTO ROCK: 0.0 Ft.
9. TOTAL DEPTH OF HOLE: 19.5 Ft.
10. SIZE AND TYPE OF BIT: 2 15/16" Tricone
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 45 on Barge
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 13 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: N/A
16. DATE HOLE STARTED: 2/12/98 COMPLETED: 2/12/98
17. ELEVATION TOP OF HOLE: -7.8 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 85 %
19. SIGNATURE OF GEOLOGIST: ROCKLAND BURR

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/.5'
-7.8	0.0					-7.8	
			Sand, fine grained, gray (SP)	90	1	Set NW Casing	5 3 2
-9.3	1.5					-9.3	
			Sand, fine to coarse grained, gray, a little shell, laminations of silt (SP-SM)	75	2		1 2 3
-10.8	3.0					-10.8	
			Sand, coarse grained, gray, a little shell, trace of shell gravel (SP)	80	3		9 10 10
-12.3	4.5					-12.3	
			Sand, fine grained, gray (SP)	90	4		6 8 7
						-13.8	
				75	5		5 6 7
						-15.3	
				75	6		4 7 9
						-16.8	
				90	7		4 5 8
						-18.3	
			Laminations of Silt	80	8		7 6 5
						-19.8	
				80	9		8 7 10
						-21.3	
				90	10		4 6 8
			Laminations of Silt			-22.8	
				100	11		7 12 11
						-24.3	
				100	12		6 5 13
-25.8	18.0					-25.8	
			Sand, fine grained, gray, trace of shell (SP)	100	13		8 10 12
-27.3	19.5					-27.3	
			End of Boring at 19.5'				
			Soils are field visually classified in accordance with the Unified Soils Classification System.				

0 | 2.5 | 5 | 7.5 | 10 | 12.5 | 15 | 17.5 | 20 | 22.5

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. MAR 71

PROJECT: Mayport Little Jetties | HOLE NUMBER: CB-MLJ98-6

Hole No.CB-MLJ98-7

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 1

1. PROJECT: Mayport Little Jetties
2. LOCATION (Coordinates or Station): Y=2198,132 X=360,053
3. DRILLING AGENCY: ARDAMAN & ASSOCIATES, INC.
4. HOLE NO. (As shown on drawing title and file number): CB-MLJ98-7
5. NAME OF DRILLER: C. Wallace
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED
7. THICKNESS OF BURDEN: 19.5 Ft.
8. DEPTH DRILLED INTO ROCK: 0.0 Ft.
9. TOTAL DEPTH OF HOLE: 19.5 Ft.
10. SIZE AND TYPE OF BIT: 2 15/16" Tricone
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): MLW
12. MANUFACTURER'S DESIGNATION OF DRILL: CME 45 on ATV
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: disturbed: 13 undisturbed: 0
14. TOTAL NUMBER OF CORE BOXES: 1
15. ELEVATION GROUND WATER: 4.4
16. DATE HOLE STARTED: 2/12/98 COMPLETED: 2/12/98
17. ELEVATION TOP OF HOLE: 5.6 Ft.
18. TOTAL CORE RECOVERY FOR BORING: 77 %
19. SIGNATURE OF GEOLOGIST: ROCKLAND BURR

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	CORE REC %	SAMPLE NUMBER	REMARKS	BLOWS/.5'
5.6	.0					5.6	
			Sand, fine to medium grained, brown, a little shell, trace of shell gravel (SP)	100	1	GWT = 1.2'	2 5 7
						4.1	
				100	2		8 11 10
						2.6	
1.1	4.5			75	3		9 7 9
						1.1	
			Sand, medium to coarse grained, a little shell, a little shell gravel (SP-SM)	50	4		4 4 5
						-.4	
				60	5		3 3 5
						-1.9	
				60	6		4 4 4
						-3.4	
				50	7		5 4 4
						-4.9	
-5.9	11.5			50	8	Set HW Casing to Control Silt	3 7 1
						-6.4	
			Laminations and lenses of silt, clay and fine, dark gray sand (SM)	100	9		2 3 3
						-7.9	
				100	10		1 1 1
						-9.4	
				100	11		1 2 2
						-10.9	
				75	12		2 2 2
						-12.4	
				90	13		1 1 3
-13.9	19.5					-13.9	
			End of Boring at 19.5'				
			Soils are field visually classified in accordance with the Unified Soils Classification System.				

0 2.5 5 7.5 10 12.5 15 17.5 20 22.5

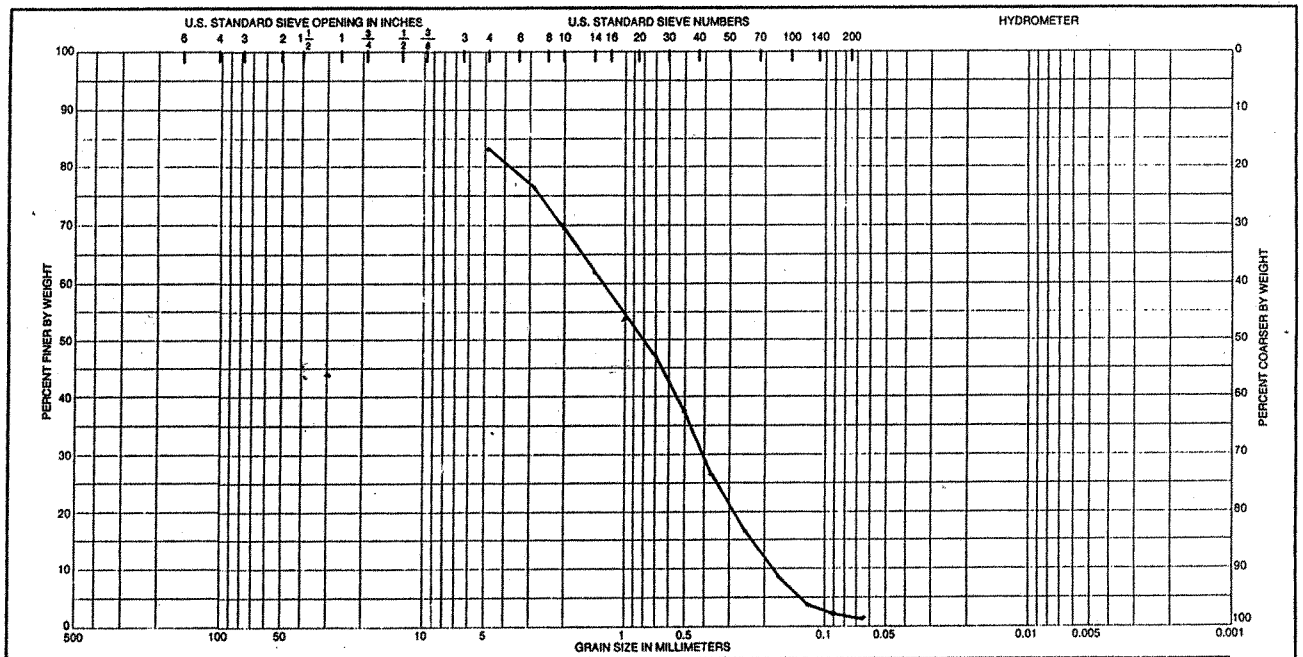
ENG FORM 1836 MAR 72 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT: Mayport Little Jetties | HOLE NUMBER: CB-MLJ98-7

GEOTECHNICAL ATTACHMENT

Analytical Data from 1998

ATTACHMENT B

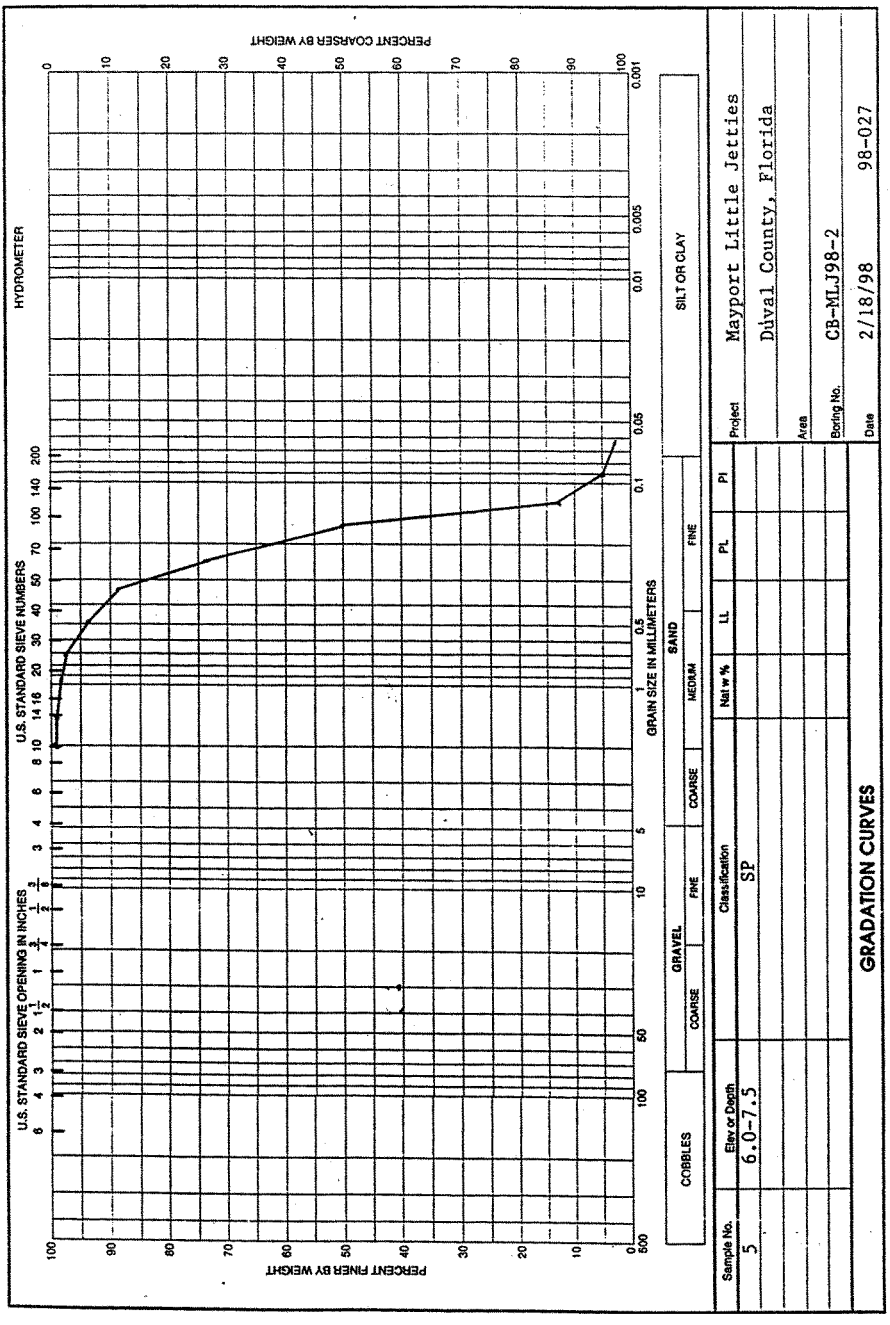


Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
4	4.5-6.0	SP				

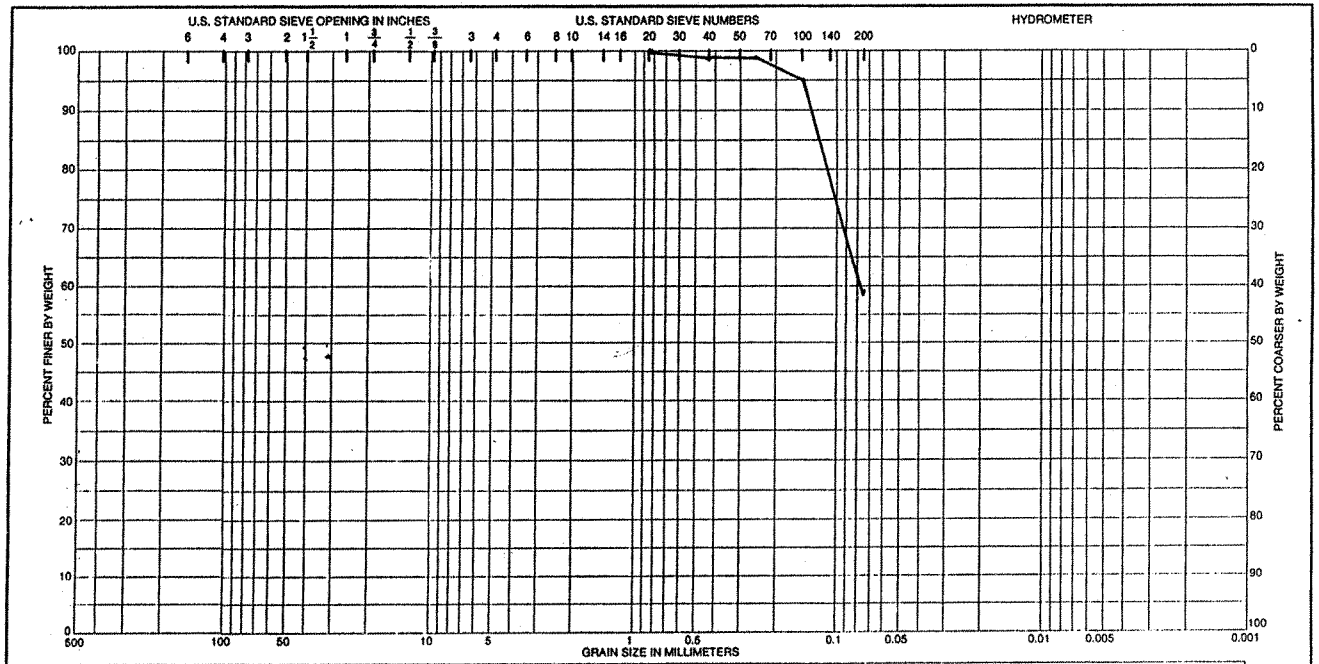
GRADATION CURVES

Project: Mayport Little Jetties
Duval County, Florida
Area:
Boring No.: CB-MLJ98-1
Date: 2/18/98 98-027

ENG FORM 1 MAY 63 2087



ENG FORM 1 MAY 83 2087

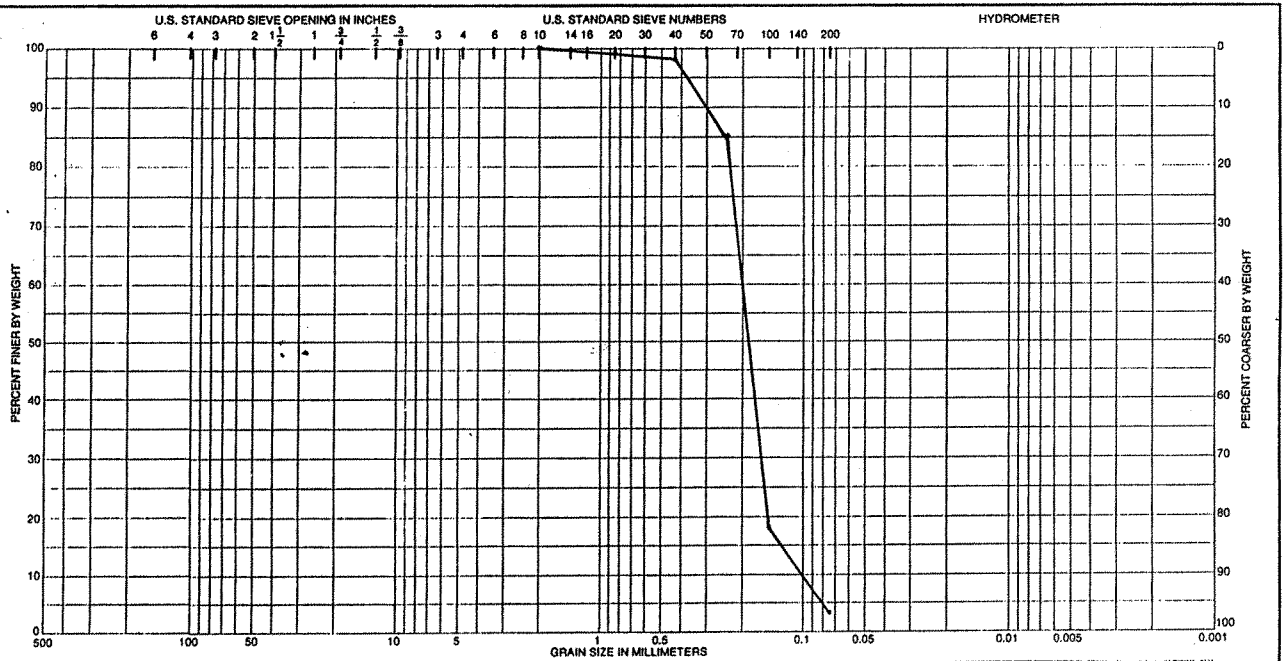


Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
4	4.0 - 5.5	ML		96	33	63

GRADATION CURVES

Project: Mayport Little Jetties
Duval County, Florida
Area:
Boring No.: CB-MLJ98-3
Date: 2/18/98 98-027

ENG FORM 1 MAY 63 2087

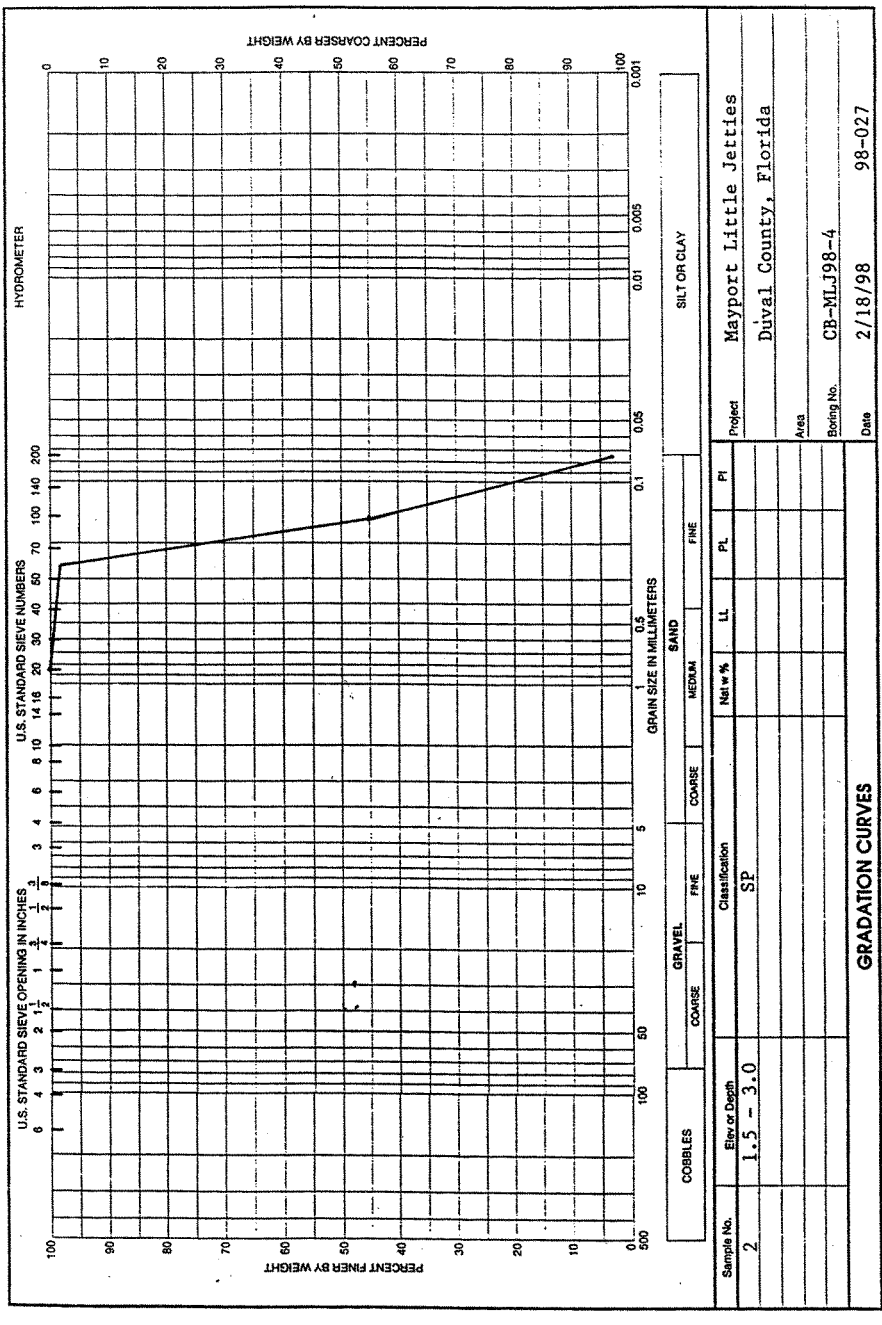


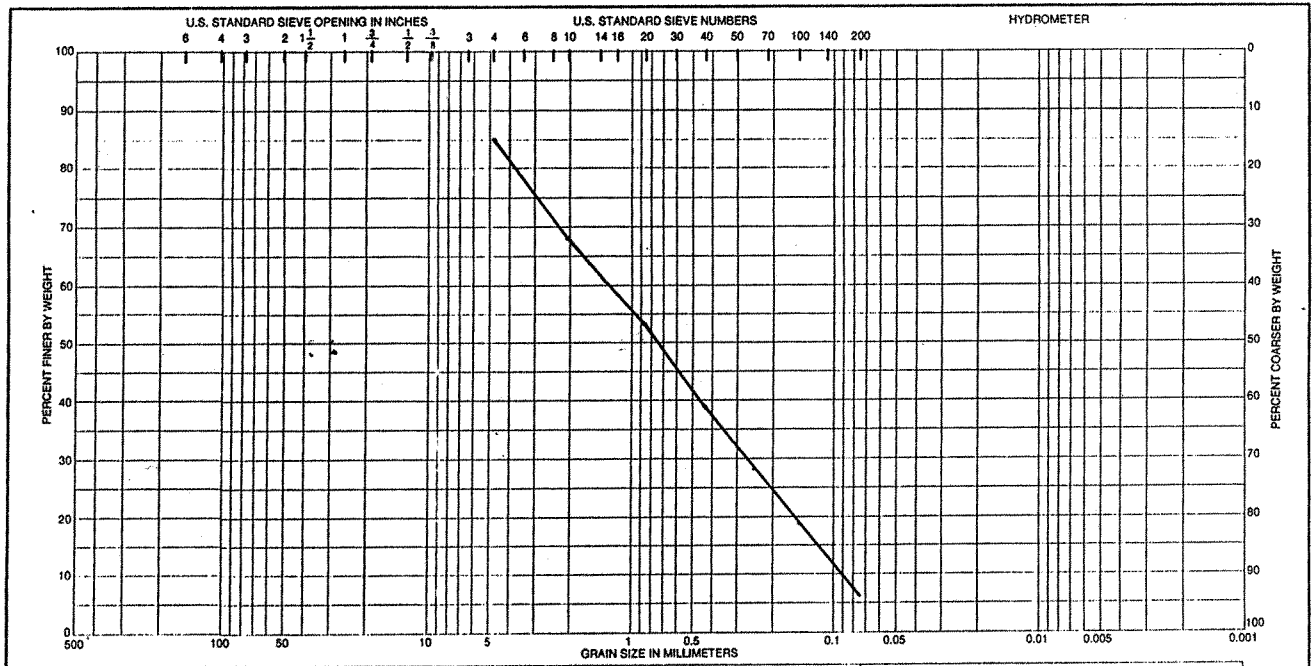
Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
5	6.0 - 7.5	SP				

GRADATION CURVES

Project: Mayport Little Jetties
Duval County, Florida
Area:
Boring No.: CB-MLJ98-3
Date: 2/18/98 98-027

ENG FORM 1 MAY 63 2087


U.S. STANDARD SIEVE OPENING IN INCHES
U.S. STANDARD SIEVE NUMBERS
HYDROMETER
PERCENT FINER BY WEIGHT
PERCENT COARSER BY WEIGHT
GRAIN SIZE IN MILLIMETERS
COBBLES
GRAVEL
COARSE
FINE
SAND
COARSE
MEDIUM
FINE
SILT OR CLAY
Sample No.
Elev or Depth
Classification
Nat w %
LL
PL
PI
2
1.5 - 3.0
SP
Project
Mayport Little Jetties
Duval County, Florida
Area
Boring No.
CB-MLJ98-4
Date
2/18/98
98-027
GRADATION CURVES
ENG FORM 2087
1 MAY 63

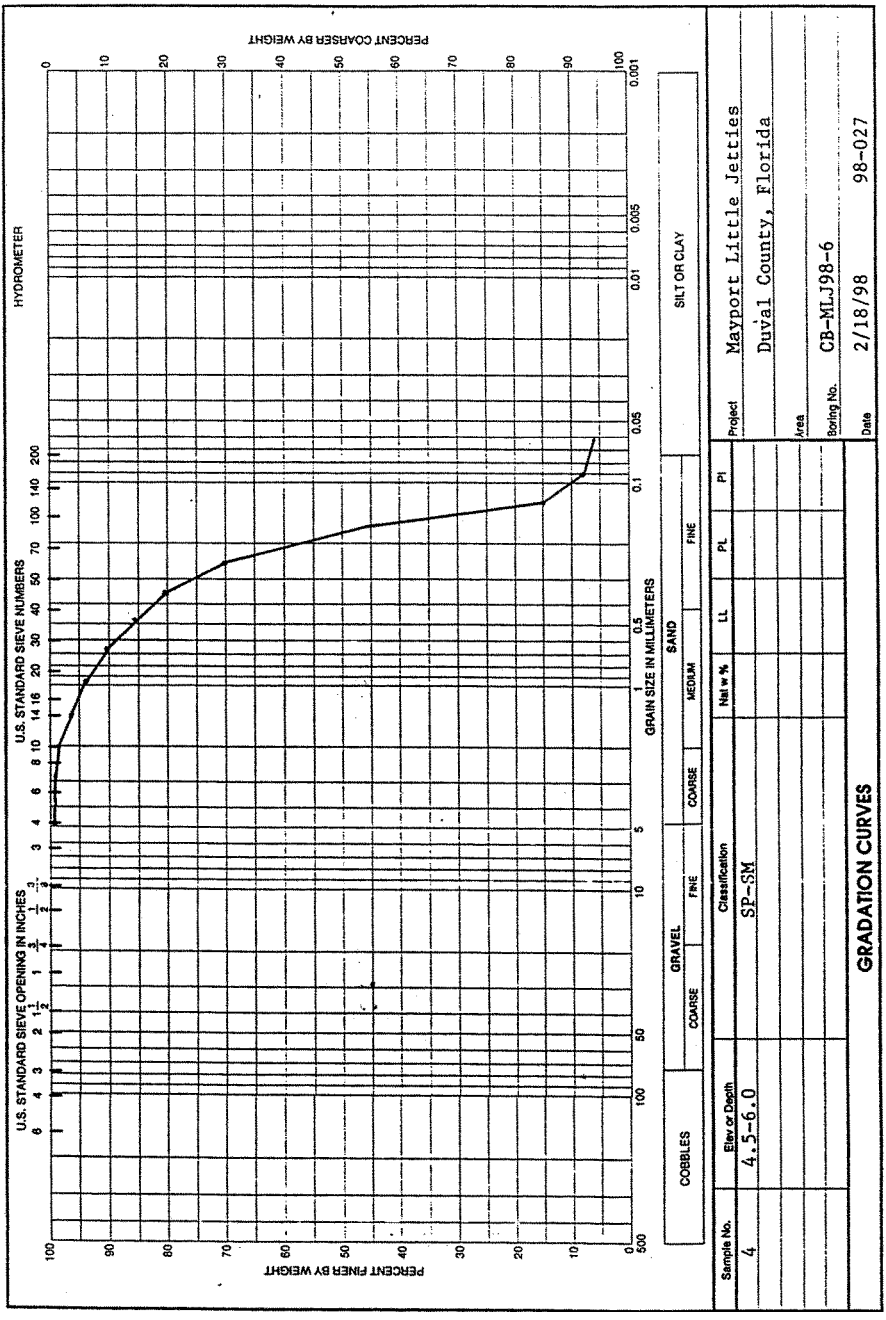


Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
2	1.5 - 3.0	SP-SM				

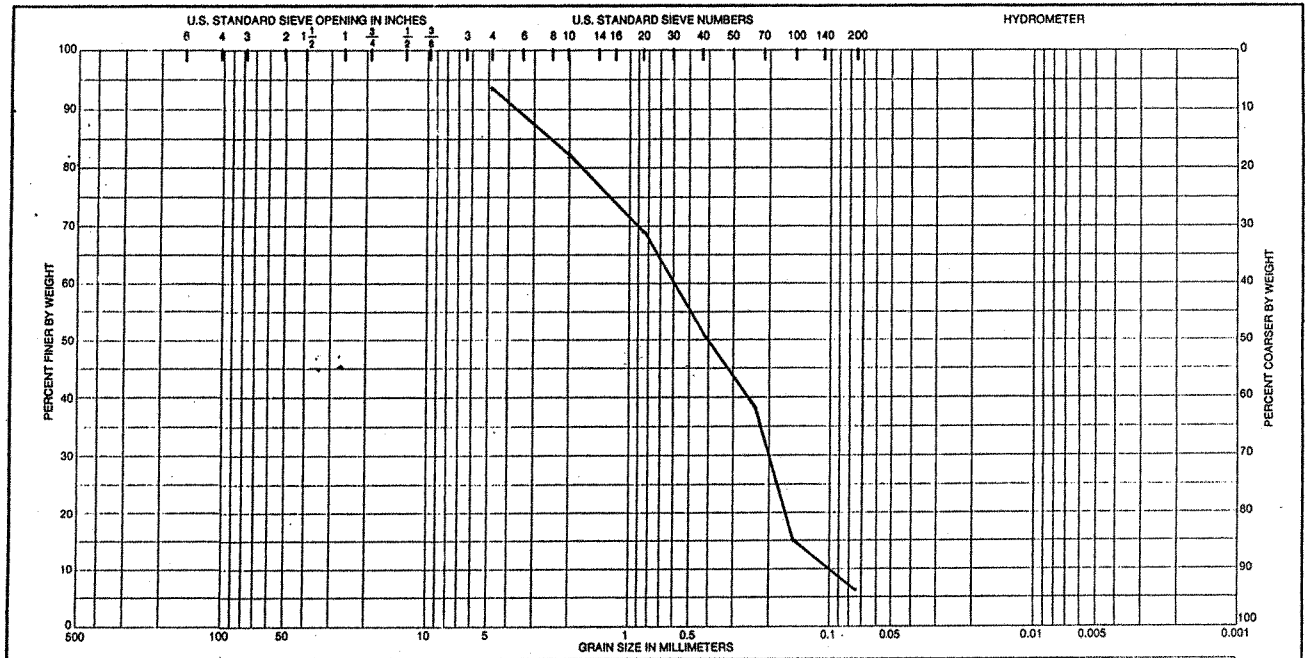
GRADATION CURVES

Project: Mayport Little Jetties
Duval County, Florida
Area:
Boring No.: CB-MLJ98-6
Date: 2/18/98 98-027

ENG FORM 1 MAY 63 2087



ENG FORM 2087 1 MAY 63

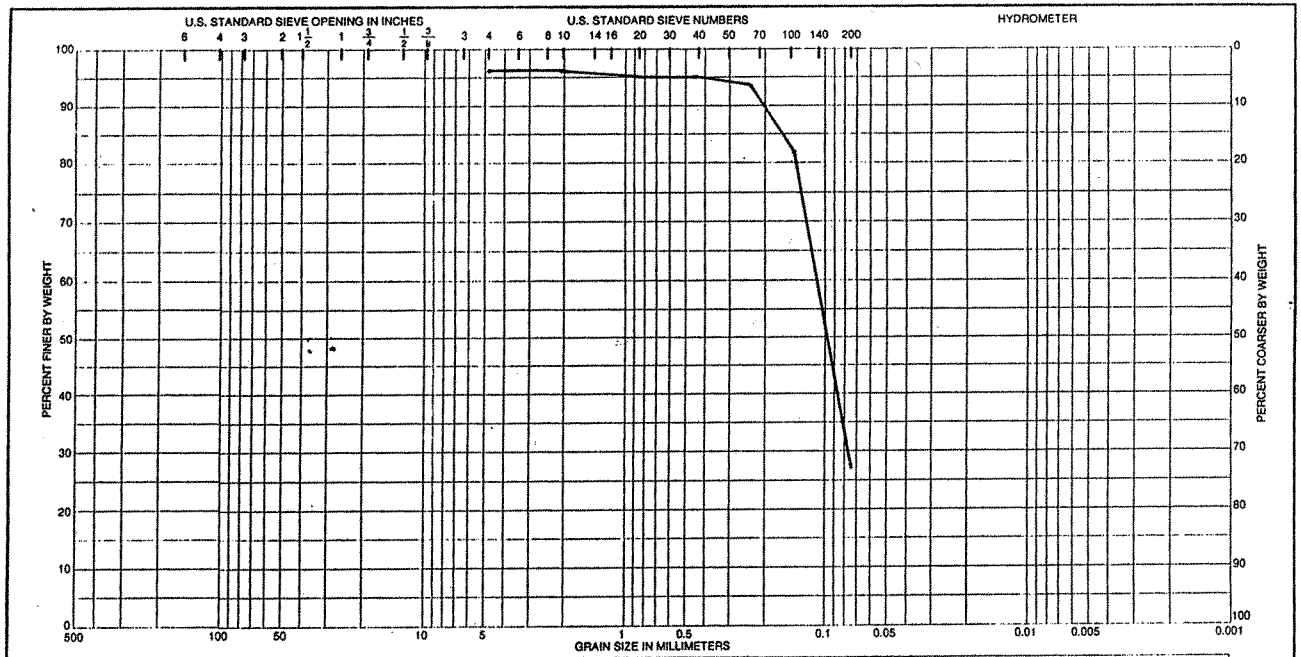


Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
4	4.5 - 6.0	SP-SM				

GRADATION CURVES

Project: Mayport Little Jetties
Duval County, Florida
Area:
Boring No.: CB-MLJ98-7
Date: 2/18/98 98-027

ENG FORM 1 MAY 63 2087



Sample No.	Elev or Depth	Classification	Nat w %	LL	PL	PI
10	13.5 - 15.0	SM				

GRADATION CURVES

Project: Mayport Little Jetties
Duval County, Florida
Area:
Boring No.: CB-MLJ98-7
Date: 2/18/98 98-027

ENG FORM 1 MAY 63 2087

GEOTECHNICAL ATTACHMENT

Boring Logs from 2005

ATTACHMENT B

Boring Designation CB-JHMP-05-1

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 2 SHEETS

1. PROJECT: Jacksonville Harbor Mile Point
9. SIZE AND TYPE OF BIT: See Remarks
10. COORDINATE SYSTEM/DATUM: State Plane, FLE (U.S. Ft.) | HORIZONTAL: NAD83 | VERTICAL: MLLW
2. BORING DESIGNATION: CB-JHMP-05-1 | LOCATION COORDINATES: X = 508,390 Y = 2,201,784
11. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500 | ☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAS | CONTRACTOR FILE NO.:
12. TOTAL SAMPLES: DISTURBED 13 | UNDISTURBED (UD) 0
4. NAME OF DRILLER: Danny Hewett
13. TOTAL NUMBER CORE BOXES: 1
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL: | BEARING:
14. ELEVATION GROUND WATER: N/A
15. DATE BORING: STARTED 08-27-06 | COMPLETED 08-27-06
6. THICKNESS OF OVERBURDEN: N/A
16. ELEVATION TOP OF BORING: -43.8 Ft.
7. DEPTH DRILLED INTO ROCK: N/A
17. TOTAL RECOVERY FOR BORING: 68 %
8. TOTAL DEPTH OF BORING: 16.2 Ft.
18. SIGNATURE AND TITLE OF INSPECTOR: Greg Taylor, Geologist

ELEV.	DEPTH	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	ROD OR CORE	REMARKS	BLOWS/0.5 FT.	N-VALUE
-43.8	0.0					-43.8		
		SAND, silty, mostly fine-grained sand-sized quartz, little silt, few shell up to 1/2", wet, dark brown (SM)	52	1		SPT Sampler	11 26	48
-44.8	1.0	SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell up to 1/2", trace fines, wet, tan/gray (SP)		2		-45.3	22	
						Overwashed		
-47.5	3.7					-47.5		
		CLAY, lean, low plasticity, very hard, few fine-grained sand-sized quartz, dry, tan (CL)	100	3		SPT Sampler	0 50/0.4'	
						-48.4 Advanced Boring		
						-48.5	38	
			100	4		SPT Sampler	56	123
						-50.0	67	
			45	5		SPT Sampler	19 28	66
-51.2	7.4			6		-51.5	38	
		SAND, poorly-graded, mostly fine-grained sand-sized quartz, some dark minerals, moist, gray (SP)	80	7		SPT Sampler	18 36	90
						-53.0	54	
-53.5	9.7	At El. -53.0 Ft.	80	8		-53.5 SPT Sampler	60	
		CLAY, lean, low plasticity, hard, trace fine-grained sand-sized quartz, dry, gray/green (CL)	67	9		-53.8 SPT Sampler	50/0.0'	
						-54.0 Advanced Boring		
			100	10		SPT Sampler	16 21	47
		At El. -55.0 Ft., trace fine gravel-sized carbonate up to 1/4", moderate cementation				-55.5	26	
			73	11		SPT Sampler	30 39	79
		At El. -56.5 Ft., no cementation				-57.0	40	
			87	12		SPT Sampler	18 26	57
						-58.5	31	
			87	13		SPT Sampler	40	

0 5 10 15

SAJ FORM 1836
JUN 02

(Continued)

Boring Designation CB-JHMP-05-1

DRILLING LOG (Cont. Sheet)	INSTALLATION Jacksonville District	SHEET 2 OF 2 SHEETS
PROJECT Jacksonville Harbor Mile Point	COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL MLLW
LOCATION COORDINATES X = 508,390 Y = 2,201,784	ELEVATION TOP OF BORING -43.8 Ft.	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE NO.	ROD OR CORE DRILL	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-60.0	16.2			87	13		SPT Sampler -60.0	40 / 33	73

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. From El. -43.8 ft.to El. -44.8 ft. and El. -55.5 ft. to El. -57.0 ft.,.

4. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.0/1.0	SP-SC*
2	1.0/1.5	SC*
4	4.7/6.2	SC*
7	7.7/9.2	SC*
10	10.2/11.7	SC*

*Lab visual classification based on gradation curve. No Atterberg limits.

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-JHMP-05-2

DRILLING LOG

DIVISION	South Atlantic
INSTALLATION	Jacksonville District
SHEET	1 OF 2 SHEETS
1. PROJECT	Jacksonville Harbor Mile Point Erosion Investigation
2. BORING DESIGNATION	CB-JHMP-05-2
LOCATION COORDINATES	X = 510,440 Y = 2,199,595
3. DRILLING AGENCY	Corps of Engineers - CESAS
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Danny Hewett
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	23.3 Ft.
9. SIZE AND TYPE OF BIT	See Remarks
10. COORDINATE SYSTEM/DATUM	State Plane, FLE (U.S. Ft.) / HORIZONTAL NAD83 / VERTICAL MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500 ☐ AUTO HAMMER ☒ MANUAL HAMMER
12. TOTAL SAMPLES	DISTURBED 16 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	1
14. ELEVATION GROUND WATER	N/A
15. DATE BORING	STARTED 08-28-06 / COMPLETED 08-28-06
16. ELEVATION TOP OF BORING	-36.7 Ft.
17. TOTAL RECOVERY FOR BORING	75 %
18. SIGNATURE AND TITLE OF INSPECTOR	Greg Taylor, Geologist

ELEV.	DEPTH	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE #	ROD OR CORE	REMARKS	BLOWS/0.5 FT.	N-VALUE
-36.7	0.0					-36.7		
		CLAY, fat, high plasticity, soft, few shell up to 1/4", trace fine-grained sand-sized quartz, wet, green gray (CH)	87	1		SPT Sampler	0 1 3	4
						-38.2		
		At El. -38.6 Ft., discontinue shell	87	2		SPT Sampler	5 7 8	15
						-39.7		
			100	3		SPT Sampler	3 9 9	18
						-41.2		
			100	4		SPT Sampler	5 9 11	20
						-42.7		
		At El. -43.7 Ft., few fine-grained sand-sized quartz	100	5		SPT Sampler	8 8 8	16
						-44.2		
		At El. -44.8 Ft., little fine-grained sand-sized quartz	100	6		SPT Sampler	5 6 8	14
						-45.7		
			80	7		SPT Sampler	5 10 12	22
						-47.2		
		At El. -47.6 Ft., stratified with poorly-graded sand up to 1/2", every 2 inches	93	8		SPT Sampler	5 8 11	19
						-48.7		
		At El. -49.3 Ft., few shell up to 1/4"	73	9		SPT Sampler	9 16 23	39
-50.3	13.6	At El. -50.0 Ft., some shell, trace fine-grained sand-sized quartz		10				
		SAND, silty, mostly fine-grained sand-sized quartz, some fines, moist, gray/green (SM)	78	11		SPT Sampler	28 60/0.4'	
						-51.1		
			100	12		-51.2 Advanced Boring SPT Sampler	64	

(Continued)

SAJ FORM 1836
JUN 02

Boring Designation CB-JHMP-05-2

DRILLING LOG (Cont. Sheet)	INSTALLATION Jacksonville District	SHEET 2 OF 2 SHEETS
PROJECT Jacksonville Harbor Mile Point	COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL MLLW
LOCATION COORDINATES X = 510,440 Y = 2,199,595	ELEVATION TOP OF BORING -36.7 Ft.	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	ROD OR CORED	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
							-51.9	50/0.2'	
							Advanced Boring		
							-52.7		
				85	13		SPT Sampler	30 62	112+
							-54.0	50/0.3'	
							-54.2 Advanced Boring		
			At El. -54.5 Ft., lenses of clay up to 1/4 in. thick	62	14		SPT Sampler	40	
							-55.0	50/0.3'	
							Advanced Boring		
							-55.7		
				33	15		SPT Sampler	50 45 37	82
							-57.2		
-57.7	21.0			100	16		-57.4 SPT Sampler	50/0.2'	
							-57.7 Advanced Boring		
			SILT, inorganic-L, low plasticity, very soft, little fine-grained sand-sized sand, dry, gray (ML)	0			SPT Sampler	77 50 52	102
							-59.2		
-60.0	23.3			0			SPT Sampler -60.0	30 50/0.3'	

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Mud loss at El. 38.2 ft.

4. From El. -57.7 ft. to El. -60.0 ft., 4 x 5.5 " core barrel used to retrieve material after SPT had no recovery.

5. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
3	3.0/4.5	CH*
11	13.6/14.4	SC*

*Lab visual classification based on gradation curve. No Atterberg limits.

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-JHMP-05-3

DRILLING LOG | DIVISION: South Atlantic | INSTALLATION: Jacksonville District | SHEET 1 OF 2 SHEETS

1. PROJECT: Jacksonville Harbor Mile Point
2. BORING DESIGNATION: CB-JHMP-05-3 | LOCATION COORDINATES: X = 510,417 Y = 2,198,831
3. DRILLING AGENCY: Corps of Engineers - CESAS | CONTRACTOR FILE NO.:
4. NAME OF DRILLER: Danny Hewett
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED | DEG. FROM VERTICAL: | BEARING:
6. THICKNESS OF OVERBURDEN: N/A
7. DEPTH DRILLED INTO ROCK: N/A
8. TOTAL DEPTH OF BORING: 18.0 Ft.
9. SIZE AND TYPE OF BIT: See Remarks
10. COORDINATE SYSTEM/DATUM: State Plane, FLE (U.S. Ft.) | HORIZONTAL: NAD83 | VERTICAL: MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500 | ☐ AUTO HAMMER ☒ MANUAL HAMMER
12. TOTAL SAMPLES: DISTURBED 12 | UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES: 1
14. ELEVATION GROUND WATER: N/A
15. DATE BORING: STARTED 08-31-06 | COMPLETED 08-31-06
16. ELEVATION TOP OF BORING: -12.5 Ft.
17. TOTAL RECOVERY FOR BORING: 39 %
18. SIGNATURE AND TITLE OF INSPECTOR: Greg Taylor, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/0.5 FT.	N-VALUE
-12.5	0.0						-12.5		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace dark minerals, wet, tan/gray (SP)	67	1		SPT Sampler	6, 12, 14	26
							-14.0		
			At El. -14.5 Ft., few shell up to 1/4"	100	2		SPT Sampler	20, 17, 22	39
			At El. -15.3 Ft., discontinue shell, dark gray				-15.5		
				20	3		SPT Sampler	7, 9, 10	19
							-17.0		
				20	4		SPT Sampler	12, 10, 10	20
							-18.5		
				20	5		SPT Sampler	8, 11, 8	19
							-20.0		
				27	6		SPT Sampler	11, 7, 14	21
							-21.5		
				33	7		SPT Sampler	16, 14, 12	26
							-23.0		
				40	8		SPT Sampler	15, 9, 9	18
							-24.5		
				33	9		SPT Sampler	14, 11, 15	26
							-26.0		
				40	10		SPT Sampler	15, 15, 17	32
							-27.5		

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SAJ FORM 1836
JUN 02

(Continued)

Boring Designation CB-JHMP-05-3

DRILLING LOG (Cont. Sheet)	INSTALLATION Jacksonville District	SHEET 2 OF 2 SHEETS
PROJECT Jacksonville Harbor Mile Point	COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL MLLW
LOCATION COORDINATES X = 510,417 Y = 2,198,831	ELEVATION TOP OF BORING -12.5 Ft.	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	ROD CORE	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
				27	11		SPT Sampler	12 11 7	18
							-29.0		
				40	12		SPT Sampler	15 12 12	24
-30.5	18.0						-30.5		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Mud loss at El. -45.7 ft.

4. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
2	1.5/3.0	SP-SC*

*Lab visual classification based on gradation curve. No Atterberg limits.

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-JHMP-05-4

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS	
1. PROJECT: Jacksonville Harbor Mile Point	9. SIZE AND TYPE OF BIT: See Remarks		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLE (U.S. Ft.)	HORIZONTAL: NAD83	VERTICAL: MLLW
2. BORING DESIGNATION: CB-JHMP-05-4	LOCATION COORDINATES: X = 514,358 Y = 2,199,652	11. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAS	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 17 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Danny Hewett		13. TOTAL NUMBER CORE BOXES: 1	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL	BEARING	14. ELEVATION GROUND WATER: N/A
		15. DATE BORING	STARTED: 08-28-06 / COMPLETED: 08-28-06
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -41.5 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 71 %	
8. TOTAL DEPTH OF BORING: 20.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Greg Taylor, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE #	ROD OR CORE UD	REMARKS	BLOWS/0.5 FT.	N-VALUE	
-41.5	0.0						-41.5			0
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace dark minerals, wet, tan (SP)	60	1		SPT Sampler	18 / 29 / 29	58	
-43.0	1.5						-43.0			
			GRAVEL, clayey, mostly fine to coarse gravel-sized limestone up to 1/2", some clay, few fine-grained sand-sized quartz, wet, weak cementation, tan/white (GC)	40	2		SPT Sampler	14 / 7 / 14	21	
-44.0	2.5				3		-44.5			
			SAND, poorly-graded, mostly quartz, trace fines, trace fine-grained sand-sized shell, wet, tan/gray (SP) At El. -45.1 Ft., few fines, few shell up to 1/2"	27	4		SPT Sampler	6 / 9 / 4	13	
							-46.0			
				27	5		SPT Sampler	0 / 2 / 7	9	5
							-47.5			
			At El. -47.5 Ft., trace dark minerals	40	6		SPT Sampler	5 / 21 / 24	45	
							-49.0			
				60	7		SPT Sampler	12 / 25 / 20	45	
-50.5	9.0						-50.5			
			CLAY, lean, low plasticity, soft, few fine-grained sand-sized quartz, moist, green (CL)	87	8		SPT Sampler	4 / 5 / 8	13	10
-52.6	11.1						-52.0			
			SAND, clayey, mostly fine-grained sand-sized quartz, little clay, trace fine-grained sand-sized phosphate, moist, green (SC)	93	9		SPT Sampler	6 / 18 / 22	40	
					10		-53.5			
				100	11		SPT Sampler	12 / 7 / 9	16	
							-55.0			
				100	12		SPT Sampler	4 / 7 / 9	16	
							-56.5			15

SAJ FORM 1836
JUN 02

(Continued)

Boring Designation CB-JHMP-05-4

DRILLING LOG (Cont. Sheet)

INSTALLATION: Jacksonville District

SHEET 2 OF 2 SHEETS

PROJECT: Jacksonville Harbor Mile Point

COORDINATE SYSTEM/DATUM: State Plane, FLE (U.S. Ft.)

HORIZONTAL: NAD83

VERTICAL: MLLW

LOCATION COORDINATES: X = 514,358 Y = 2,199,652

ELEVATION TOP OF BORING: -41.5 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	ROD DROP	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
				100	13		SPT Sampler	5 8 9	17
-58.0									
-58.7	17.2			100	14		SPT Sampler	7 14	64+
			SAND, silty, mostly fine-grained sand-sized quartz, little silt, moist, tan (SM)		15			50/0.3'	
-59.3									
-59.5							Advanced Boring		
				100	16		SPT Sampler	50/0.3'	
-59.8									
-60.0							Advanced Boring		
				87	17		SPT Sampler	17 25 46	71
-61.5	20.0								
			BORING TERMINATED IN REFUSAL				140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.0/1.5	SC*
8	9.0/10.5	SC*
10	11.1/12.0	SP-SC*
15	17.2/17.8	SC*

*Lab visual classification based on gradation curve. No Atterberg limits.

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-JHMP-05-5

DRILLING LOG	DIVISION South Atlantic	INSTALLATION Jacksonville District	SHEET 1 OF 2 SHEETS

1. PROJECT Jacksonville Harbor Mile Point	9. SIZE AND TYPE OF BIT See Remarks
	10. COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.) — HORIZONTAL NAD83 — VERTICAL MLLW
2. BORING DESIGNATION CB-JHMP-05-5 — LOCATION COORDINATES X = 512,408 Y = 2,198,561	11. MANUFACTURER'S DESIGNATION OF DRILL Failing 1500 — ☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY Corps of Engineers - CESAS — CONTRACTOR FILE NO.	12. TOTAL SAMPLES — DISTURBED 6 — UNDISTURBED (UD) 0
4. NAME OF DRILLER Danny Hewett	13. TOTAL NUMBER CORE BOXES 2
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED — DEG. FROM VERTICAL — BEARING	14. ELEVATION GROUND WATER N/A
	15. DATE BORING — STARTED 08-30-06 — COMPLETED 09-13-06
6. THICKNESS OF OVERBURDEN N/A	16. ELEVATION TOP OF BORING -38.2 Ft.
7. DEPTH DRILLED INTO ROCK N/A	17. TOTAL RECOVERY FOR BORING 57 %
8. TOTAL DEPTH OF BORING 15.9 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR Greg Taylor, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-38.2	0.0						-38.2		
			SAND, poorly-graded, mostly fine to medium-grained sand-sized quartz, little shell up to 1", wet, dark brown/black (SP)	80	1		SPT Sampler -39.7	8 / 23 / 14	37
-41.2	3.0			27	2		SPT Sampler -41.2	3 / 1 / 0	1
-42.0	3.8		CLAY, fat, high plasticity, few fine-grained sand-sized quartz, dry, gray (CH)	100	3		SPT Sampler -42.0	8 / 50/0.3'	
-44.0	5.8	Mod. Weathered	LIMESTONE, moderately hard, moderately weathered, pitted, gray	53	BOX 1		4 x 5-1/2" Diamond Set Bit -43.5		
				100			4 x 5-1/2" Diamond Set Bit -44.0		
-45.6	7.4		SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace shell up to 1/4", moist, gray (SP)	53	4		SPT Sampler -45.5	4 / 5 / 10	15
			At El. -45.5 Ft., 6 to 8 pieces of limestone shards up to 1 in.	NR	5		SPT Sampler -45.6		
-52.6	14.4	Moderately Weathered	LIMESTONE, moderately hard, moderately weathered, pitted, gray	100			4 x 5-1/2" Diamond Set Bit -47.6		
				30	BOX 2		4 x 5-1/2" Diamond Set Bit -52.6		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, moist, gray (SP)	67	6		SPT Sampler	79	

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SAJ FORM 1836
JUN 02

(Continued)

Boring Designation CB-JHMP-05-5

DRILLING LOG (Cont. Sheet)	INSTALLATION	SHEET 2 OF 2 SHEETS
	Jacksonville District	

PROJECT	COORDINATE SYSTEM/DATUM	HORIZONTAL	VERTICAL
Jacksonville Harbor Mile Point	State Plane, FLE (U.S. Ft.)	NAD83	MLLW

LOCATION COORDINATES	ELEVATION TOP OF BORING
X = 512,408 Y = 2,198,561	-38.2 Ft.

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE NO.	ROD OR CORE UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-54.1	15.9			67	6		-54.1 SPT Sampler	90 / 44	134

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Below El. -45.6 ft., new location 51 ft. WNW of original location at coordinates X = 512408, Y=2198502. Sample 5 on the original hole penetrated to El. -46.7, however blow counts were not recorded.

4. Geologist also Tracey Tapley.

5. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.0/1.5	SP-SC*
3	3.0/3.8	SC*
4	5.8/7.3	SP*

*Lab visual classification based on gradation curve. No Atterberg limits.

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

Abbreviations:
NR = Not Recorded.

15 20 25 30 35

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JUN 02

Boring Designation CB-JHMP-05-6

DRILLING LOG	DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS
1. PROJECT: Jacksonville Harbor Mile Point		9. SIZE AND TYPE OF BIT: See Remarks	
		10. COORDINATE SYSTEM/DATUM: State Plane, FLE (U.S. Ft.)	HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: CB-JHMP-05-6	LOCATION COORDINATES: X = 511,898 Y = 2,197,452	11. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAS	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 8 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Danny Hewett		13. TOTAL NUMBER CORE BOXES: 1	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER: N/A	
		15. DATE BORING	STARTED: 08-31-06 / COMPLETED: 08-31-06
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -19.0 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 35 %	
8. TOTAL DEPTH OF BORING: 12.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Greg Taylor, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	ROD OR CORE	REMARKS	BLOWS/0.5 FT.	N-VALUE
-19.0	0.0						-19.0		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace dark minerals, wet, gray (SP)	33	1		SPT Sampler	3 8 13	21
							-20.5		
				20	2		SPT Sampler	22 19 9	28
							-22.0		
				67	3		SPT Sampler	25 25 26	51
							-23.5		
				47	4		SPT Sampler	9 9 4	13
							-25.0		
				33	5		SPT Sampler	3 0 7	7
							-26.5		
				27	6		SPT Sampler	5 7 6	13
							-28.0		
				27	7		SPT Sampler	13 9 14	23
							-29.5		
				27	8		SPT Sampler	7 8 8	16
-31.0	12.0						-31.0		
			NOTES: 1. USACE Jacksonville is the custodian for these original files. 2. Soils are field visually classified in accordance with the Unified Soils Classification System.				140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).		

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SAJ FORM 1836
JUN 02

(Continued)

Boring Designation CB-JHMP-05-6

DRILLING LOG (Cont. Sheet)	INSTALLATION Jacksonville District	SHEET 2 OF 2 SHEETS
PROJECT Jacksonville Harbor Mile Point	COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL MLLW
LOCATION COORDINATES X = 511,898 Y = 2,197,452	ELEVATION TOP OF BORING -19.0 Ft.	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	ROD OR UD	REMARKS	BLOWS/ 0.3 FT.	N-VALUE
			3. Laboratory Testing Results						

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
3	3.0/4.5	SP-SC*

*Lab visual classification based on gradation curve. No Atterberg limits.

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SAJ FORM 1836-A
JUN 02

Boring Designation CB-JHMP-05-7

DRILLING LOG

DIVISION	South Atlantic
INSTALLATION	Jacksonville District
SHEET	1 OF 2 SHEETS
1. PROJECT	Jacksonville Harbor Mile Point
2. BORING DESIGNATION	CB-JHMP-05-7
LOCATION COORDINATES	X = 513,339 Y = 2,197,002
3. DRILLING AGENCY	Corps of Engineers - CESAS
CONTRACTOR FILE NO.	
4. NAME OF DRILLER	Danny Hewett
5. DIRECTION OF BORING	☒ VERTICAL ☐ INCLINED
DEG. FROM VERTICAL	
BEARING	
6. THICKNESS OF OVERBURDEN	N/A
7. DEPTH DRILLED INTO ROCK	N/A
8. TOTAL DEPTH OF BORING	21.0 Ft.
9. SIZE AND TYPE OF BIT	See Remarks
10. COORDINATE SYSTEM/DATUM	State Plane, FLE (U.S. Ft.) / HORIZONTAL NAD83 / VERTICAL MLLW
11. MANUFACTURER'S DESIGNATION OF DRILL	Failing 1500 ☐ AUTO HAMMER ☒ MANUAL HAMMER
12. TOTAL SAMPLES	DISTURBED 14 / UNDISTURBED (UD) 0
13. TOTAL NUMBER CORE BOXES	2
14. ELEVATION GROUND WATER	N/A
15. DATE BORING	STARTED 09-01-06 / COMPLETED 09-01-06
16. ELEVATION TOP OF BORING	-9.5 Ft.
17. TOTAL RECOVERY FOR BORING	40 %
18. SIGNATURE AND TITLE OF INSPECTOR	Greg Taylor, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE #	ROD CORE UD	REMARKS	BLOWS/0.5 FT.	N-VALUE
-9.5	0.0						-9.5		
			SAND, poorly-graded, mostly fine-grained sand-sized quartz, trace dark minerals, wet, green/gray (SP)	40	1		SPT Sampler	8 8 7	15
							-11.0		
				60	2		SPT Sampler	20 42 40	82
							-12.5		
				41	3		SPT Sampler	13 13 9	22
							-14.0		
				33	4		SPT Sampler	9 9 11	20
							-15.5		
				41	5		SPT Sampler	7 7 12	19
							-17.0		
				33	6		SPT Sampler	8 7 12	19
							-18.5		
				41	7		SPT Sampler	8 15 16	31
							-20.0		
				33	8		SPT Sampler	18 16 14	30
							-21.5		
				48	9		SPT Sampler	17 17 16	33
							-23.0		
				33	10		SPT Sampler	15 16 14	30
							-24.5		

0 5 10 15

SAJ FORM 1836
JUN 02

(Continued)

Boring Designation CB-JHMP-05-7

DRILLING LOG (Cont. Sheet)	INSTALLATION Jacksonville District	SHEET 2 OF 2 SHEETS
PROJECT Jacksonville Harbor Mile Point	COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.)	HORIZONTAL NAD83 / VERTICAL MLLW
LOCATION COORDINATES X = 513,339 Y = 2,197,002	ELEVATION TOP OF BORING -9.5 Ft.	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	ROD CORED	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
				47	11		SPT Sampler	18 17 14	31
							-26.0		
				27	12		SPT Sampler	19 14 12	26
							-27.5		
				41	13		SPT Sampler	15 16 14	30
							-29.0		
				34	14		SPT Sampler	11 15 20	35
-30.5	21.0						-30.5		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.0/1.5	SP*
8	10.5/12.0	SP-SC*

*Lab visual classification based on gradation curve. No Atterberg limits.

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

SAJ FORM 1836-A
JUN 02

Boring Designation CB-JHMP-05-8

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District	SHEET 1 OF 2 SHEETS	
1. PROJECT: Jacksonville Harbor Mile Point	9. SIZE AND TYPE OF BIT: See Remarks		
	10. COORDINATE SYSTEM/DATUM: State Plane, FLE (U.S. Ft.)	HORIZONTAL: NAD83	VERTICAL: MLLW
2. BORING DESIGNATION: CB-JHMP-05-8	LOCATION COORDINATES: X = 517,056 Y = 2,198,878	11. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500	☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAS	CONTRACTOR FILE NO.	12. TOTAL SAMPLES	DISTURBED: 2 / UNDISTURBED (UD): 0
4. NAME OF DRILLER: Danny Hewett		13. TOTAL NUMBER CORE BOXES: 1	
5. DIRECTION OF BORING: ☒ VERTICAL ☐ INCLINED	DEG. FROM VERTICAL	BEARING	14. ELEVATION GROUND WATER: N/A
		15. DATE BORING	STARTED: 09-01-06 / COMPLETED: 09-01-06
6. THICKNESS OF OVERBURDEN: N/A		16. ELEVATION TOP OF BORING: -22.5 Ft.	
7. DEPTH DRILLED INTO ROCK: N/A		17. TOTAL RECOVERY FOR BORING: 19 %	
8. TOTAL DEPTH OF BORING: 10.0 Ft.		18. SIGNATURE AND TITLE OF INSPECTOR: Greg Taylor, Geologist	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE #	RQD OR COR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-22.5	0.0						-22.5		
			SILT, inorganic-H, high plasticity, very soft, few shell up to 1/2", wet, gray (MH)						
				15	1		Free Fall of Sampler		
			At El. -28.0 Ft., little fine-grained sand-sized quartz						
-31.0	8.5						-31.0		
			SAND, clayey, mostly fine-grained sand-sized quartz, little clay, few shell up to 1/2", moist, gray/green (SC)	42	2		SPT Sampler	3 3 7	10
-32.5	10.0						-32.5		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.0/8.5	SP-SM*

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

0 5 10 15

(Continued)

SAJ FORM 1836
JUN 02

Boring Designation CB-JHMP-05-8

DRILLING LOG (Cont. Sheet)	INSTALLATION Jacksonville District	SHEET 2 OF 2 SHEETS
PROJECT Jacksonville Harbor Mile Point	COORDINATE SYSTEM/DATUM State Plane, FLE (U.S. Ft.) / HORIZONTAL NAD83 / VERTICAL MLLW	
LOCATION COORDINATES X = 517,056 Y = 2,198,878	ELEVATION TOP OF BORING -22.5 Ft.	

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE	RQD OR CORED	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
			2 8.5/10.0 SP-SM*						
			*Lab visual classification based on gradation curve. No Atterberg limits.						

15 20 25 30 35

SAJ FORM 1836-A
JUN 02

Boring Designation CB-JHMP-05-9

DRILLING LOG

DIVISION: South Atlantic	INSTALLATION: Jacksonville District
SHEET 1 OF 1 SHEETS	
1. PROJECT: Jacksonville Harbor Mile Point	9. SIZE AND TYPE OF BIT: See Remarks
	10. COORDINATE SYSTEM/DATUM: State Plane, FLE (U.S. Ft.) / HORIZONTAL: NAD83 / VERTICAL: MLLW
2. BORING DESIGNATION: CB-JHMP-05-9 / LOCATION COORDINATES: X = 515,753 Y = 2,193,548	11. MANUFACTURER'S DESIGNATION OF DRILL: Failing 1500 ☐ AUTO HAMMER ☒ MANUAL HAMMER
3. DRILLING AGENCY: Corps of Engineers - CESAS / CONTRACTOR FILE NO.	12. TOTAL SAMPLES: DISTURBED 3 / UNDISTURBED (UD) 0
4. NAME OF DRILLER: Danny Hewett	13. TOTAL NUMBER CORE BOXES: 1
5. DIRECTION OF BORING ☒ VERTICAL ☐ INCLINED / DEG. FROM VERTICAL / BEARING	14. ELEVATION GROUND WATER: N/A
	15. DATE BORING: STARTED 09-01-06 / COMPLETED 09-01-06
6. THICKNESS OF OVERBURDEN: N/A	16. ELEVATION TOP OF BORING: -25.0 Ft.
7. DEPTH DRILLED INTO ROCK: N/A	17. TOTAL RECOVERY FOR BORING: 45 %
8. TOTAL DEPTH OF BORING: 8.1 Ft.	18. SIGNATURE AND TITLE OF INSPECTOR: Greg Taylor, Geologist

ELEV.	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% REC.	BOX OR SAMPLE #	ROD OR UD	REMARKS	BLOWS/ 0.5 FT.	N-VALUE
-25.0	0.0						-25.0		
			SILT, inorganic-H, high plasticity, very soft, wet, gray (MH)	58	1		Free Fall of Sampler		
							-27.6		
				40	2		Free Fall of Sampler		
-32.6	7.6						-32.6		
-33.1	8.1		SAND, silty, mostly fine-grained sand-sized sand, little silt, moist, gray (SM)	33	3		-33.1 SPT Sampler 3		

NOTES:

1. USACE Jacksonville is the custodian for these original files.

2. Soils are field visually classified in accordance with the Unified Soils Classification System.

3. Laboratory Testing Results

SAMPLE ID	SAMPLE DEPTH	LABORATORY CLASSIFICATION
1	0.0/2.6	CH*

*Lab visual classification based on gradation curve. No Atterberg limits.

140# hammer w/30" drop used with 2.0' split spoon (1-3/8" I.D. x 2" O.D.).

Abbreviations:
WOR = Weight of Rods.

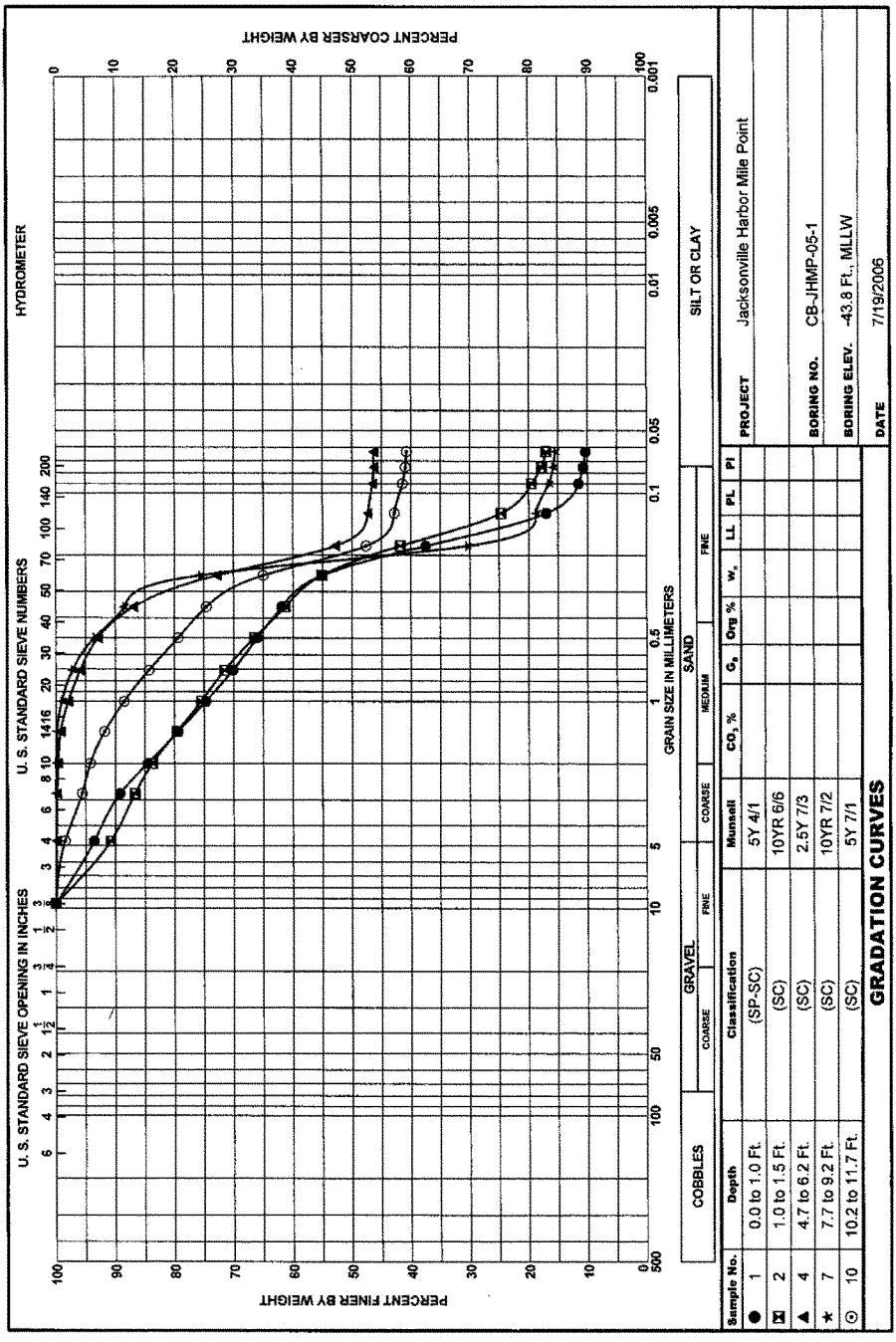
0 5 10 15

SAJ FORM 1836
JUN 02

GEOTECHNICAL ATTACHMENT

Analytical Data from 2005

ATTACHMENT B



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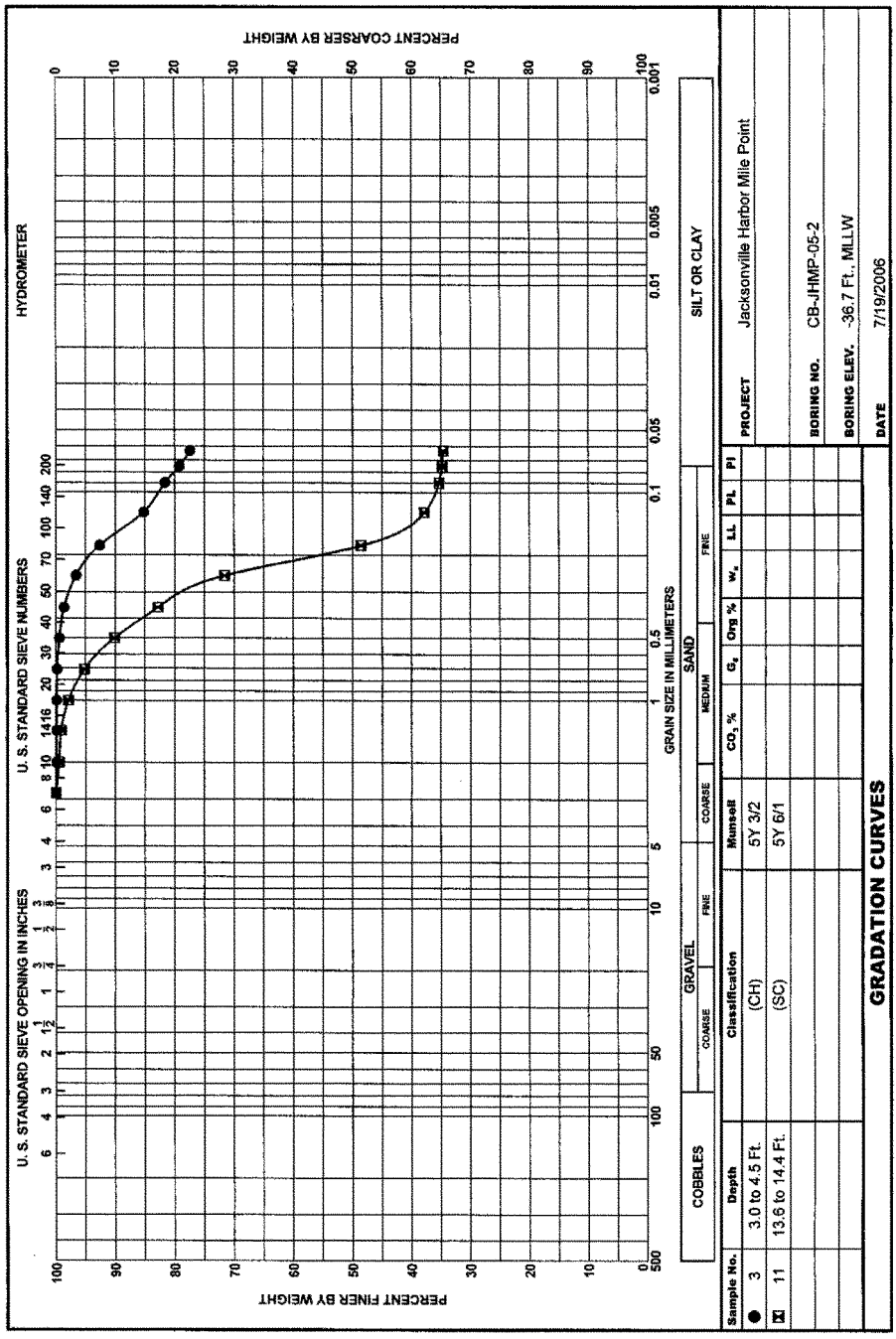

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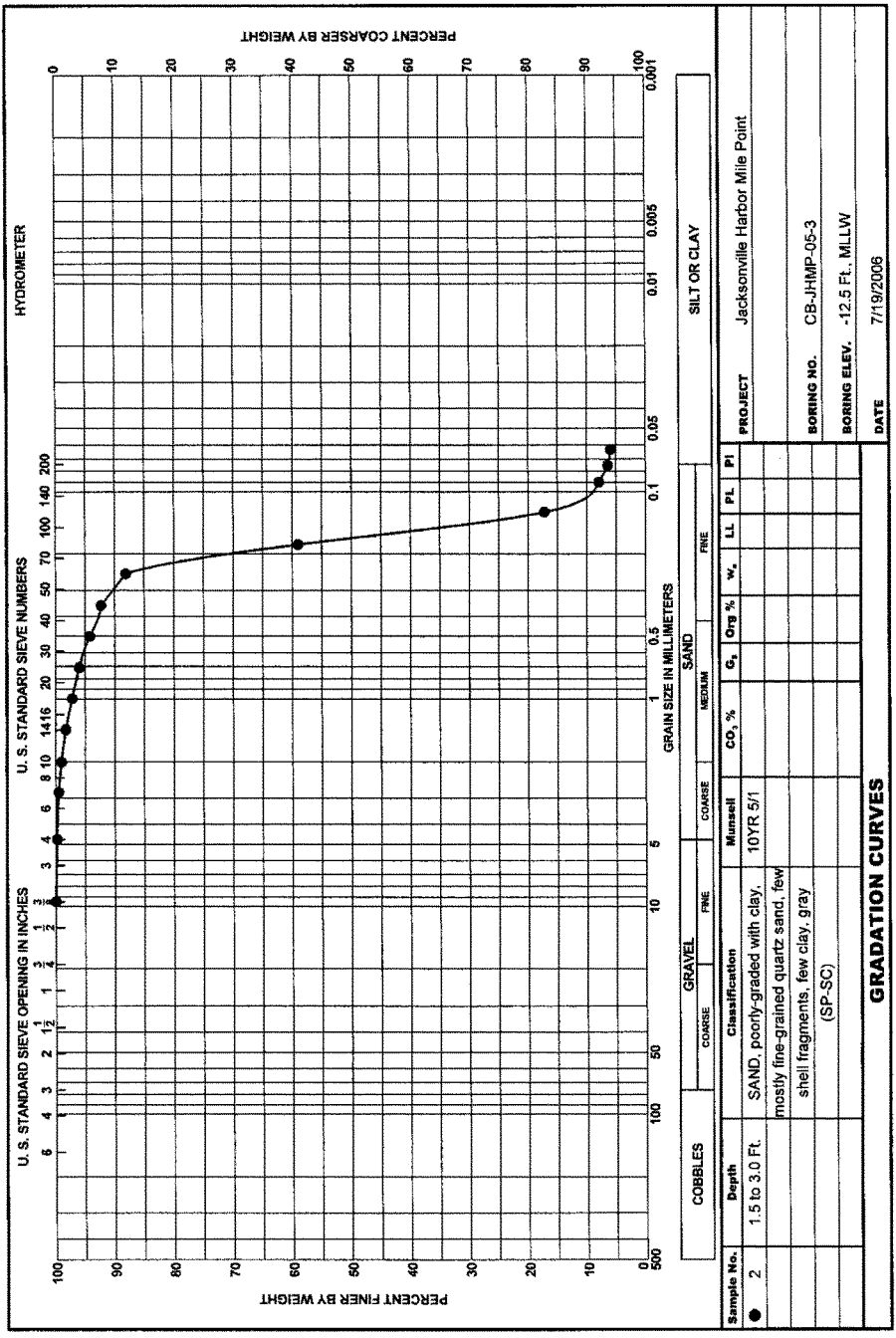

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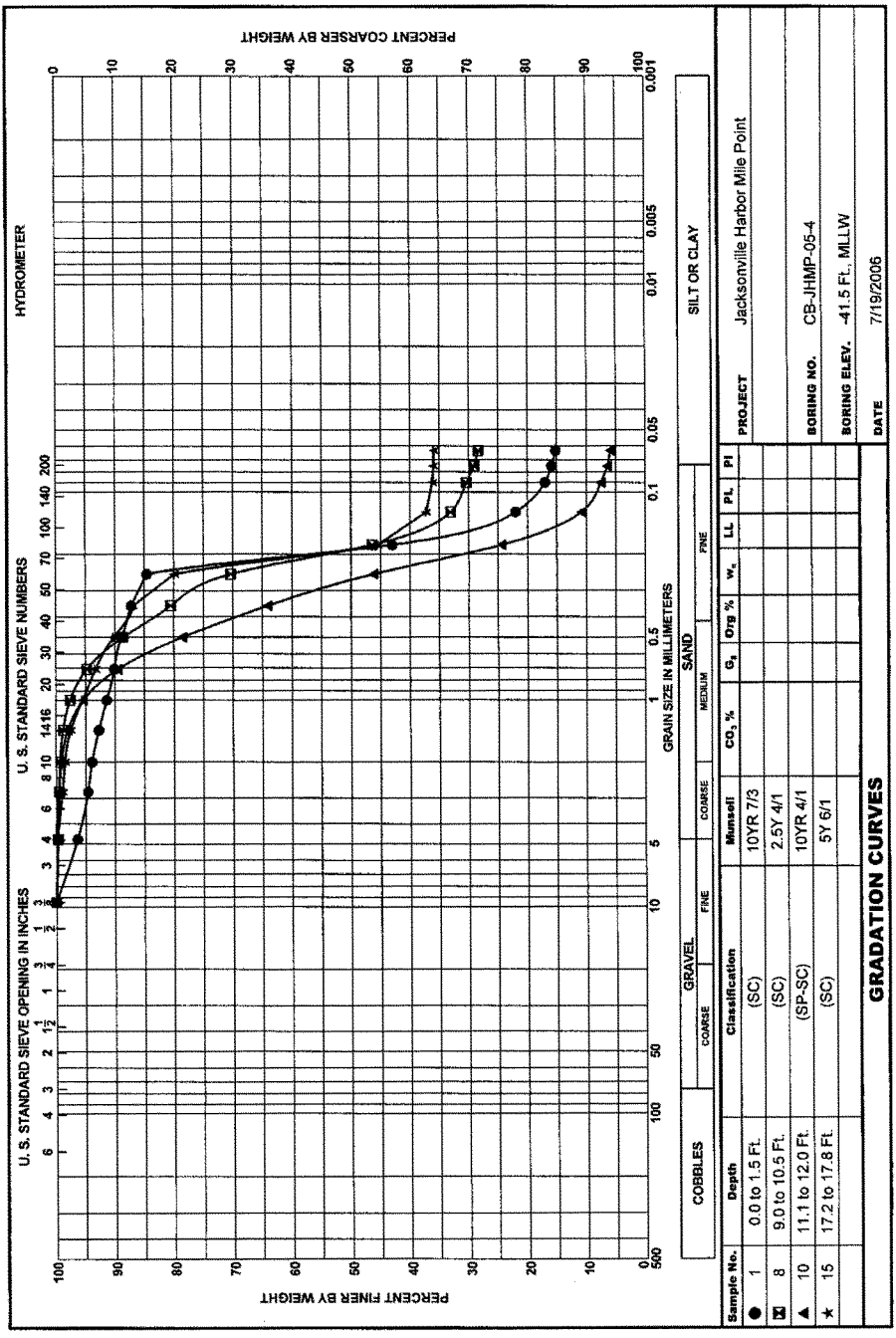


Sample No.	Depth	Classification	Munsell	CO_3 %	G_s	Org %	w_n	LL	PL	PI
● 1	0.0 to 1.5 Ft.	(SC)	10YR 7/3							
⊠ 8	9.0 to 10.5 Ft.	(SC)	2.5Y 4/1							
▲ 10	11.1 to 12.0 Ft.	(SP-SC)	10YR 4/1							
★ 15	17.2 to 17.8 Ft.	(SC)	5Y 6/1							

GRADATION CURVES

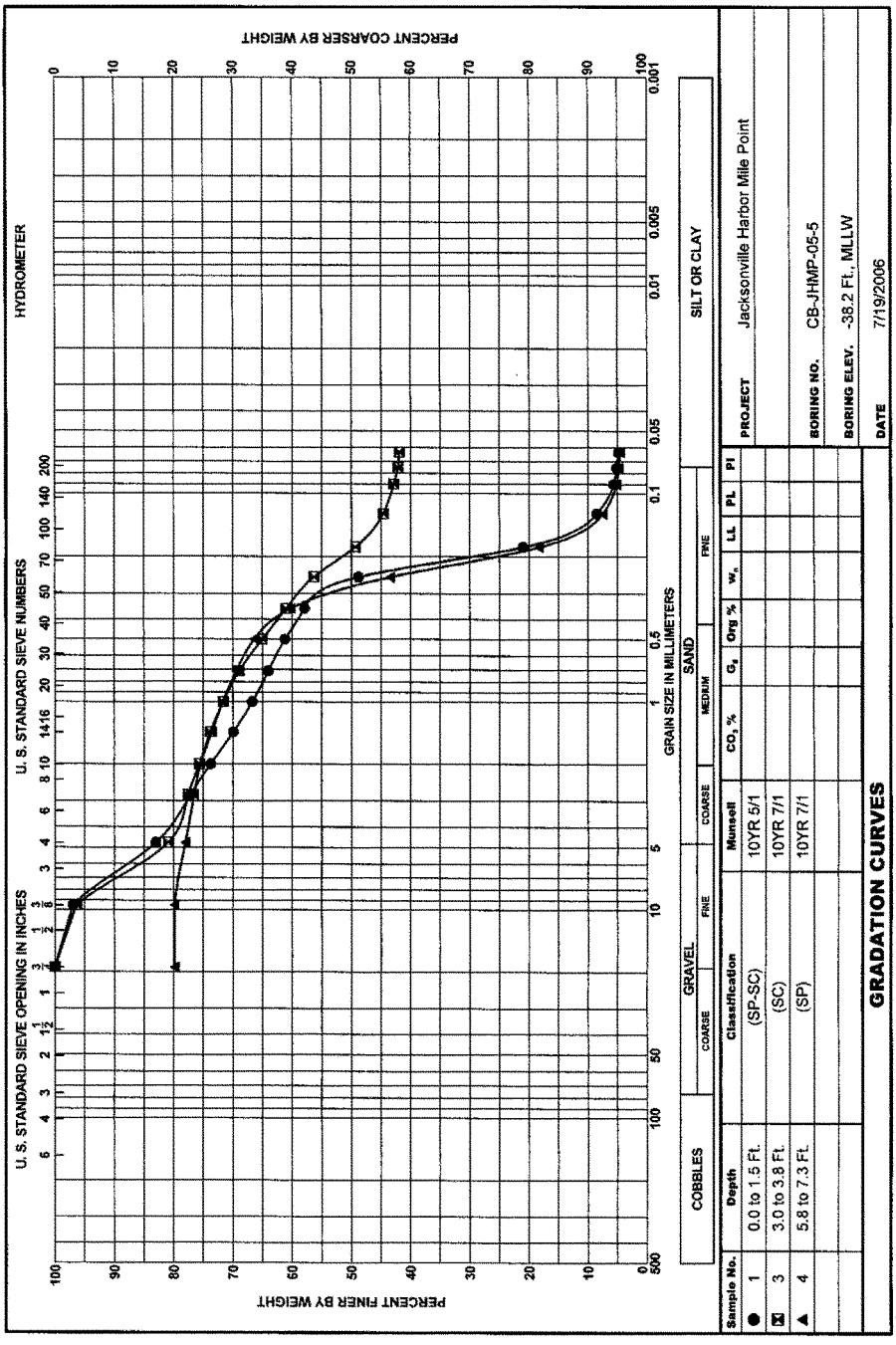
PROJECT Jacksonville Harbor Mile Point

BORING NO. CB-JHMP-05-4

BORING ELEV. -41.5 Ft. MLLW

DATE 7/19/2006

SAJ FORM 2087
JUN 02



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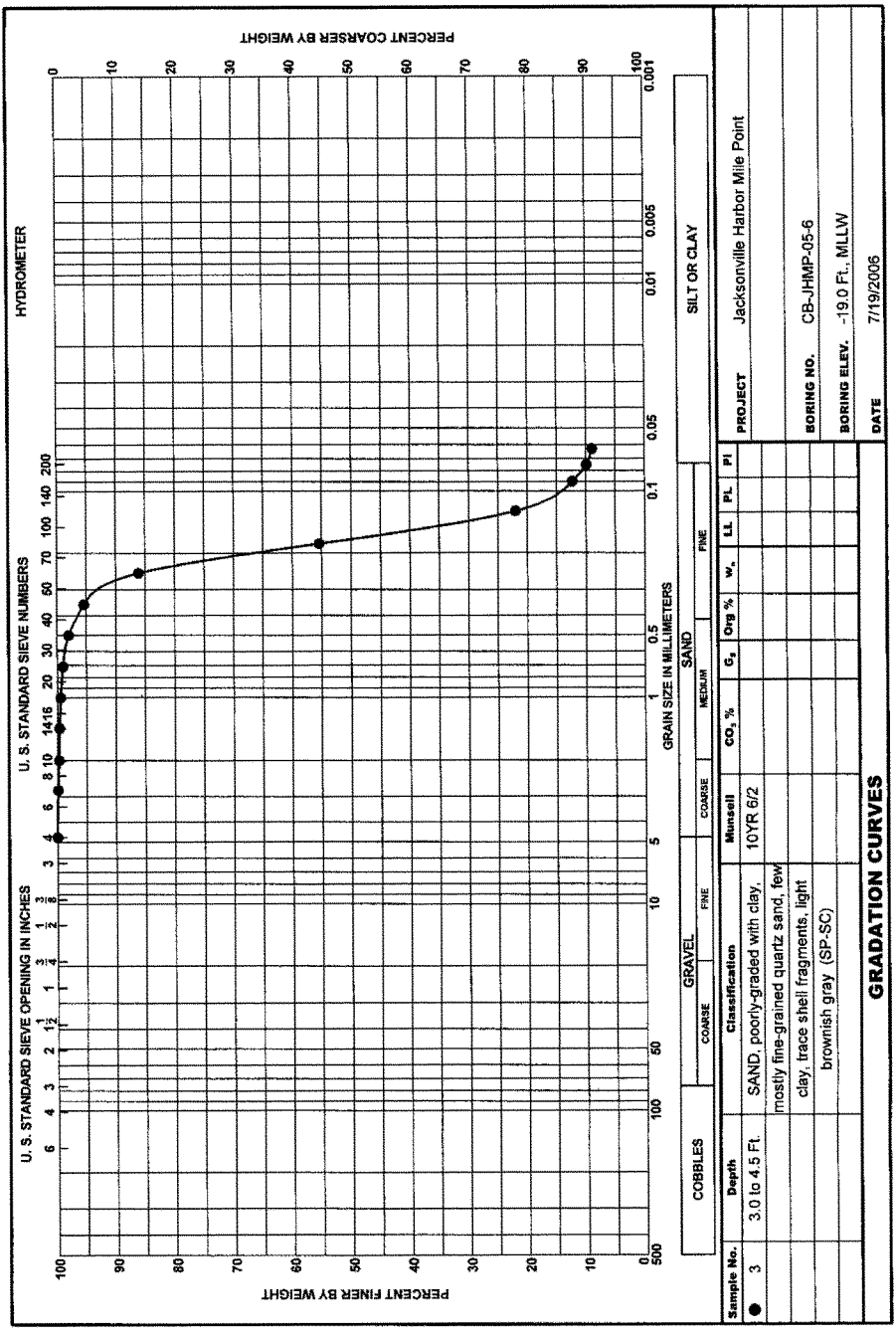

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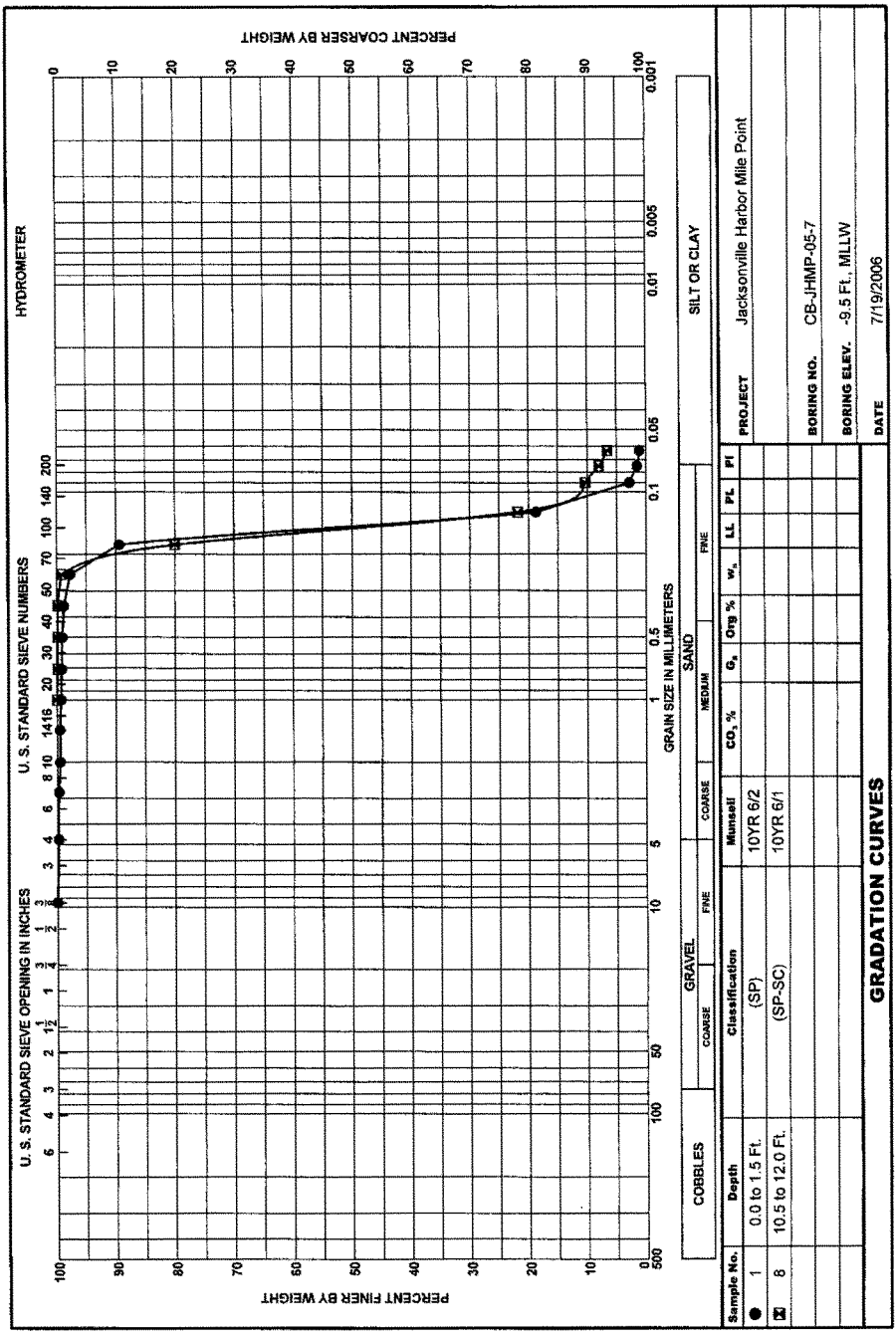

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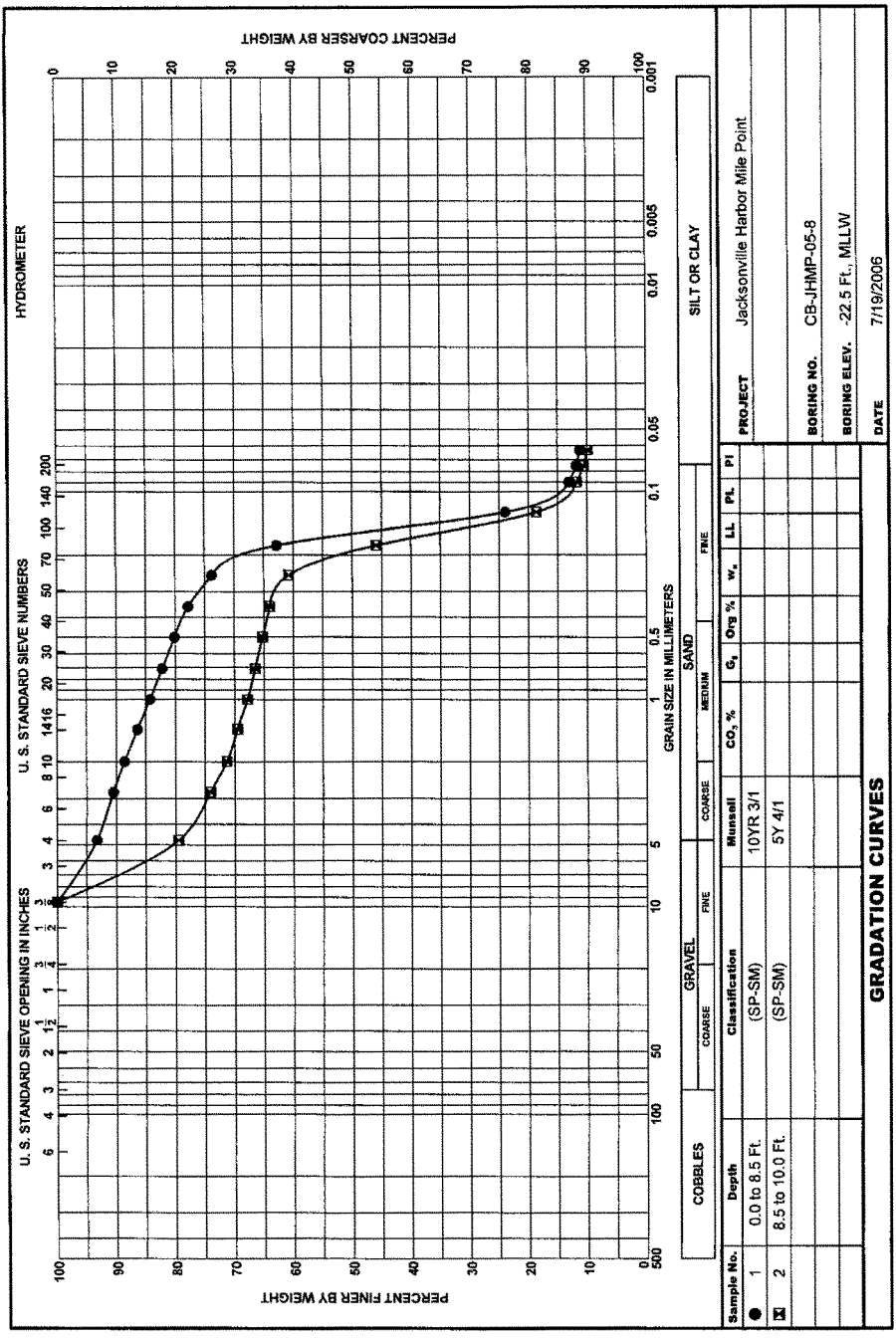

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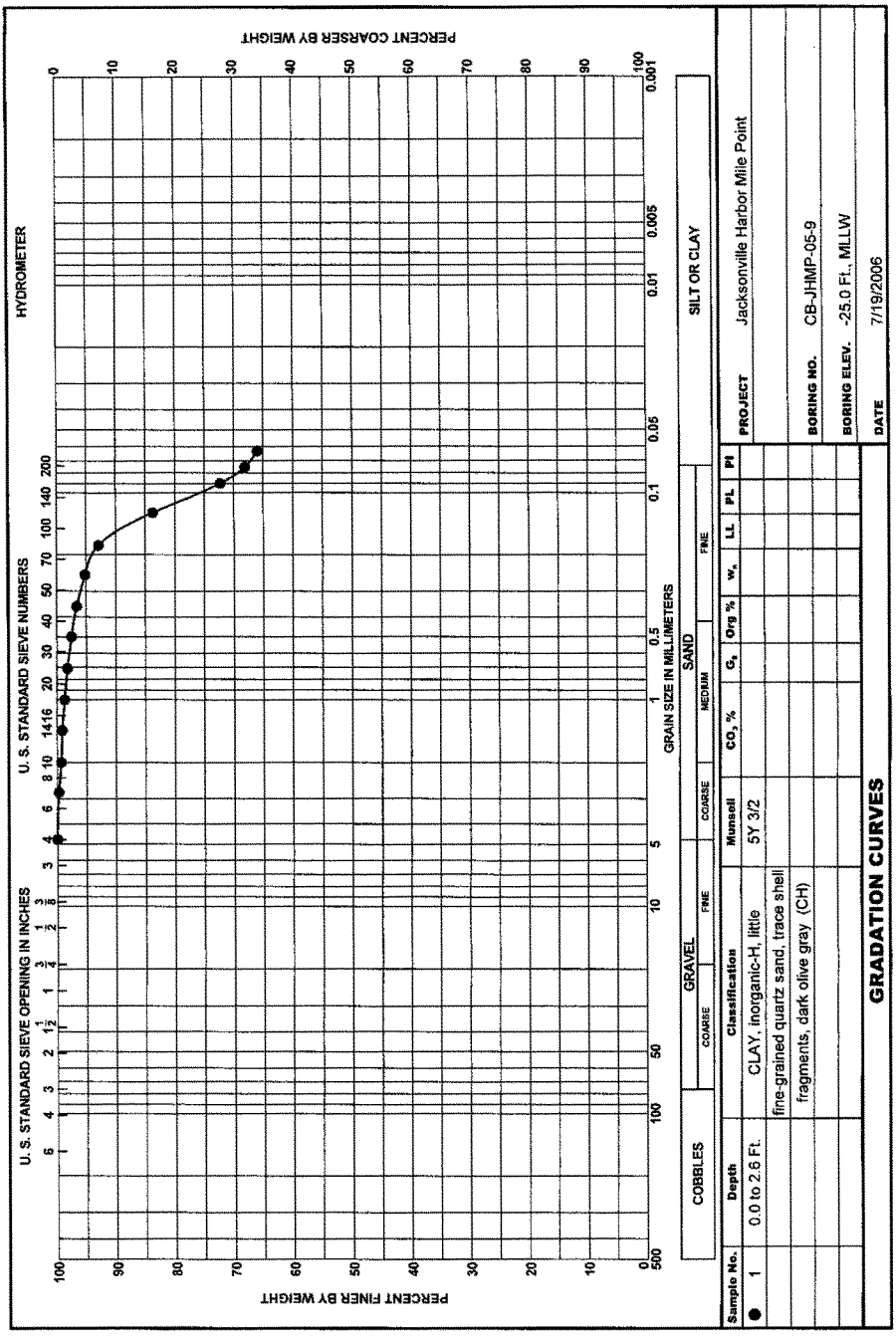


SAJ FORM 2087
JUN 02

SHIP SIMULATION REPORT

ATTACHMENT C

NAVIGATION STUDY FOR MILE POINT CHANNEL IMPROVEMENTS

INTRODUCTION

Jacksonville, FL is located on the northeast corner of the state (Figure 1). The ships calling at the port of Jacksonville (JAXPORT) must transit St. Johns River, which links Jacksonville to the Atlantic Ocean. Presently, the St. Johns Bar Pilots Association restricts the movement of larger vessels during ebb tide due to strong crosscurrents at a section of St. Johns River known as Mile Point (Figure 2). Mile Point Lower Range and Turn and Training Wall Reach are crossed by the Atlantic IntraCoastal Waterway (IWW). The crosscurrents occur from Pablo Creek on the south and Sisters Creek on the north.

The US Army Corps of Engineers District, Jacksonville (SAJ) proposes to increase the cross-sectional area for flow into and out of Pablo Creek. The increase in cross-sectional area is designed to reduce the current magnitude and ease the angle at which the current enters the St. Johns River. This proposal is shown in Figure 3. SAJ also proposed widening Training Wall Reach by 100 ft on the southwest side to allow two-way traffic (Figure 4).

The U. S. Army Engineer Research and Development Center (ERDC) conducted a navigation study utilizing real-time ship simulation modeling to evaluate the proposed improvements to Mile Point. Model development and online testing occurred at the ERDC Waterways Experiment Station (WES) in Vicksburg, MS during the period from May 2005 to September 2006.

RECONAISSANCE TRIP

The Reconnaissance trip for the Mile Point study was conducted May 2 - 5, 2005. The purpose of the trip was to meet with representatives of SAJ and the St. Johns Bar Pilots Association. These meetings took place in the SAJ office and upon ships transiting the study area so navigation practices could be observed. In addition, ERDC representatives took photographs, which were later used for simulation model development. ERDC was represented by Dennis Webb and Don Wilson. Mr. Phil Sylvester and James McRae represented SAJ onboard some of the transits. Capt. Joe Heath of St. Johns Bar Pilots Association coordinated the vessel rides.

May 3. Mr. Webb and Mr. Wilson boarded the *Horizon Discovery* at Blount Island Berth 34 at approximately 1700 on May 3. The *Horizon Discovery* is a 700-ft length-over-all (LOA) containership. The *Horizon Discovery* has a beam of 90 ft and was loaded to a draft of approximately 30 ft. The ship got underway at approximately 1915. The pilot was Capt. Joe Heath. The transit began near the end of flood tide. The tide was ebbing

by the time ship reached Mile Point. Figure 5 shows a view from the starboard wing of the *Horizon Discovery* on Training Wall Reach, approaching Mile Point Lower Range and Turn. Significant crosscurrents and eddies were clearly visible where Pablo Creek flowed into the St. Johns River. The ERDC team departed the ship between the jetties along with Capt. Heath at approximately 2015.

May 4. Mr. Webb and Mr. James McRae (CESAJ) boarded the *MSC Parana* at the sea buoy with the pilot at approximately 0800 on May 4, 2005. The pilot was Capt. Heath. The *MSC Parana* is 661-ft long (LOA) containership. The *MSC Parana's* beam is 93 ft and she was loaded to a draft of approximately 25 ft. The transit began during slack tide, which turned to ebb during the transit. The inbound *MSC Parana* met the outbound *Nicos Tomasas* in Training Wall Reach, just west of Mile Point Lower Range and Turn. The view from the *MSC Parana's* port wing while approaching the *Nicos Tomasas* is shown in Figure 6. The *MSC Parana* arrived at the Talleyrand Terminals, Berths 7 and 8 at approximately 1015.

Mr. Webb and Mr. Phil Sylvester (CESAJ) boarded the *Gypsum Centennial* at approximately 1600, on May 4, 2005, at the U. S. Gypsum dock. The pilot was Capt. James Winegeart. The *Gypsum Centennial* is a 646 ft LOA product carrier, with a beam of 93 ft. The *Gypsum Centennial* was empty, drafting approximately 18 ft. The vessel left the U. S. Gypsum dock at approximately 1620, during the last portion of ebb tide. The tide changed to flood during the transit. The team departed the ship at approximately 1800, with the pilot, at the sea buoy.

DATABASE DEVELOPMENT

Currents for both the existing and proposed channels were calculated by SAJ. Initially, a two-dimensional model was used. However, that model was converted to three-dimensional later in the study. Current data for the maximum strength of both the ebb and flood tides in St. Johns River and the maximum strength of ebb tide at Pablo Creek were extracted and converted into the format required by the ERDC Ship/Tow Simulator.

Two ship models were used for the Mile Point Navigation Study. The *Sibohelle* is a 797- x 106- x 38-ft tanker. The *Susan Maersk* is a 1140- x 140- x 47.5 ft containership. The Mile Point portion of St. Johns River is presently 40 ft deep, mean low water (MLW). The depth portion of the simulator database was overridden to a depth of 52 ft MLW to allow the *Susan Maersk* to transit. This is done to simulate a worst case scenario. Two two-way runs were also simulated. For those scenarios, the Sibohelle met the *SL Pride*. The *SL Pride* is a 865- x 106- 30-ft containership.

The visual scene was modified as per some of the photos taken during the reconnaissance trip. Figure 7 shows visual scene as one of the St. Johns River Pilots operates the simulator

The ERDC Ship/Tow Simulator provides an Electronic Chart Display and Information System (ECDIS) for the pilots (Figure 7). The ECDIS was modified to reflect proposed improvements.

VALIDATION

Validation for Mile Point was conducted September 27 – 30, 2005. Validation is a checkout of the existing condition simulation databases. An existing condition model must be successfully validated before it can be modified to reflect proposed conditions. Two St. Johns River pilots participated in validation. The visual scene, bank effects, ship models, radar and ECDIS were all successfully validated. However, the current database was not successfully validated. The initial model verification resulted in the conclusion that the simulated water current vector fields provided by the District did not accurately reflect conditions in the river near Mile Point and those simulated vector fields would not be adequate for conducting a testing program of project alternatives. Therefore, the remainder of validation time was used to develop a flow field based on pilot input. That flow field was furnished to SAJ to assist them in evaluating the current model results. That flow field is considered proprietary and is not included with this report.

The District developed revised water current vector fields from additional model studies. The revised currents were reviewed by the pilots in Jacksonville and determined to be suitable for validation on the simulator. The May 2006 simulation testing runs were preceded by a successful validation of the revised water current vector fields.

RESULTS

Testing with ship pilots was conducted May 15 – 18, July 11-13 and July 17 – , 2006. Two pilots participated in the May session. One pilot attended each of the July sessions. Simulation of towboat traffic was conducted Sept 18 – 20, 2006. At the end of each week of testing, the pilots were given a final questionnaire to complete. These questionnaires are included in Appendix A.

Results are presented in the form of composite track plots.

Inbound, Maximum Ebb from Pablo Creek.

Results of inbound simulations with the maximum ebb tide coming out of Pablo Creek are shown in Plates 1 – 3. Plate 1 shows the *Susan Maersk* transiting the reach in the existing channel. Although only one of the four ships left the channel, the pilots did not feel this was a safe condition or one they would try in real life. Plate 2 shows the same condition, but with the Alternative 1 conditions, i.e. the mouth of Pablo Creek widened. With the exception of one ship which went slightly out of the channel across from buoy R-24, the ships were tightly grouped through Mile Point Lower Range and Turn and Training Wall Reach. Plate 3 contains the track plots for the *Sibohelle* transiting the Alternative Channel. Five runs were completed under this condition because one pilot wanted to try it a second time. All runs were successful.

Outbound, Maximum Ebb from Pablo Creek.

Results of outbound simulations with the maximum ebb tide coming out of Pablo Creek are shown in Plates 4 – 6. Plate 2 shows the *Susan Maersk* transiting the reach in the existing channel. Although both runs were successful, the pilots did not feel this was a safe condition. Plate 5 shows the same condition, but with the Alternative 1 conditions. All three runs were successful. Plate 6 contains the track plots for the *Sibohelle* transiting the Alternative Channel. One ship lift the south side of the channel across from buoy R-22, but that was because the pilot started his turn late. Five runs were completed under this condition because one pilot wanted to try it a second time.

Inbound, Maximum Ebb in St. Johns River.

Results of inbound simulations with the maximum ebb tide in St. Johns River are shown in Plates 7 – 9. Plate 7 shows the *Susan Maersk* transiting the reach in the existing channel. Although only one ship left the channel at the southern end of Training Wall Reach, the pilots reported it was a difficult situation. Plate 8 shows the same condition, but with the Alternative 1 conditions. All runs were successful. Plate 9 contains the track plots for the *Sibohelle* transiting the Alternative Channel. All runs were successful. Six runs were completed under this condition because one pilot wanted to try it three times.

Outbound, Maximum Ebb in St. Johns River.

Results of outbound simulations with the maximum ebb tide in St. Johns River are shown in Plates 10 – 12. Plate 10 shows the *Susan Maersk* transiting the reach in the existing channel. Two of the ships left the channel by more than 100 ft on the south side of Mile Point Lower Rand and Turn. Plate 11 shows the same condition, but with the Alternative 1 conditions. One vessel went slightly outside of the channel near the north end of Training Wall Reach but the pilot did not feel it was significant. Plate 12 contains the track plots for the *Sibohelle* transiting the Alternative Channel. One vessel left the channel by about 50 ft while making the turn at Mile Point Lower Range and Turn.

Inbound, Maximum Flood in St. Johns River.

Results of inbound simulations with the maximum ebb tide in St. Johns River are shown in Plates 13 – 15. Plate 13 shows the *Susan Maersk* transiting the reach in the existing channel. The ships were obviously being swept by the flood tide as they passed through Mile Point Lower Range and Turn and the southern end of Training Wall Reach. Two of the ships were nearly 200 ft out of the channel. Plate 14 shows the same condition, but with the Alternative 1 conditions. These ships were swept by the flood tide also and left the channel at the same places as in the existing condition run. However, they did not go out of the channel as far. Plate 15 contains the track plots for the *Sibohelle* transiting the Alternative Channel. The ships tended to go out of the channel in the same location as the *Susan Maersk* runs.

Outbound, Maximum Flood in St. Johns River.

Results of outbound simulations with the maximum flood tide in St. Johns River are shown in Plates 16 – 18. Plate 16 shows the *Susan Maersk* transiting the reach in the existing channel. One ship's stern swung out of the channel at the southern end of Training Wall Reach. All ships left the channel near buoy R-22. Plate 17 shows the same condition, but with the Alternative 1 conditions. The ship slightly left the channel near buoy R-22.

These ships were swept by the flood tide also and left the channel at the same places as in the existing condition run. However, they did not go out of the channel as far. Plate 18 contains the track plots for the *Sibohelle* transiting the Alternative Channel. The ships tended to go out of the channel in the same location as the *Susan Maersk* runs. One ship's stern swung out of the channel at the southern end of Training Wall Reach. One ship slightly left the channel near buoy R-22.

Two-way traffic scenarios.

Two two-way traffic scenarios were simulated to test the 100 ft widening. Results for the outbound *SL Pride* and inbound Sibohelle in maximum ebb tide are shown on Plate 19. The inbound ship remained near the center of the channel. Vessel interaction pushed the outbound ship's bow out of the channel. The second run of the same scenario is shown in Plate 20. The outbound Sibohelle left the channel while making room for inbound tanker.

Two-barge tow simulations.

Simulation of a two-barge tow was conducted for IWW traffic. Simulations were conducted for maximum ebb tide, maximum ebb from Pablo Creek, and maximum flood tide. Simulations were conducted for both northbound and southbound tows. This was done to assure that the improvements for deep-draft traffic would not adversely affect tow traffic. Two towboat captains participated in the study, each making three runs for each condition.

Results are shown in Plates 21 – 26. All runs were successful. The towboat captains felt that opening up Pablo Creek made the run easier.

Final Questionnaire

At the end of their simulator testing session, the pilots completed a final questionnaire. The final questionnaires are included as Appendix A. Three of the four ship pilots felt that Alternative 1 would reduce or eliminate tidal delays. One pilot felt that delays might be reduced after trying the proposal in real life. The two pilots that tried the widened

Training Wall Reach (Alternative 2) did not feel it would provide more two-way traffic than they already have. The towboat captains felt the plan improved navigation. One pilot recommended removing some of the buoys.

CONCLUSIONS

Based upon the simulator results and the pilot's final questionnaires, the following conclusions are made for the Mile Point improvements.

1. Alternative 1 improved navigation for the maximum ebb, maximum ebb from Pablo Creek, and maximum flood.
2. Three of the four ship pilots felt that tidal restriction would be lifted or greatly reduced.
3. The pilots felt that widening Training Wall Reach would not improve two-way traffic beyond what they are already doing.
4. Alternative improved navigation for tow traffic on the IWW.

RECOMMENDATIONS

1. Based upon the simulation results and pilot comments, we recommend that Alternative 1 be constructed to reduce or eliminate tidal restrictions.
2. If Alternative 1 is too costly to construct, we recommend that examining alternatives that widen the mouth of Pablo's Creek by less amounts, thus making them less expensive. These alternatives should be modeled by SAJ using their 3D current model. Those currents should be furnished to ERDC so additional simulations can be undertaken with the pilots.

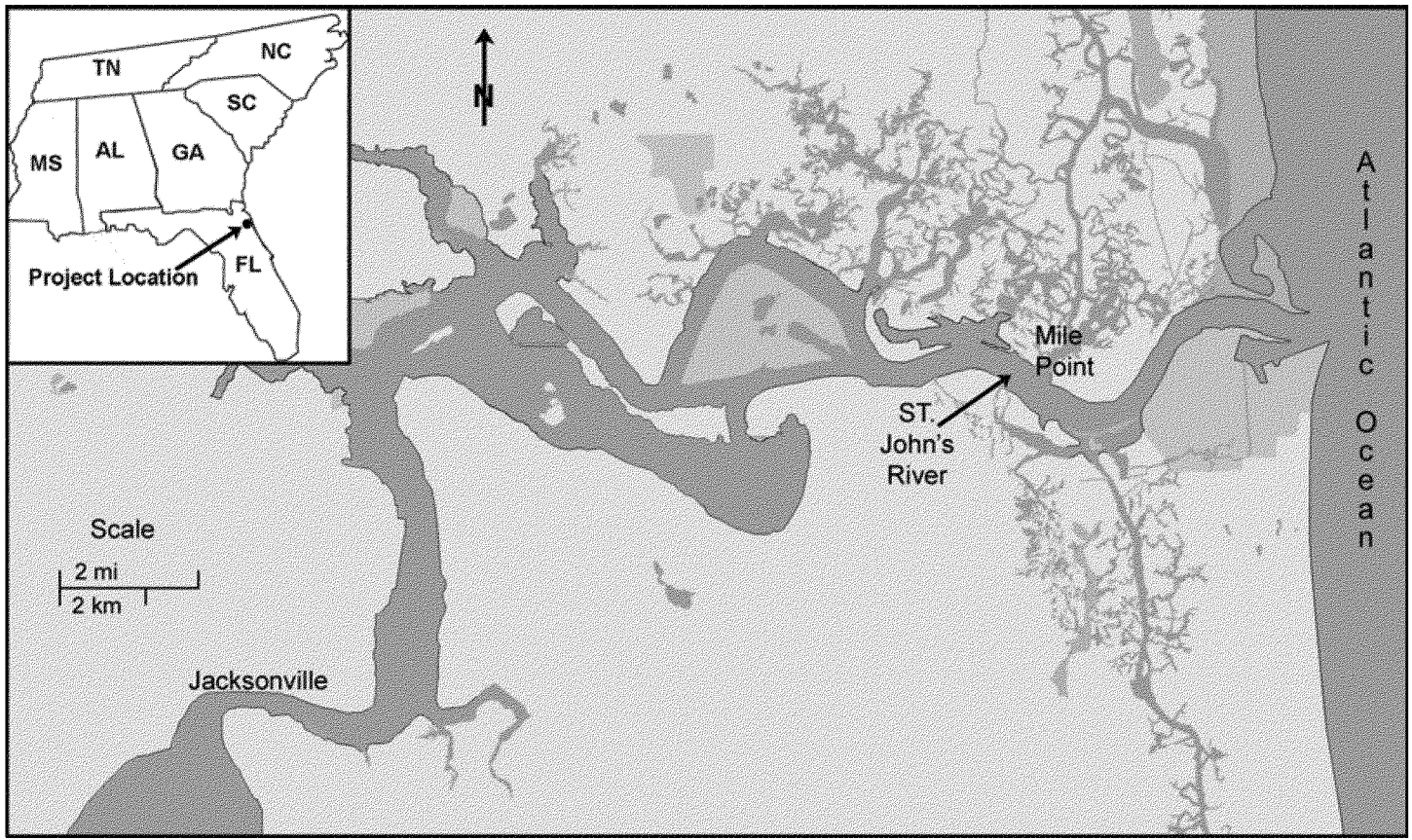


Figure 1. Project Location Map

300

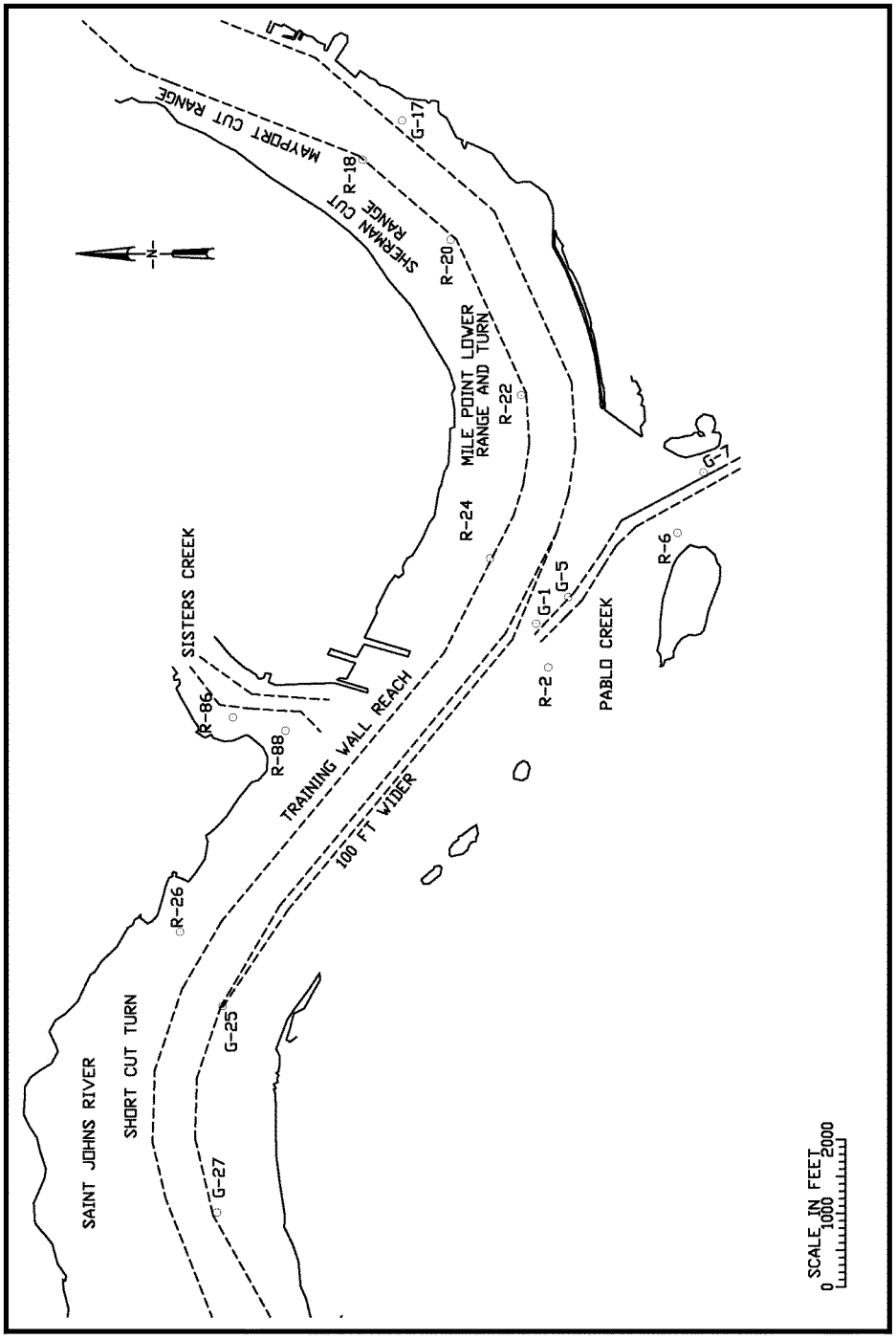


Figure 2. Mile Point, St. Johns River

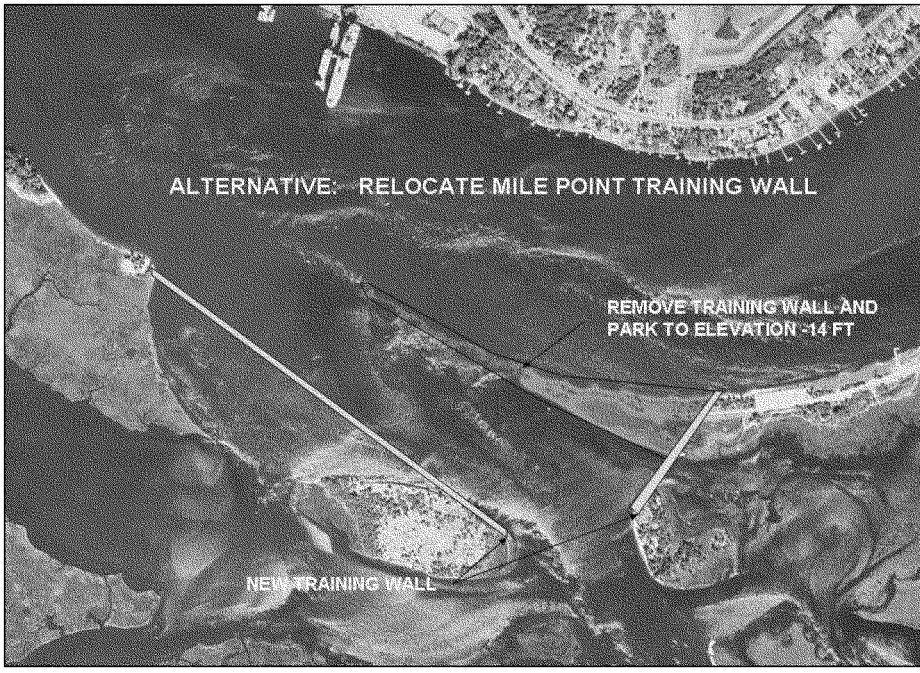


Figure 3. Proposed widening at mouth of Pablo Creek

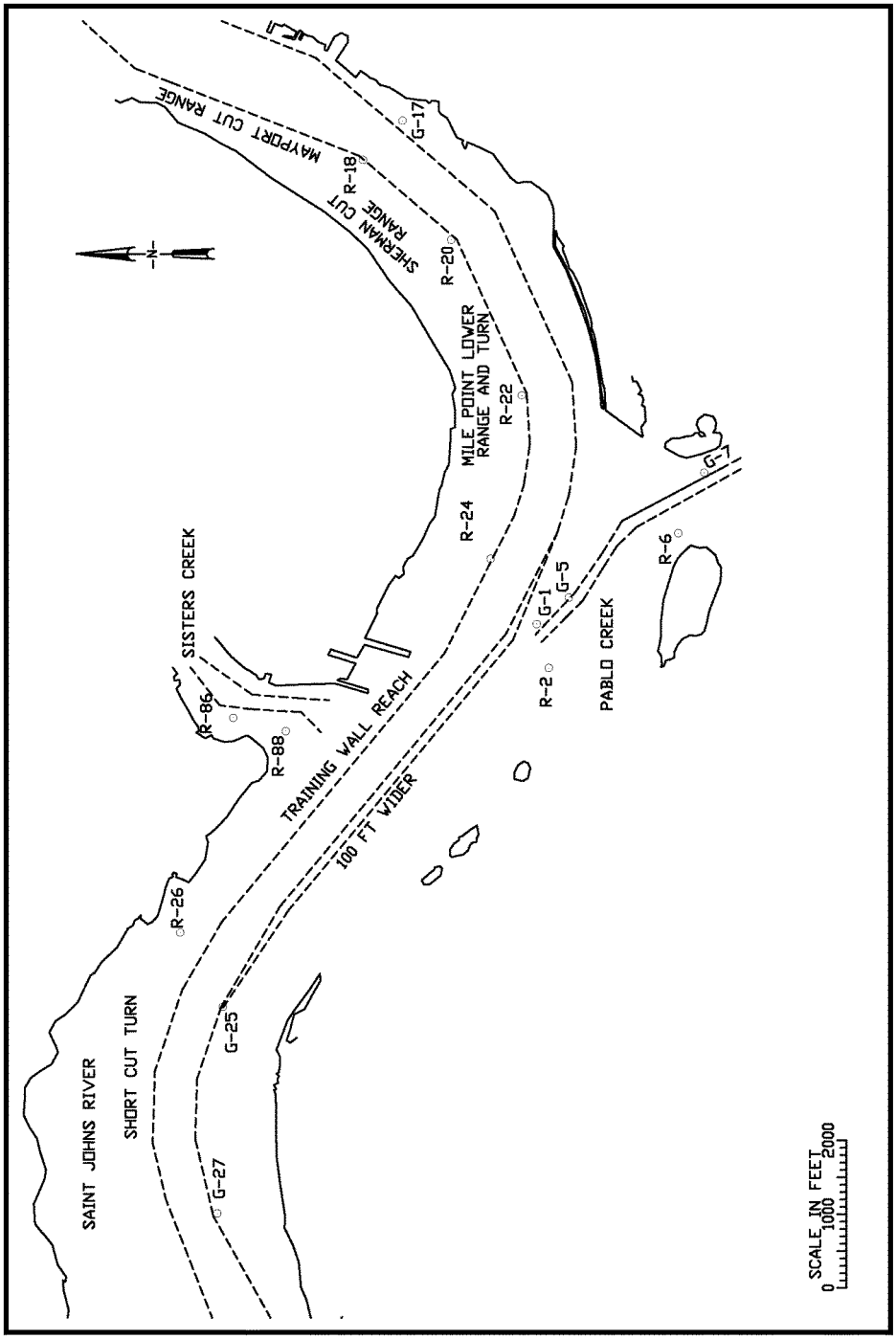


Figure 4. Alternative 2

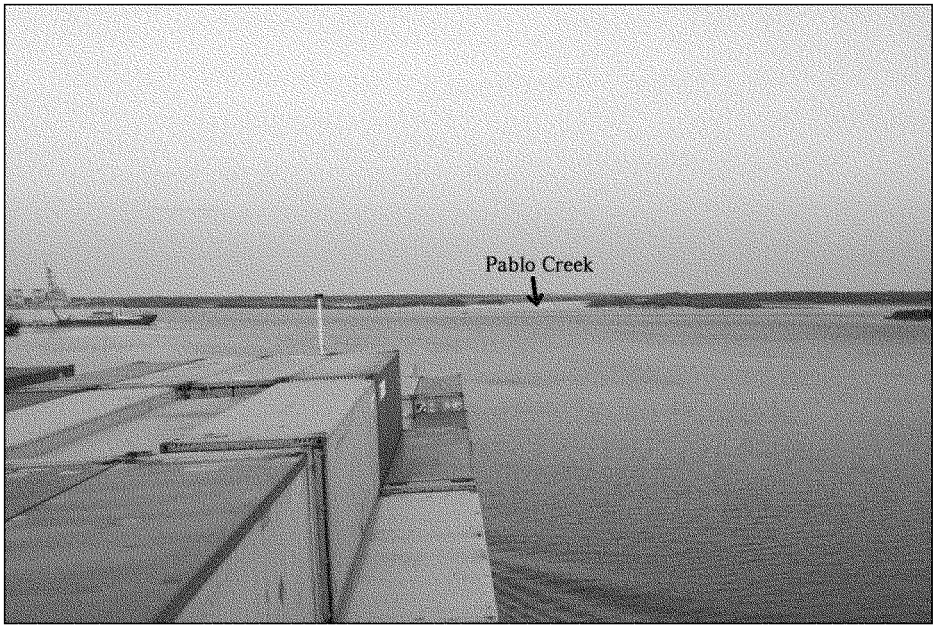


Figure 5. *Horizon Discovery* heading outbound on Training Wall Reach

Figure 6. . The *MSC Parana* meeting the *Nicos Tomasas* in Training Wall Reach

Figure 7. St. Johns Pilot operating simulation of Mile Point

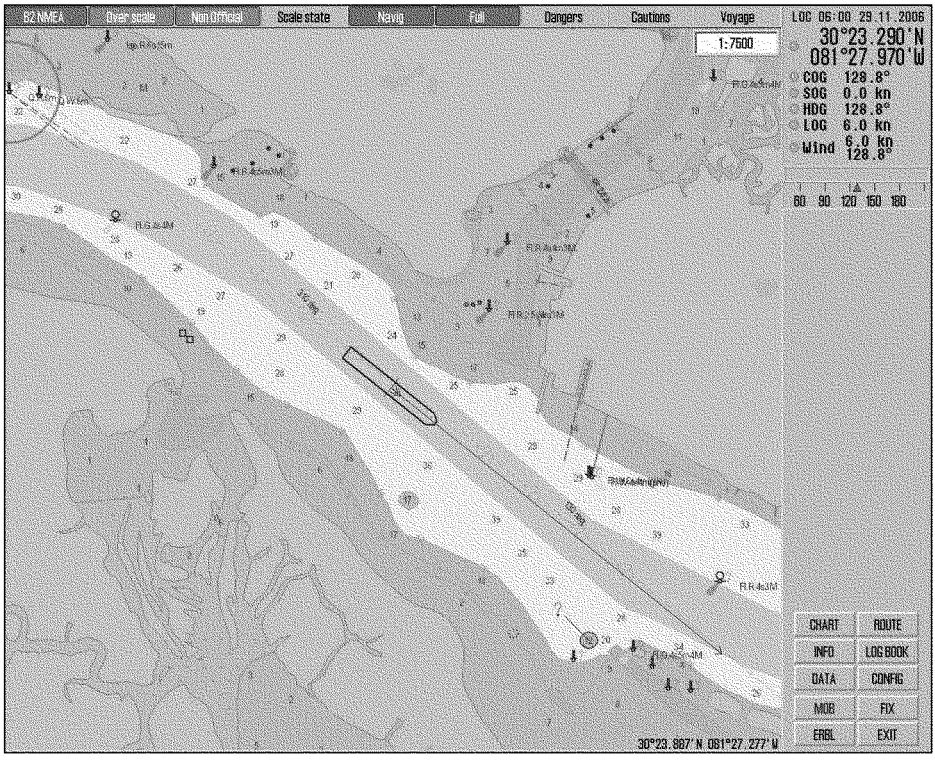


Figure 8. ECDIS display for Mile Point

ADDITIONAL SHIP SIMULATION REPORT

ATTACHMENT D

PROOF OF CONCEPT STUDY FOR MILE POINT CHANNEL WIDENERS

INTRODUCTION

Jacksonville, FL is located on the northeast corner of the state (Figure 1). The ships calling at the port of Jacksonville (JAXPORT) must transit St. Johns River, which links Jacksonville to the Atlantic Ocean. Presently, the St. Johns Bar Pilots Association restricts the movement of larger vessels during ebb tide due to strong crosscurrents at a section of St. Johns River known as Mile Point (Figure 2). Mile Point Lower Range and Turn and Training Wall Reach are crossed by the Atlantic IntraCoastal Waterway (ICW). The crosscurrents occur from Pablo Creek on the south and Sisters Creek on the north. JAXPORT considers it imperative that the tidal restriction be removed or significantly reduced.

The US Army Corps of Engineers District, Jacksonville (SAJ) proposed to increase the cross-sectional area for flow into and out of Pablo Creek. The increase in cross-sectional area is designed to reduce the current magnitude and ease the angle at which the current enters the St. Johns River. This proposal is shown in Figure 3. This proposal was studied by the U. S. Army Engineer Research and Development Center (ERDC) with a ship simulation model in 2004. That study concluded that the widening the mouth of Pablo Creek could reduce or eliminate the tidal restrictions. The proposed widening is referred to as Alternative 1.

SAJ now wishes to determine if widening on the west side of Training Wall Reach would be effective in reducing or eliminating the tidal restrictions. Three wideners of 300 ft, 400 ft, and 525 ft width were proposed (Figure 4). The wideners are referred to as Plan 1, Plan 2, and Plan 3, respectively. To assist SAJ in this determination, the ERDC conducted a "proof of concept" navigation study utilizing real-time ship simulation modeling to evaluate the proposed Mile Point wideners. Model development and online testing occurred at the ERDC in Vicksburg, MS during the period from June 2009 to September 2009.

STUDY ASSUMPTIONS

To quickly provide SAJ with input as to the effectiveness of the wideners, a "proof of concept" study was undertaken. If the wideners appear to be effective, a more robust study could be conducted.

Several assumptions were made to meet the time requirements of this effort. The existing condition currents from the 2004 study were used for all three plans. The same current directions and magnitudes from the 2004 were used for Plans 1, 2, and 3. The depths in within the wideners were deepened. The water in the area proposed to be widened is fairly deep, so this seemed a reasonable assumption. Subsequent analysis SAJ's three-

dimensional hydrodynamic modeling effort indicate that this is true. Results from this model were not available to get them converted in the simulator database format and checked out prior to real time testing.

Three pilots participated in the real-time simulation study. All three are members of the St. Johns River Pilots Association. There were Captains Jay Winegeart, Tim McGill, and Bill Brauer. Captains McGill and Brauer conducted simulations from the afternoon of September 14 through the morning of September 16. Captain Winegeart conducted simulations from the afternoon of September 16 all day September 17. Mr. Phil Sylvester represented SAJ at the simulations September 14 – 15. For many full navigation studies, six pilots participate for one week each. However, for this "proof of concept" study, an adequate amount of exercises were undertaken to evaluate the wideners.

RESULTS

Results are presented in the form of composite track plots.

Plan 1 – 300 ft widener

Inbound, Maximum Ebb in Saint Johns River.

Results of inbound simulations with the maximum ebb tide in St. Johns River are shown in Plates 1 – 2. Plate 1 shows two runs of the *Sibohelle* transiting the reach in the Plan 1 channel. Both pilots took their vessels into the 300 ft widener. However, they only used about 100 ft of the widener. Both pilots felt that going further into the widener forced their ships into an unsafe alignment with Training Wall Reach. Plate 2 shows two runs of the *Susan Maersk* transiting the reach in the Plan 1 channel. One run left the north side of the channel twice. Only one pilot took his vessels into the 300 ft widener. Both pilots felt that going further into the widener forced their ships into an unsafe alignment with Training Wall Reach.

Inbound, Maximum Ebb from Pablo Creek.

Results of inbound simulations with the maximum ebb tide from Pablo Creek are shown in Plates 3 – 5. Plate 3 shows two runs of the *Sibohelle* transiting the reach in the Plan 1 channel. The pilots used the southern portion of the widener, but were not comfortable bringing the ship into that position. Plate 4 shows two runs of the *Susan Maersk* transiting the reach. They also used the southern portion of the widener. One ship was set so severely by the flow from Pablo Creek that it left the north side of the channel. The track plot of one run of the *Sabrina* is shown in Plate 5. The ebb tide coming out of Pablo Creek forced the ship out of the channel on the north side.

Plan 2 – 400 ft widener

Inbound, Maximum Ebb in Saint Johns River.

Results of inbound simulations with the maximum ebb tide in St. Johns River are shown in Plates 6 – 8. Plate 8 shows two runs of the *Sibohelle* transiting the reach in the Plan 2 channel. Neither pilot brought their vessel into the widener. Plate 7 shows two runs of the *Susan Maersk* transiting the reach in the Plan 2 channel. Only one pilot took his vessels into the widener. Both ships ended up on the north side of the channel near Atlantic Marine. The track plot of one run of the *Sabrina* is shown in Plate 8. The pilot used the widener to make the turn.

Inbound, Maximum Ebb from Pablo Creek.

Results of inbound simulations with the maximum ebb tide from Pablo Creek are shown in Plates 9 – 11. Plate 9 shows one run of the *Sibohelle* transiting the reach in the Plan 2 channel. The pilot did not bring his ship into the widener, but did come to the edge of the existing channel. Plate 10 shows the *Susan Maersk* transiting the reach. The pilot did not bring his ship into the widener. The track plot of one run of the *Sabrina* is shown in Plate 11. The pilot brought the ship into the widener to make the turn.

Plan 3 – 525 ft widener

Inbound, Maximum Ebb in Saint Johns River.

Results of inbound simulations with the maximum ebb tide in St. Johns River are shown in Plates 12 – 14. Plate 12 shows two runs of the *Sibohelle* transiting the reach in the Plan 3 channel. On pilot took his ship deep into the widener, the other just crossed into it. Plate 13 shows two runs of the *Susan Maersk* transiting the reach in the Plan 3 channel. Both pilots used a small portion of the widener. One ship was severely set towards Atlantic Marine. The track plot of one run of the *Sabrina* is shown in Plate 14. The pilot did not use the widener.

Alternate 1 from 2004 study

Inbound, Maximum Ebb in Saint Johns River.

Results of inbound simulations with the maximum ebb tide in St. Johns River are shown in Plates 15 – 16. Plate 15 shows two runs of the *Sibohelle* transiting the reach in the existing channel with the mouth of Pablo Creek widened. The pilot was able to make the turn. Plate 16 shows two runs of the *Susan Maersk* transiting the reach in the existing channel with the mouth of Pablo Creek widened. Both pilots were able to make the turn.

Inbound, Maximum Ebb from Pablo Creek.

Results of inbound simulations with the maximum ebb tide from Pablo Creek are shown in Plates 17 – 18. Plate 17shows three runs of the *Sibohelle* transiting the reach in the existing channel with the mouth of Pablo Creek widened. All three runs were successful.

Plate 18 shows two runs the *Susan Maersk* transiting the reach. Both runs were successful.

Pilot Comments

The three pilots furnished the ERDC with an e-mail, as a record of their final comments.

This will be added later.

CONCLUSIONS

Based upon the simulator results and the pilot's final questionnaires, the following conclusions are made for the Mile Point improvements.

1. The pilots, as observed by ERDC and SAJ personnel, attempted to use the wideners to make the turn and avoid getting set toward Atlantic Marine.
2. The pilots felt that using the wideners put their vessels in harms way and would not use them unless they were 100% certain about currents.
3. The pilots, after using the wideners in the simulation, stated that they felt the wideners would not reduce tidal restrictions for Mile Point.
4. Based upon the simulator runs, the pilots felt that Alternative 1, widening the mouth of Pablo Creek, could reduce or eliminate tidal restrictions for Mile Point

U.S. ARMY CORPS OF ENGINEERS

U.S. ARMY CORPS OF ENGINEERS, JACKSONVILLE DISTRICT

ATTACHMENT E - VE STUDY FY'08

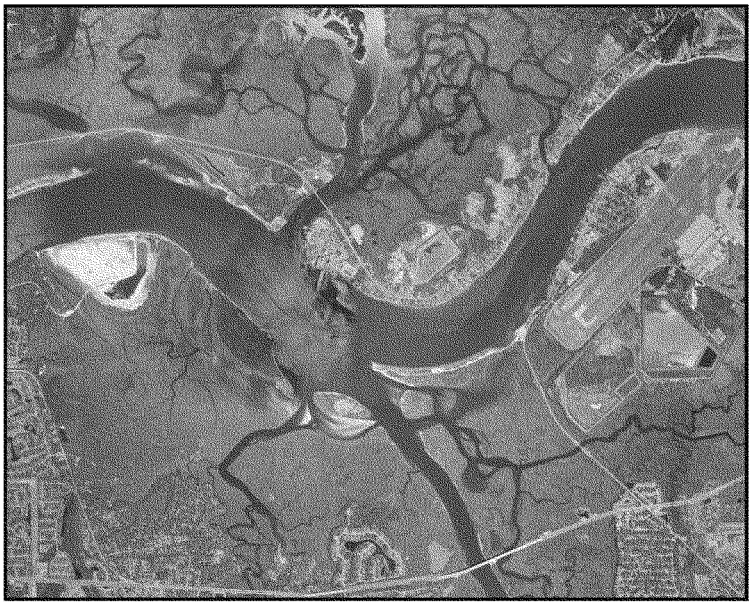
VALUE ENGINEERING STUDY REPORT

FINAL REPORT COPY

Mile Point Feasibility Report Study

(Jacksonville Harbor Navigation Study)

Duval County, Florida



Sponsored By: Jacksonville Port Authority and U.S. Army Engineering District, Jacksonville

SEPTEMBER 2008

VALUE ENGINEERING TEAM STUDY

DOD SERVICE: USACE **VALUE ENGINEERING OFFICER:** Fred McAuley
CONTROL NO: CESAJ-VE-08-009C

Final Value Engineering Report on the

Mile Point Feasibility Report Study

(Jacksonville Harbor Navigation Study)

DUVAL COUNTY, FLORIDA

September 2008

STUDY SPONSOR: Jacksonville Port Authority & USACE, Jacksonville District

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VALUE ENGINEERING TEAM STUDY
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VALUE ENGINEERING TEAM STUDY
PROJECT DESCRIPTION AND BACKGROUND

PROJECT TITLE: Mile Point Improvements Project
PROJECT LOCATION: Duval County, Florida

Mile Point is located in Duval County, Florida. It consists of about 5,000 feet of shoreline located along the north shore of the St. Johns River and east of the Intracoastal Waterway (IWW). The Mile Point study is intended to assess Federal interest in navigation improvements to include an evaluation of benefits, costs, and environmental impacts. The feasibility study was authorized by a resolution of the House Committee on Transportation and Infrastructure, March 24, 1998. The study will determine plans to evaluate the Mile Point erosion problem and to provide recommendation for reducing the difficult crosscurrents during the ebb flow at the confluence of the St. Johns River with the IWW.

Benefits of the proposed action would minimize the impacts of the flows out of the IWW during the ebb tide to slow the velocities on the north bank and slow the progression of erosion. Due to the difficult crosscurrents in the channel the St. Johns Bar Pilots have restricted navigation for vessels transiting on a draft of 33 feet or deeper. Reducing the difficult crosscurrents in the harbor would allow the pilots to reduce or eliminate these navigation restrictions. Adverse impacts would include loss of salt marsh that would be mitigated. Measures taken to avoid, minimize, and compensate for adverse impacts include beneficial use of dredged material, creation of habitat units beyond the required mitigation, and providing flow improvement measures to mitigate for erosion caused by the project.

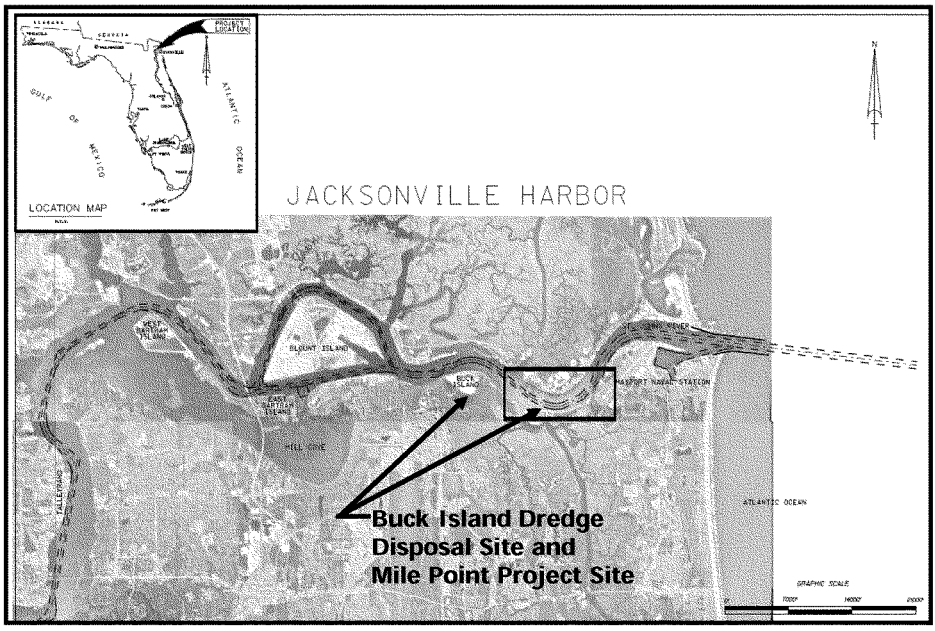
Alternatives: Alternatives that were evaluated include Non-structural alternatives include operational measures and a no action alternative. Structural alternatives include a North shoreline groin field, San Pablo Creek IWW Submerged Weir, Rebuild Mile Point Training Wall, 150 Foot Training Wall Reach Widening, Eastern Chicopit Bay Diversion, Relocate Mile Point Training Wall, and a Short Cut Widener. Combinations of these alternatives were also evaluated.

The emerging alternative identified at the time of the Value Engineering study was Alternative 3B -- Relocate Mile Point Training Wall. This alternative relocated and constructed new east and west training walls, using armor and bedding stone for erosion control, and placed approximately 0.9 MCY of dredge material by pipeline upland into the Buck Island dredge disposal site located approximately 2 to 3 miles west of the project site. The estimated cost for the refined initial plan, Final Alternative 3B, design is $76.388 million. Defining and developing salt marsh mitigation requirements for the project resulted in further refinement to the plan. A salt marsh restoration plan was identified and incorporated into the Alternative 3B – Great Marsh Island Required Mitigation (18.2 Acre) plan estimated as $55.945 million. These two plans were used as baseline for the VE study alternatives.

See the Supporting Documents for the Value Engineering Team Members, the Speculation List, Cost Models, FAST Diagram (identifying project functions), and Supporting Information for Proposals and comments including detailed cost estimates.

VALUE ENGINEERING TEAM STUDY
PROJECT DESCRIPTION AND BACKGROUND
PROJECT TITLE: Mile Point Improvements Project
PROJECT LOCATION: Duval County, Florida

JACKSONVILLE HARBOR AND MILE POINT PROJECT AREA MAP



VALUE ENGINEERING TEAM STUDY
PROJECT DESCRIPTION AND BACKGROUND
PROJECT TITLE: Mile Point Improvements Project
PROJECT LOCATION: Duval County, Florida

MILE POINT PROJECT AREA SITE MAP
(Alternative 3B – Relocate Mile Point Training Wall)

Existing Training Wall to be Reconfigured

Proposed New Training Wall to be Relocated

Proposed Upland Dredge Disposal – Buck Island

The initial Alternative 3B was limited in development and quantities for features were early plan formulation level of detail with rough order of magnitude cost estimate. The formal VE study process was initiated May 1, 2008, and continued with alternative plan development though June, July and August 2008. Revisions resulted in the revised Final Alternative 3B Plan (Relocate Retaining Walls with Upland Disposal), Alternative 3B – Great Marsh Island Required Mitigation (18.2 Acre), and the Tentatively Selected Plan (TSP), VE Alternative 3B, which were developed using VE ideas for equal comparison and best plan selection. These two Alternative 3B plans were considered to represent the Mile Point base condition plan and the potential VE plan, and are incorporated into the Final Value Engineering Study Report dated September 2008. The participants included District project design team (PDT) members listed in Appendix A.

Value Engineering (VE) is a process used to study the functions a project is to accomplish. As a result, the VE team takes a critical look at how these functions are being met, and it identifies alternative ways to achieve the equivalent function while increasing the value, and the cost ratio of the project. The project was studied using the Corps of Engineers standard Value Engineering (VE) methodology:

Information Phase: The Team was presented figures, descriptions of project work, and cost estimates to fully understand the work to be performed and the functions to be achieved. Cost Models (see Appendix C) were compared to determine areas of relative high cost to ensure that the team focused on those parts of the project that offered the most potential for cost savings.

Speculation Phase: The Team speculated by conducting brainstorming sessions to generate ideas for alternative designs. All team members contributed ideas and critical analysis of the ideas was discouraged (see Appendix B).

Analysis Phase: Evaluation, testing and critical analysis of all ideas generated during speculation was performed to determine potential for savings and possibilities for risk. Ideas were ranked by priority for development. Ideas that did not survive critical analysis were deleted.

Development Phase: VE team members developed the selected priority ideas identified during analysis into written proposals. Proposal descriptions and possible impacts to schedule and funding were identified for each item discussed. Savings were estimated where realized.

Presentation Phase: Presentation Phase includes publication of the VE Study Report for distribution, review and coordination. Notation reflecting "Recommended Action" for each proposal is shown on Summary of Proposals / Recommended Action. Further formal coordination of VE action items will be through the project PDT and VEO. Savings realized from the VE study are reported to Division and HQ, and are credited to the District assigned Value Engineering goals.

VALUE ENGINEERING TEAM STUDY
SUMMARY OF PROPOSALS / RECOMMENDED ACTION

PROPOSAL NUMBER	DESCRIPTION	POTENTIAL SAVINGS	RECOMMENED ACTION
C-1	Develop Improved Training Wall Sections and Delete Scour Stone	$12,234,000	Accepted in NED/TSP
C-2	Develop a Composite Plan for Mile Point Navigation Improvements and Dredge Disposal Supporting Salt Marsh Mitigation and Restoration of Great Marsh Island	$9,056,000	Accepted in NED/TSP
	Estimated Total First Cost Savings	**$21,290,000**	

VALUE ENGINEERING PROPOSAL

PROPOSAL NO: C-1 PAGE NO: 1 OF 5

DESCRIPTION: Develop Improved Training Wall Sections and Delete Scour Stone

ORIGINAL DESIGN: Alternative 3B-Relocation of the Training Wall, initially included removal of the 3,110 feet of an existing Mile Point training wall and reconstruction of a relocated eastern training wall (approximately 2,050 feet), and construction of a new western training wall (approximately 4,250 feet). New channel armoring was to be provided for the improved confluence opening and between training walls by jetty stone (revised to use bedding stone at a 2 foot thickness). Total quantities of stone included the following: bedding stone scour protection using 100,000 CY; and training walls used 32,800 CY of armor stone and 11,700 CY of filter stone. Dredging to reshape confluence was designated to -16 MLW as influenced by the depth of stone and a 2 foot authorized paid over depth. Dredged material was to be placed by pipe-line into the upland disposal site at Buck Island located approximately 2 to 3 miles west of the Mile Point project site.

The initial plan was renamed "Final Alternative 3B - Relocation of the Training Wall", with a reduced dredge by pipeline to Buck Island material quantity of 889,000 CY. This quantity is adjusted by adding 150,000 CY for the required depth for bedding stone and paid overdepth to justify proposed savings. The Mile Point Dredge Area Plan with notes on dredging depths and bedding stone scour protection is shown on Figure 1. Modified East and West Training Wall Structures Sectional Views are shown in Figure 2. This alternative is considered the baseline plan for comparison of the VE alternative plan.

PROPOSED DESIGN: Improved Mile Point IWW channel widening and deepening will reduce currents and cross-currents at the confluence of the main channel. Erosion potential is greatly reduced with improvement in place. Scour toe sections would be added to protect the structural integrity of the training walls. Optimization to the training wall sections as recommended has potential to reduce the needs for vast quantities of scour stone armoring. Elimination of the scour mat and refinement to the paid overdepth reduces dredge material quantities. The new dredging depth for Mile Point changes from -16' MLW to -13' MLW (-14'+2' overdepth to -12'+1' overdepth). See notes shown on Figures 1 and 2.

ADVANTAGES:

- Training wall structures incorporates larger scour aprons designed for optimal service life and minimal maintenance, repair and replacement - part of savings from scour blanket are reinvested in scour aprons.
- Elimination of the 2 foot thick scour mat and refinement to the paid overdepth to 1 foot would reduce dredge material quantities.
- New surveys and coordination of Mile Point navigation and flowway requirements indicates potential for reduced excavation quantities to develop the navigation improvements – nets total reduced dredge quantities.
- Recommended changes are provided early in the plan formulation process to permit modification of the alternative plan under study.

VALUE ENGINEERING PROPOSAL

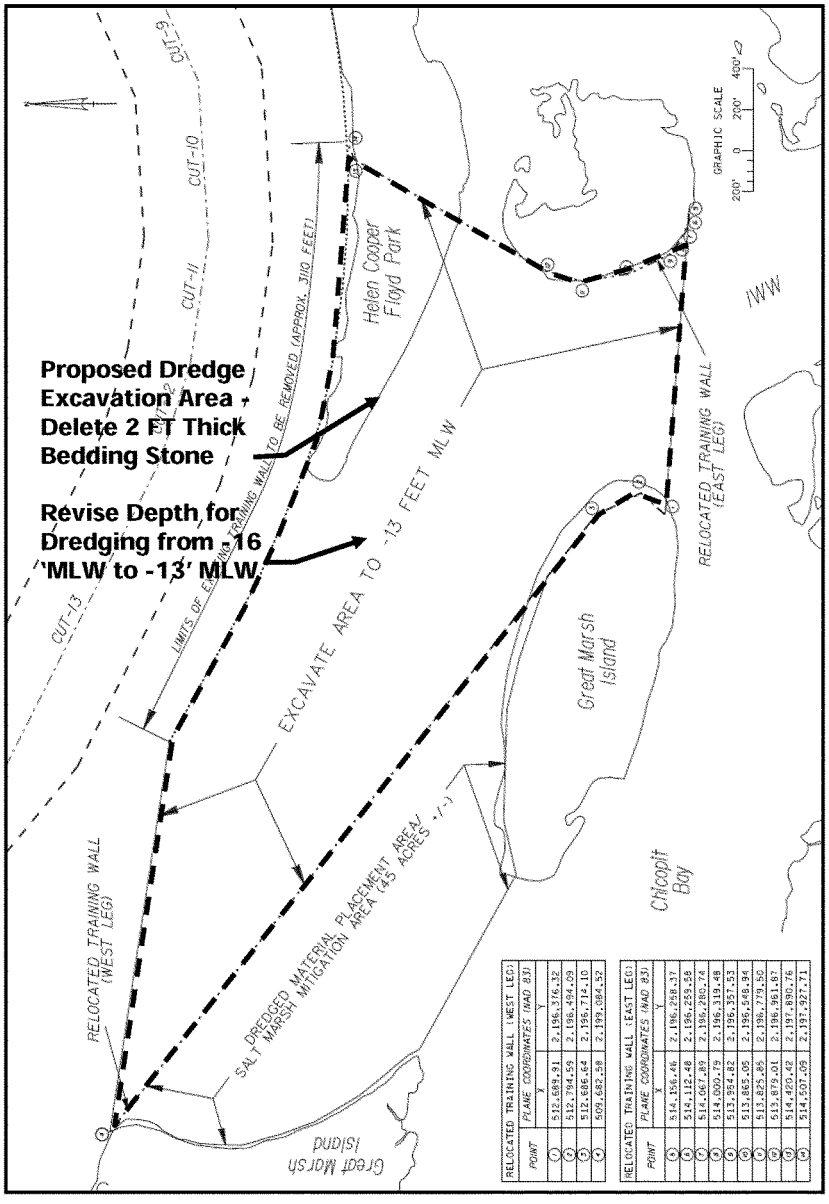
PROPOSAL NO: C-1 PAGE NO: 2 OF 5

JUSTIFICATION: The recommended VE plan includes removal of the western 3,110 feet of existing Mile Point training wall and the construction of a new Western Leg and a relocated Eastern Leg training wall of approximately 4,250 feet and 2,050 feet as generally described in the initial plan. Total stone class and weights are increased, and the new section incorporates larger scour aprons. The original planned mass bedding stone is eliminated and part of the total savings is used to pay for increases in stone quantities. Incorporation of the improved training wall structures are assumed to provide 85 to 100 years service and are designed for optimal service life, and minimal maintenance, repair and replacement.

Total quantities of stone included the following: training walls used 48,800 CY of armor stone and 52,900 CY of filter stone. Dredging to reshape confluence was reduced by 150,000 CY.

Savings will be reported under the SAJ Value Engineering program based on estimates for the initial Alternative 3B and modified Alternative VE-3B+FIC. Savings are estimated as $12,234,000.

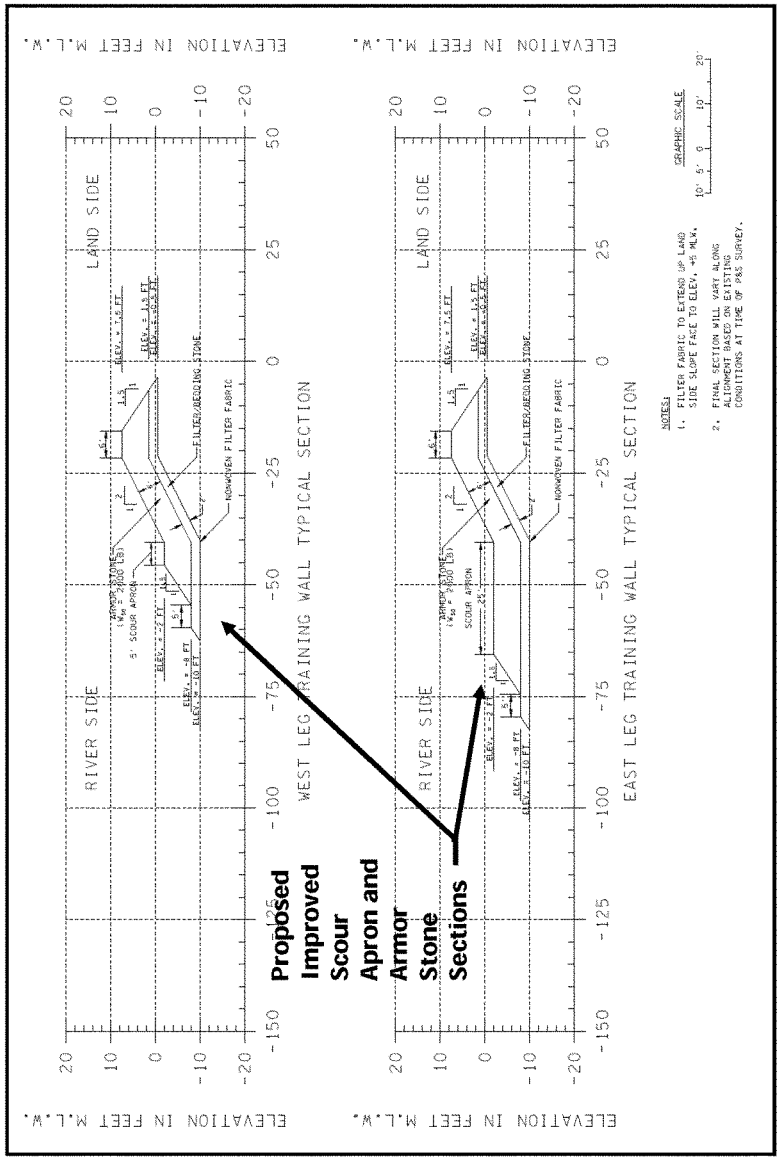
FIGURE 1: ALTERNATIVE 3B MILE POINT DREDGE AREA PLAN



VALUE ENGINEERING PROPOSAL

PROPOSAL NO: C-1 PAGE NO: 4 OF 5

FIGURE 5: MODIFIED ALTERNATIVE 3B TRAINING WALL SECTIONS
(East and West Training Wall Structures Sectional Views)



VALUE ENGINEERING PROPOSAL

PROPOSAL NO: C-1 PAGE NO: 5 OF 5

COST ESTIMATE WORKSHEET

PROPOSAL DESCRIPTION: Develop Improved Training Wall Sections, Delete Bedding Stone

DELETIONS

ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
S-1 Filter Stone	CY	7,900	$182.57	$1,442,303
S-1 Armor Stone	CY	22,100	$436.29	$9,642,009
S-2 Filter Stone	CY	3,800	$178.65	$678,870
S-2 Armor Stone	CY	10,700	$437.22	$4,678,254
Bedding Stone (2' Thick)	CY	100,000	$197.87	$19,787,000
Dredging to Buck Island (+3' for Stone/POD)	CY	150,000	$21.24	$3,186,000
				$0
				$0
				$0
				$0
				$0
				$0
		Total Deletions		$39,414,436

ADDITIONS

ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
S-1 Improved Section - Filter Stone	CY	18,400	$182.57	$3,359,288
S-1 Improved Section - Armor Stone	CY	36,900	$436.29	$16,099,101
S-1 Improved Section - Filter Fabric	SY	34,556	$3.82	$132,004
S-2 Improved Section - Filter Stone	CY	11,900	$178.65	$2,125,935
S-2 Improved Section - Armor Stone	CY	12,300	$437.22	$5,377,806
S-1 Improved Section - Filter Fabric	SY	22,500	$3.82	$85,950
				$0
				$0
				$0
				$0
				$0
				$0
		Total Additions		$27,180,084
	Net Cost Decrease/Increase			$12,234,352
*	Mark-ups	0.00%		$0
	Total Cost Decrease/Increase			$12,234,352

* Mark-ups: Gen. Contractor Mark-up (Field Office/Home Office/Profit/Bond); Construction Mgt; & Contingencies included in Unit Prices.

VALUE ENGINEERING PROPOSAL

PROPOSAL NO: C-2 PAGE NO: 1 OF 8

DESCRIPTION: Develop a Composite Plan for Mile Point Navigation Improvements and Dredge Disposal Supporting Salt Marsh Mitigation and Restoration of Great Marsh Island

ORIGINAL DESIGN: The initial plan, Alternative 3B-Relocation of the Training Wall, includes removal of the 3,110 feet of an existing Mile Point training wall and reconstruction of a relocated eastern training wall (approximately 2,050 feet), and construction of a new western training wall (approximately 4,250 feet). Refinements were made to the structures for reduced quantities of bedding and armor stone. Dredging to reshape confluence to -16 MLW was refined to -13 MLW. Dredged material quantities were reduced from ~1.3 MCY to 889,000 CY (by updated survey and elimination of scour stone), and material would then be placed by pipeline into the upland disposal site at Buck Island located approximately 2 to 3 miles west of the Mile Point project site. The mitigation feature was a known project requirement at the time of the initial VE sessions, though the estimated quantities and costs were not developed at the start of the VE study.

Reconstruction of the new eastern training wall would result in the removal of the western portion of Helen Cooper Floyd Park. This portion of the park consists of jurisdictional wetlands, specifically salt marsh, as well as disturbed uplands. The salt marsh boundaries had been previously delineated by the landowner (US Navy), and it was calculated that the proposed relocation of the training wall would impact 8.15 acres of marsh. Two conceptual alternatives being considered for the mitigation site were: 1. Required Marsh Restoration Area - 18.2 Acres (Low Marsh - 16.4 acres and High Marsh - 1.8 acres); and 2. Optimal Marsh Restoration Area - 45 Acres (Low Marsh - 43 acres and High Marsh - 2 acres). Material to create the restoration area would come from the authorized project.

The initial plan was further modified to incorporate the required salt marsh mitigation feature, and it was renamed "Alternative 3B – Great Marsh Island Required Mitigation (18.2 Acres)". This plan retains the removal of 889,000 CY of dredge material with quantities for the 18.2 acre mitigation site by 16-inch pipeline and the remaining dredge material by 30-inch pipeline to Buck Island. Dredge by Pipeline to Buck Island and Relocate Training Walls is shown on Figure 1. Great Marsh Island salt marsh and high marsh mitigation alternatives are shown as Figure 2 and 3. This alternative is considered the baseline plan for comparison of the VE alternative plan.

PROPOSED DESIGN: As a result of the number of closely related, dependent and sequentially supporting ideas for project features identified during the VE study brainstorming and analysis sessions, a composite plan has been developed incorporating four specific Speculation ideas:

- Fully develop Great Marsh Island as a material placement location and salt marsh mitigation feature with available project dredge material quantities (~45 acres +/-).
- Evaluate dredging depths and navigation performance, and balance dredge excavation quantities to salt marsh mitigation feature fill requirements.

- Develop stone training wall structures for optimal service life and minimal maintenance, repair and replacement – incorporate larger scour aprons and eliminate mass bedding stone.
- Add Chicopit Bay flowway to allow for improved water quality and environmental stability of the project area by increasing flushing capacities and channel flow dynamics, and place dredge material into Great Marsh Island mitigation improvements (~8 acres +/-).

Plan views of the modified composite Alternative VE-3B Plan with removal of 889,000 CY of dredge material by pipeline to Great Marsh Island, relocation of Training Walls, Great Marsh Island salt marsh mitigation areas and modified stone training wall structures are shown on Figures 4 and 5.

ADVANTAGES:
- Per the U.S. Clean Water Act and Florida state statute, mitigation for the loss of salt marsh at Helen Cooper Floyd Park would be required. The eroded breakthrough at Great Marsh Island would provide an appropriate mitigation site.
- New surveys and coordination of Mile Point navigation and flowway requirements indicates potential for balanced excavation to develop the Great Marsh Island mitigation feature – nets total reduced dredge quantities ~410,000 CY.
- Training wall structures designed for optimal service life and minimal maintenance, repair and replacement incorporates larger scour aprons. The mass bedding stone is eliminated; however, the size of stone increases and net cost savings are reinvested in scour aprons.
- There is both a reduction in quantities to be dredged and the proposed mitigation site is closer than Buck Island, thereby reducing pipeline pumping distance and cost.
- The size and capacity of dredge equipment needed to excavate and move material changes significantly, i.e. a 30-inch cutter-suction pipeline operation could be reduced to a 16-inch cutter-suction pipeline.
- Recommended changes are provided early in the plan formulation process to permit modification of the alternative plan under study.

DISADVANTAGES:
- Achieving the correct elevation for salt marsh mitigation will likely require a phased approach. See Comment 1 for additional details.
- The restoration area would need to be monitored for at least five years.
- Potential cultural resources will have to be determined within the proposed restoration area.

JUSTIFICATION: The recommended VE plan includes removal of the existing western Mile Point training wall and the construction of a new Western Leg and a relocated Eastern Leg training wall of approximately 4,250 feet and 2,050 feet as generally described in the initial plan.

VALUE ENGINEERING PROPOSAL

PROPOSAL NO: C-2 PAGE NO: 3 OF 8

The recommended plan is modified to realize beneficial use of approximately 889,000 CY of dredged material by creating a combination of salt marsh and high marsh mitigation areas that restores wetlands lost on Great Marsh Island and Helen Cooper Floyd Park. Restoring Great Marsh Island is both the least cost alternative for dredged material and also provides additional acres of salt marsh restoration above the 18.2 required acres.

This plan incorporates the beneficial use of dredged material by creating a salt marsh mitigation area that restores wetlands lost on Great Marsh Island. Environmental Restoration benefits (National Environmental Restoration) were realized with this alternative. Restoration in excess of the required mitigation (18.2 acres) could be used as credits (26.8 acres) for a future project. The mitigation site at Great Marsh Island is closer than Buck Island, which would result in a substantial cost savings by reducing pumping distance of dredged material and allow a smaller dredge and less pipeline.

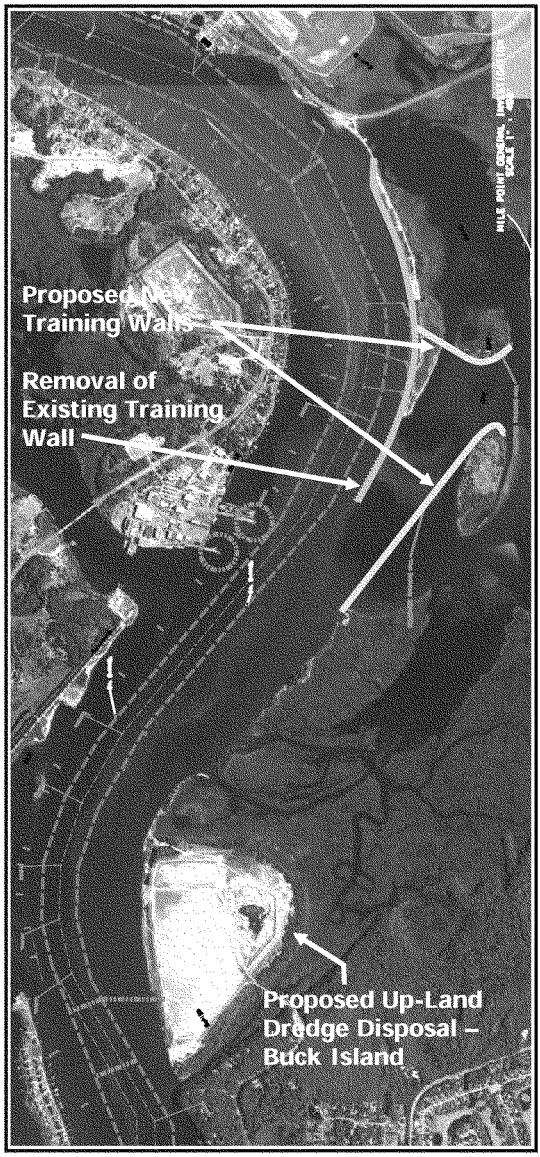
As presented in Proposal C-1, improved training wall structures are assumed to provide 85 to 100 years service and are designed for optimal service life and minimal maintenance, repair and replacement incorporates larger scour aprons.

The Chicopit Bay flow improvement channel (FIC) was added to the design of this alternative to allow for improved water quality and environmental stability of the project area by increasing flushing capacities and channel flow dynamics. Dredged material potentially contributes an additional ~8 acres of salt marsh.

The preferred alternative is Relocation of the Mile Point Training Wall and is referred to as Alternative VE-3B+FIC in the report. This alternative was the only alternative that provides for a reduction in erosion on the Mile Point shoreline and allows for the St. Johns Bar Pilots to lift the restrictions to navigation.

Savings will be reported under the SAJ Value Engineering program based on estimates for the modified initial alternative plan, "Alternative 3B – Great Marsh Island Required Mitigation (18.2 Acres)", and modified Alternative VE-3B+FIC. Savings are estimated as $9.056 million.

FIGURE 1: ORIGINAL ALTERNATIVE 3B PLAN
(Dredge by Pipeline to Buck Island and Relocate Training Walls)



VALUE ENGINEERING PROPOSAL

PROPOSAL NO: C-2 PAGE NO: 5 OF 8

FIGURE 2 AND 3: ALTERNATIVE 3B MITIGATION PLANS

(Great Marsh Island Minimal 18 Acre Required and Expanded 45 Acre Mitigation Plans)

FIGURE 4: PROPOSED MODIFIED ALTERNATIVE 3B MILE POINT PLAN

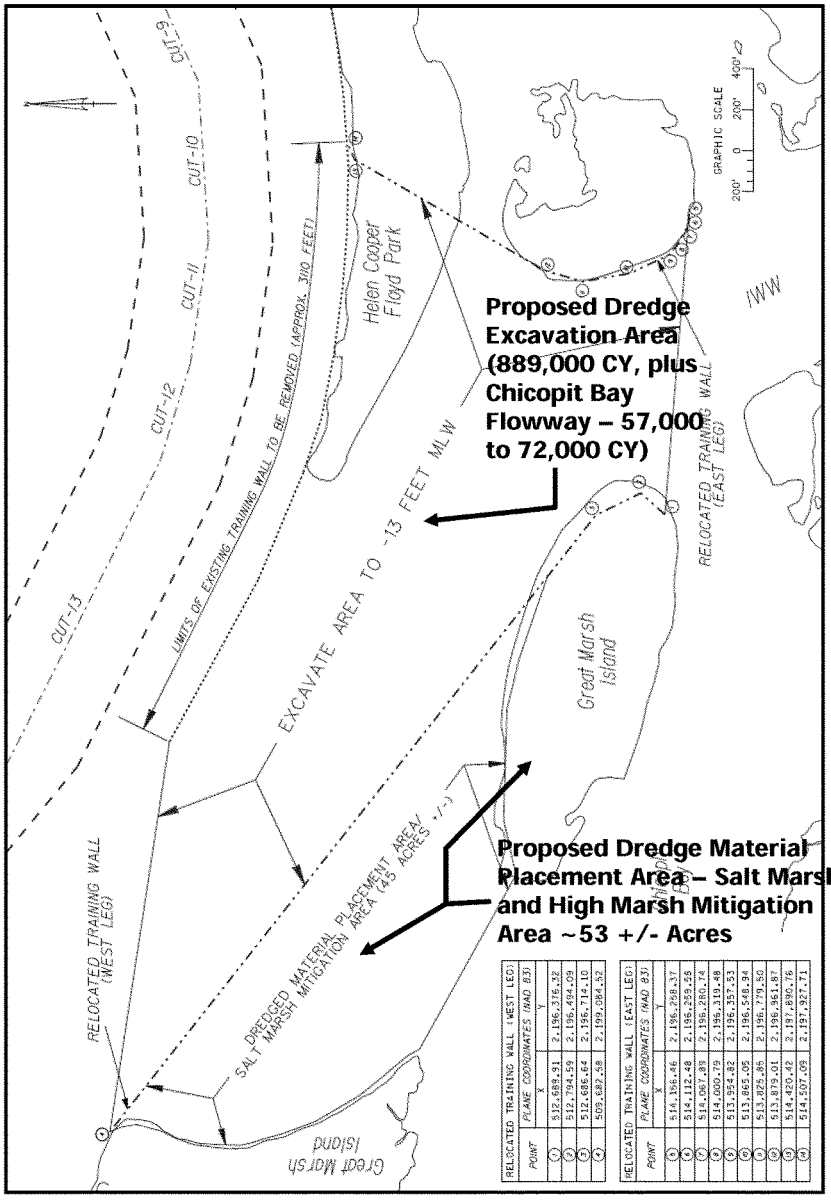
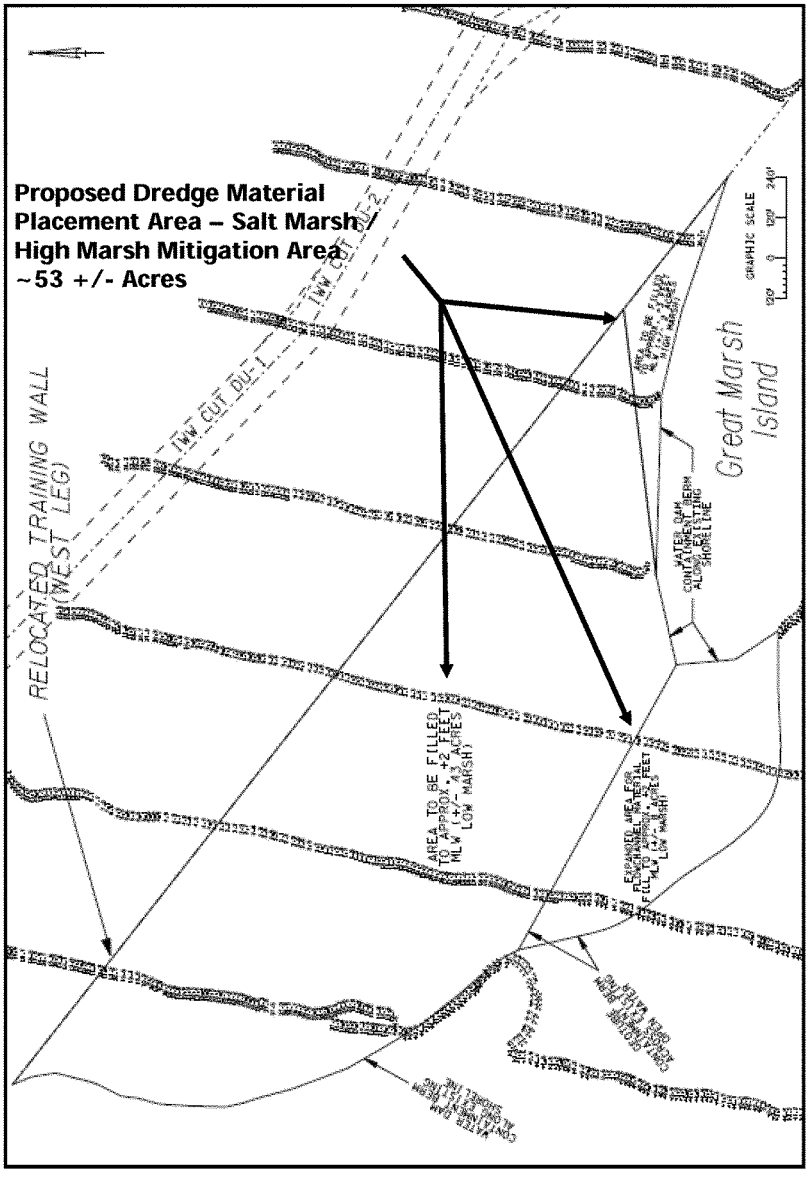


FIGURE 5: PROPOSED MODIFIED ALTERNATIVE 3B MITIGATION PLAN
(Detail Great Marsh Island – 53 +/- Acre Mitigation Plan)



VALUE ENGINEERING PROPOSAL

PROPOSAL NO: C-2 PAGE NO: 8 OF 8

COST ESTIMATE WORKSHEET

PROPOSAL DESCRIPTION: Composite Plan for Mile Point Navigation Improvements

DELETIONS

ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
Alternative 3B Great Marsh Island	LS	1	$55,945,078.00	$55,945,078
Required Mitigation (18.2 Acre)				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
		Total Deletions		$55,945,078

ADDITIONS

ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
Proposed Modified Alternative VE-3B	LS	1	$46,888,664.00	$46,888,664
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
		Total Additions		$46,888,664
	Net Cost Decrease/Increase			$9,056,414
*	Mark-ups	0.00%		$0
	Total Cost Decrease/Increase			$9,056,414

* Mark-ups: Gen. Contractor Mark-up (Field Office/Home Office/Profit/Bond); Construction Mgt; PED and Contingency included in Unit Prices. See Appendix E for supporting cost details

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

The following comments are provided on ideas that were considered by the VE team and are documented to varying levels of detail. Comments may be integrated with selected modified plan, or may stand alone.

COMMENT 1: Subsequent to the formation of Alternative 3B, it was determined that the western portion of Helen Cooper Floyd Park consists of jurisdictional wetlands, specifically salt marsh, as well as disturbed uplands. The salt marsh boundaries had been previously delineated by the landowner (US Navy), and with this information it was calculated that the proposed relocation of the training wall would impact 8.15 acres of marsh. Instead of placing the dredged material at Buck Island, the recommended alternative is to use the material to mitigate for project related impacts. This could be accomplished by restoring salt marsh which historically occurred within the eroded breakthrough at nearby Great Marsh Island.

The mitigation plan could be implemented in phases as follows:

Phase 1: Construction of the project would include: surveys to determine existing elevations or depths of the proposed salt marsh restoration area as well as elevations of low and high salt marsh of adjacent marsh areas; relocation of the training wall; placement of berm type structures on the south, east and west sides of the restoration area; and placement of dredged material into the contained restoration area. The target elevation of the restoration area should be comparable to adjacent marsh, with settling taken into consideration. This work would be accomplished under the initial construction contract.

Phase 2: After the dredged material within the restoration area has settled, the following tasks would be performed: elevations within the restoration area would be determined; if necessary, material would be added or removed in order to achieve elevations that match adjacent existing low and high marsh; biological site survey of the upland area of Great Marsh Island prior to use as potential borrow area; construction of tidal channels within the restoration area; and transplanting low and high marsh species of plants from adjacent donor marshes to the restoration area. This work would be accomplished under a second construction contract; however, the planting could be performed by a separate contract administered by SAJ-PD-EC.

Phase 3: The restoration site would be monitored for a minimum of five years.

ADVANTAGES:

- Per the U.S. Clean Water Act and Florida state statute, mitigation for the loss of salt marsh at Helen Cooper Floyd Park would be required. The eroded breakthrough at Great Marsh Island would provide an appropriate mitigation site.

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

- The project will attempt to restore the entire eroded breakthrough, which would result in the restoration of ~53 +/- acres of marsh area. This beneficial use of dredged material would exceed the required 18.2 acres of mitigation, and would provide a higher net increase of salt marsh functions and values.
- The proposed mitigation site is closer than Buck Island, thereby reducing pumping distance and cost.
- Equipment needed to excavate and move material would change significantly, i.e. a smaller dredge could be used, due to the proximity of the mitigation site. This would also result in a cost savings.
- Recommended changes are provided early in the plan formulation process to permit modification of the alternative plan under study.

DISADVANTAGES:
- Achieving the correct elevation for salt marsh mitigation will likely require a phased approach. Dredged material would be placed in the mitigation site during the first phase of the mitigation plan, and then an amount of time would have to be allocated for settling of the material to take place. During the second phase of the plan, the elevation of the mitigation site would be assessed and, if necessary, material would be added or removed in order to achieve the correct elevation for low and high marsh Construction of tidal channels and planting of salt marsh vegetation would be performed once the correct elevation is achieved. The restoration area would need to be monitored for at least five years.
- Potential cultural resources will have to be determined within the proposed restoration area.

JUSTIFICATION: This opportunity incorporates the beneficial use of dredged material on Great Marsh Island by creating a salt marsh mitigation area that restores wetlands lost by improvement in the Mile Point project area. The initial plan can be modified to realize beneficial use of approximately 889,000 CY of dredged material by creating a salt marsh mitigation area. The Chicopit Bay flow improvement channel (FIC) provides an additional 50,000 to 70,000 CY, or potentially 8 +/- acres. The total acreage may range to 53 acres.

The Uniform Mitigation Assessment Method was used to determine that 18.2 acres of mitigation would be required to offset the loss of 8.15 acres of salt marsh at Helen Cooper Floyd Park. As a beneficial use of dredged material, the project will attempt to restore the entire eroded breakthrough at Great Marsh Island. This would result in the restoration of ~53 acres of marsh, and would provide a higher net increase of salt marsh functions and values. Environmental benefits of this magnitude could help justify the proposed project in addition to the economic benefits.

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

The District could also request that any restoration in excess of the required mitigation (18.2 acres) could be used as credits (34.8 acres) for a future project. Restoring Great Marsh Island is both the least cost alternative for dredged material and also provides additional acres of salt marsh restoration above the required minimum acres. Environmental Restoration benefits (National Environmental Restoration NER) will be realized with this option.

It should be noted that identifying appropriate mitigation sites can be problematic; however, in this case, the proposed site is ideal due its close proximity to the project and the fact that salt marsh historically occurred at this location. The proposed west training wall would protect the mitigation site from future erosion while supporting tidal exchange. In addition to the wall, containment of material within the mitigation site would require some type of berm along the southern side and possibly the east and west sides of the site. These containment structures would have openings to also allow for tidal exchange and provide water quality control required by permitting for dredged material placement. With proper containment and a phased, planned approach, the use of the proposed site should result in a highly successful mitigation effort. The proximity of the mitigation site would also allow for smaller, less expensive equipment to be used, i.e. a smaller dredge and less pipeline. Finally, the mitigation site at Great Marsh Island is closer than Buck Island, which would result in a substantial cost savings by reducing pumping distance of dredged material.

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

COMMENT 2: A reconstructed marsh mitigation area is being considered south of Structure 1. Two conceptual alternatives are being considered for the mitigation site: 1. - Minimal Marsh Restoration Area –18.2 Acres (Low Marsh - 16.38 acres and High Marsh - 1.82 acres); and 2. - Optimal Marsh Restoration Area, 41.4 Acres (Low Marsh – 39.58 acres and High Marsh 1.82 acres).

PROPOSED DESIGN: It is recommended that the following containment systems be evaluated for the south mitigation containment wall. The four systems are Geotubes, a water dam (Aqua-Dam), stone revetment or sand. The two mitigation alternatives will require different lengths of wall. The Minimal Marsh plan requires an approximately 1,200 LF wall. The Optimal Marsh plan requires approximately a 1,000 LF wall.

ADVANTAGES:
- Containment using a south dike structure would assure water quality compliance during dredge material placement.
- Geotubes are flexible offering an 8 to 10 year service life for erosion protection.
- Both Geotubes and water dam provides initial containment for water decanting.
- Stone containment dike offers the longest service life.
- Stone work is currently in contract scope.
- Sand/earth work is also in contract scope.

DISADVANTAGES:
- Geotubes will have a limited service life – likely 8-10 years, but should not require replacement one the marsh is established.
- Temporary water dam requires both placement and removal – one year service.
- Damage repair to Geotube and water dam systems are sometimes required from vandalism.
- Stone systems are costly for long distance transportation and on-site equipment placement.
- Higher superiority may be needed for sand berm and service length is unknown.

JUSTIFICATION: The west training wall will serve as one containment structure for either dredge material placement mitigation alternative. The mitigation site will require some type of southern containment berm feature for placement of dredge material and decanting of water from dredging fill process. It will also provide water quality control likely required by permitting for hydraulic dredging operations.

Additional functions of the containment berm may consider long term protection from erosion attack and wash out (as is the current condition) and protection of marsh plantings from storm surge. The new structure may be considered for construction using Geotubes, a water dam, stone or sand. Evaluation of flexibility should consider that the new south mitigation wall may be only an initial "one-time use" containment wall for initial dredge placement. All plans are initially placed below water surface approximately -3 feet to a final height of +5 feet.

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

Geotubes are frequently used for dredge material placement for both water decanting and extended protection of developing marsh plantings. Geotubes can have drain pipes and soil cover with planting integrated into their use. Geotubes can also be developed with low weir sections to complement the planed marsh drainage patterns shown in both mitigation plans.

The water dam alternative is considered a "one-time use" application and should be removed following dredge placement. The water dam system work well for water containment and decanting, but will require some off-set to prevent material from building up against it thereby complicating removal. Drain pipes can be placed with water dam systems. The water dam could remain in place for a full year for protection of the developing marsh plants. It would likely be a temporary dam purchase system with contractor placement with some technical support from the manufacturer. Purchase pricing for an 8 foot height is $100 per LF and for a 10 height is $250 per LF plus installation. See Aqua-Dam at the following web site:
http://www.waterstructures.com/

The stone containment berm is very traditional for marsh restoration containment features and offers tidal delivery of water to the new marsh area through the open rock structures including both north training wall and south wall. Stone is prone to be expensive for transportation and placement. The level of service may be more than is required for the south side of the medication site.

A sand berm could be used for initial dredge placement and it could be incorporated into the final native planting scheme. Drain pipes can be placed with the berm. A sand berm is likely a lower service life for Geotube and stone alternatives.

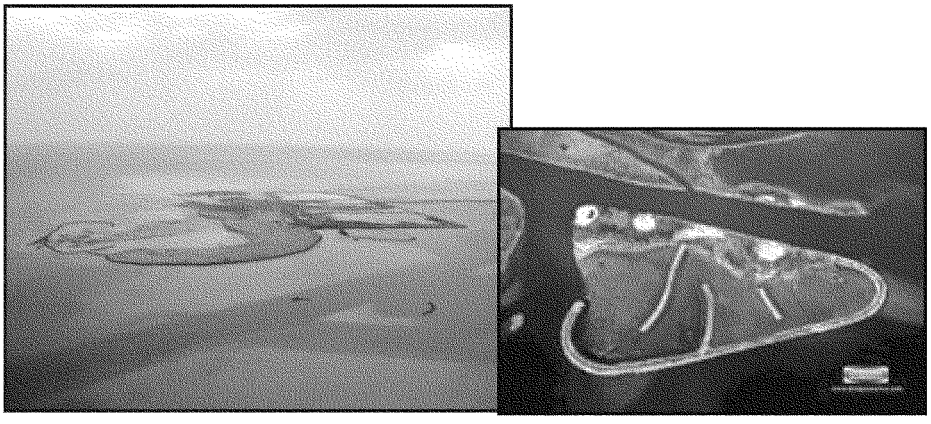
The south wall is a far less critical structure than the training wall, primarily serving during dredge placement and for early establishment of marsh grasses. The lower cost alternative may be fully satisfactory, but the longer service life for storm may be desired.

Dredge material and water decanting is considered a contractor option to achieve work within permit limitations using methods he is familiar with. Estimated cost per 1,000 LF is provided for each system:

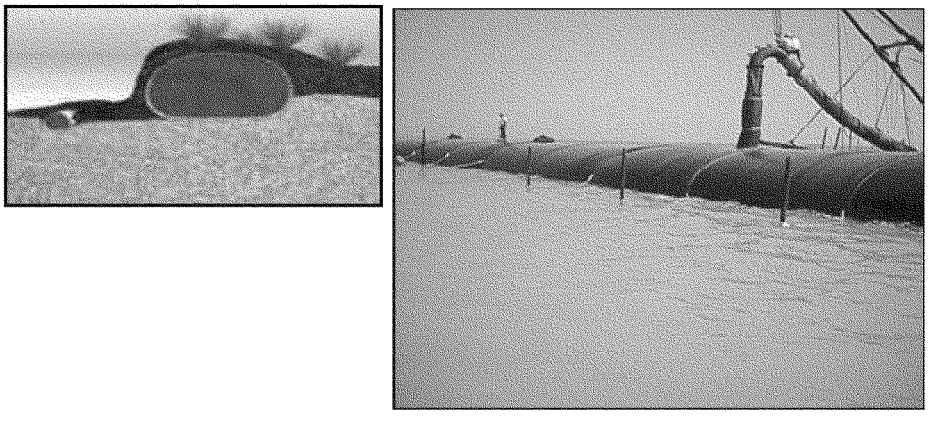
1. Geotube - $85,000
2. Water Dam (Aqua-Dam) - $135,000
3. Stone - $433,000 (Not a best buy)
4. Sand Berm - $35,000 - $50,000

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

PROPOSED MITIGATION CONTAINMENT ALTERNATIVES
(Alternative Dredge Containment Systems – Geotubes)



Island and Marsh Recreation with Geotube Containment

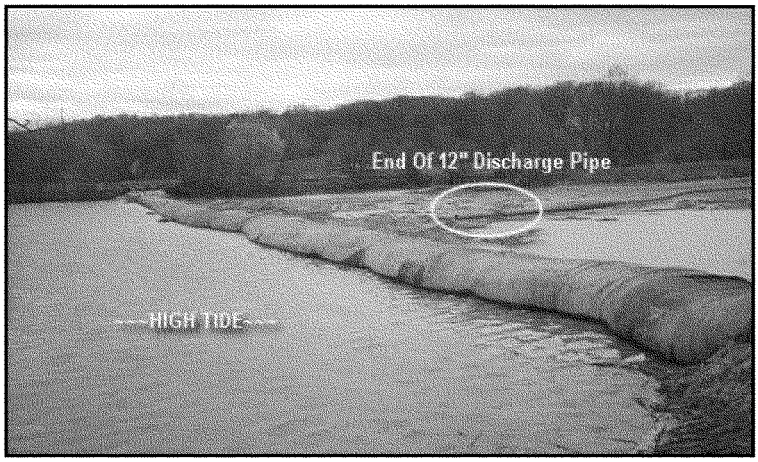


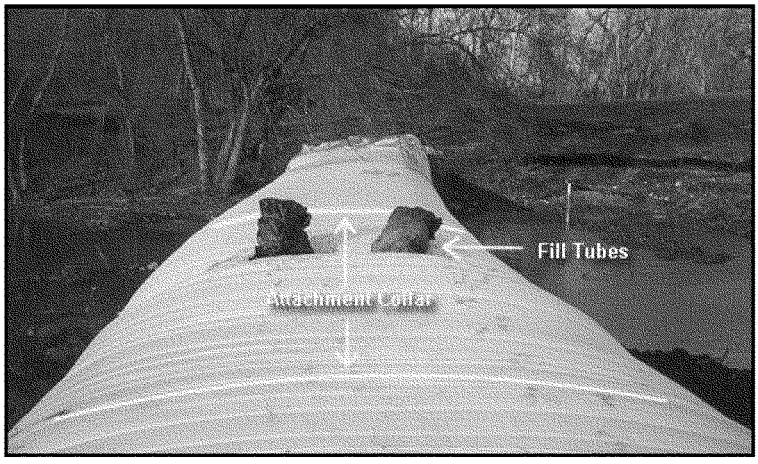
Typical Covered and Planted Section and Geotube Filling Operation

Geotube Dredge Containment Applications

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

PROPOSED MITIGATION CONTAINMENT ALTERNATIVES
(Alternative Dredge Containment Systems – Aqua-Dam)

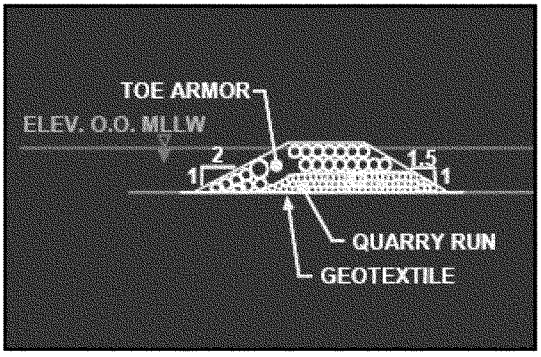




Aqua-Dam Water Containment Applications

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

PROPOSED MITIGATION CONTAINMENT ALTERNATIVES
(Alternative Dredge Containment Systems – Stone)



Typical Stone Containment Dike Section and Photos
(May be Fully Constructed from Barges or Supported by Land Equipment)

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

COMMENT 3: Alternative 3B provides relocations of reconfigured stone training walls for the west and east side of the southern IWW connection to the St. Johns River. The west training wall (Structure 1 – 4,250 LF) extends westward from Great Marsh Island and will be new filter and armor stone. The east wall (Structure 2 – 2,050 LF) will be constructed using relocated existing training wall filter and armor stone materials with new stone as needed. A reconstructed marsh mitigation area is being considered south of Structure 1.

PROPOSED DESIGN: The new S-1 west training wall is recommended to be studied for construction with Geotubes covered with geotextile and bedding stone layer, and topped with concrete armor units such as A-Jacks. The combinations of systems will be backed with overlapping geotextile filter material. The wall will serve as both the revetment and containment structure for the planned salt marsh mitigation area. The armor units will rise to EL 7.5-FT. Sufficient permeability on the upper wall will allow for tide inflow into the proposed mitigation areas south of the wall. This is recommended for analysis during PED design phase where more detailed analysis can be applied.

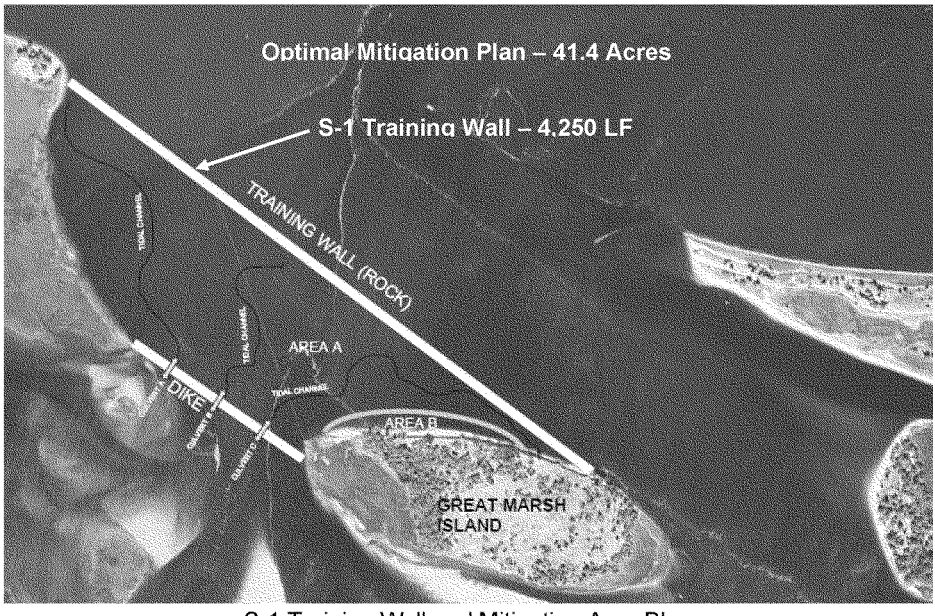
ADVANTAGES:
- Eliminates the need to transport heavy stone over long distance from the quarry source out of state.
- Interlocking nature of A-jacks will reduce instability due to scour at the toe.
- Efficient shipping on pallets would be available from close proximity to project.
- Two sets of Geotubes and 6 foot stone provide vertical height for containment for dredge material.
- The geotextiles provides dredge material containment and bedding stone provided protection of the Geotubes for placement of armor units (A-Jacks).

DISADVANTAGES:
- Construction of interlocking A-jacks below water level may be difficult.
- Bedding stone is needed for protection of geotextiles and Geotubes.

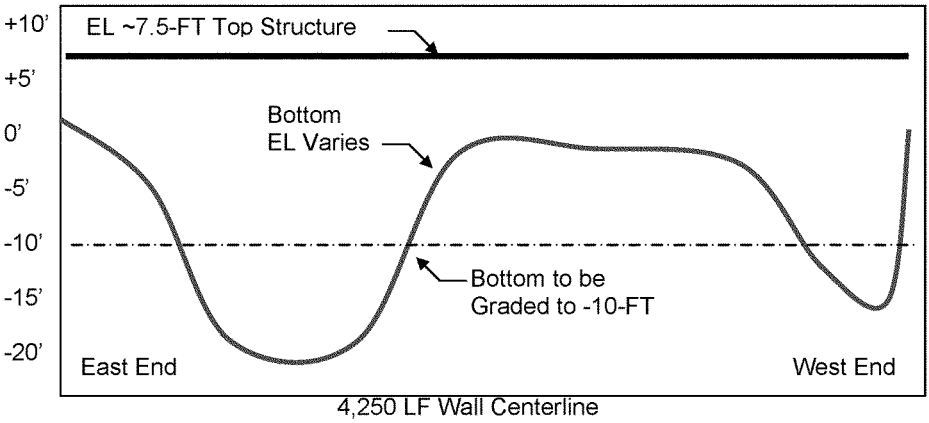
JUSTIFICATION: New filter, bedding and jetty stone will likely come from a middle or north Georgia source and likely will be shipped by rail. Total new stone quantities for Structure 1 are estimated as 18,400 CY for filter stone and 36,900 CY for armor stone. The armor unit wall will can be constructed of factory manufactured units that are shipped on pallets that minimizes shipping volume and distance. Each layered system supports another – A-Jacks stabilize wall, bedding stone protects Geotubes, Geotubes support stone and fill, and geotextile scour and filter materials contains fill material. The proposed wall will have inherent permeability that should allow tidal exchange from the mitigation marsh area, but prevent pulling of marsh area soils out through the rock wall. The concept was developed to a limited stage for material quantity take-off and pricing for the VE study. A limited service life was applied for 50 years with full replacement. It is not recommended as the feature cost basis for initial plan authorization. It is however recommended for analysis during PED design phase where more detailed analysis can be applied.

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

PROPOSED TRAINING WALL PLAN AND PROFILE



S-1 Training Wall and Mitigation Area Plan

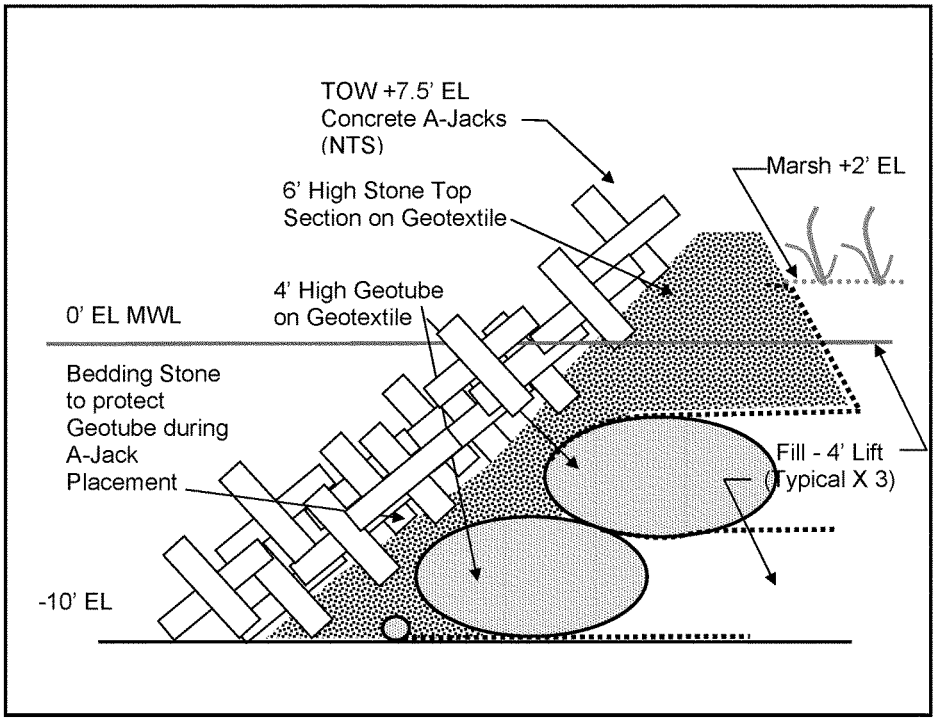


4,250 LF Wall Centerline
S-1 Profile

VALUE ENGINEERING COMMENTS

COMMENTS ON VALUE ENGINEERING SESSION IDEAS

CONCEPTUAL CROSS SECTION OF NEW S-1 WALL



VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

COST ESTIMATE WORKSHEET

COMMENT 2 DESCRIPTION: Develop A-Jacks, Geotube and Stone Training Wall System

DELETIONS

ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
S-1 Filter Stone	CY	18,400	$183	$3,359,288
S-1 Armor Stone	CY	36,900	$436	$16,099,101
Filter Fabric	SY	34,556	$3.82	$132,004
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
		Total Deletions		$19,590,393

ADDITIONS

ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
Concrete Armor Unit	EA	188,160	$31.24	$5,877,366
Armor Unit Transportation	EA	188,160	$1.82	$342,846
Geotube embankments	LF	8,500	$65.21	$554,285
Geotextile	SF	310,500	$3.82	$1,186,110
Bedding/Filter Stone	CY	26,000	$182.57	$4,746,820
Replaced Year 50 - Present Worth 4.7/8%	LS	1	$1,176,000	$1,176,000
				$0
				$0
				$0
				$0
				$0
				$0
		Total Additions		$13,883,427
	Net Cost Decrease/Increase			$5,706,966
*	Mark-ups	0.00%		$0
	Total Cost Decrease/Increase			$5,706,966

* Mark-ups: Gen. Contractor Mark-up - (Field Office/Home Office/Profit/Bond); PED, Con Mgt; Contingencies included in unit prices

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

COMMENT 4: The current plan for Alternative 3B provides relocations of reconfigured stone training walls for the west and east side of the southern IWW connection to the St. Johns River. The west training wall (Structure 1 – 4,250 LF) will be new filter and armor stone. The east wall (Structure 2 – 2,050 LF) will be constructed using the relocated existing training wall filter and armor stone materials. A reconstructed marsh mitigation area is being considered south of Structure 1.

PROPOSED DESIGN: The new S-1 west training wall is recommended to be developed to be constructed with a steel sheet pile wall with inflow windows and augmented with a filter stone. The wall will serve as both the training wall and containment structure for the planned salt marsh mitigation area. The sheet pile will be driven to grade (~EL +6.5-FT) for placement of a concrete cap (TOW EL 7.5-FT) and every other sheet will be driven lower to approximately EL -1-FT for tide inflow into the proposed mitigation areas south of the wall.

ADVANTAGES:
- Reduces the class and amount of stone required and related transportation from remote stone sources
- Provides a faster construction method using a core sheet pile wall modified for water delivery into redeveloped marsh area.
- Sheet pile wall may be full depth cantilevered or be shortened using a tie-back system.

DISADVANTAGES:
- Steel sheet pile may be limited to approximately a 50-year service life for the Mile Point application.
- If a wall tie-back system is required, the fill placement may require phasing before full fill placement is made.

JUSTIFICATION: New filter, bedding and jetty stone will likely come form a middle or north Georgia source and will likely be shipped by rail. Total new stone quantities for Structure 1 are estimated as 18,400 CY for filter stone and 36,900 CY for armor stone. Structure 2 will approximately use all 14,600 CY of stone from the existing training wall structure. If a shortfall is identified the sheet pile concept can be developed and integrated with stone to complete Structure 2. The proposed sheet pile wall will be developed with alternating full height sheet and lowered sheets to allow tidal inflow into the mitigation marsh area. Modeling can optimize the number of windows needed. A concrete cap and toe stone is assumed for further stability of the wall. The lower gaps will be filled with a filter stone to permit incoming water, but prevent pulling of marsh areas soils back through the windows. The windows are assumed to be set at elevation -1- to +4-FT or 5-FT height by 2-FT in width. Windows can be analyzed for desired elevations and widths. Epoxy coating is assumed to provide 4 coats on both sides. A PZC-18 (24.2 #/SF replaces the old PZ-27 section) sheet size is assumed.

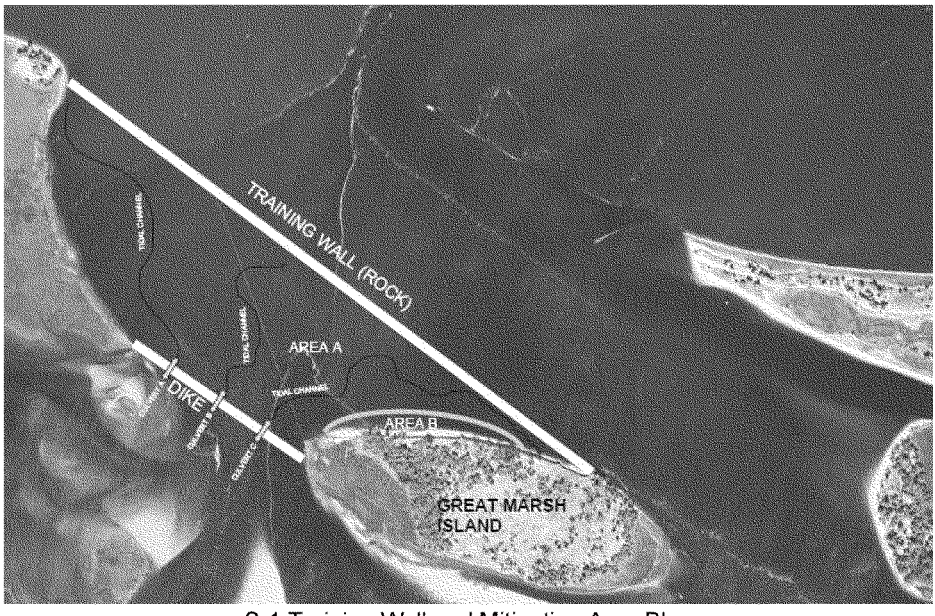
VALUE ENGINEERING COMMENTS

COMMENTS ON VALUE ENGINEERING SESSION IDEAS

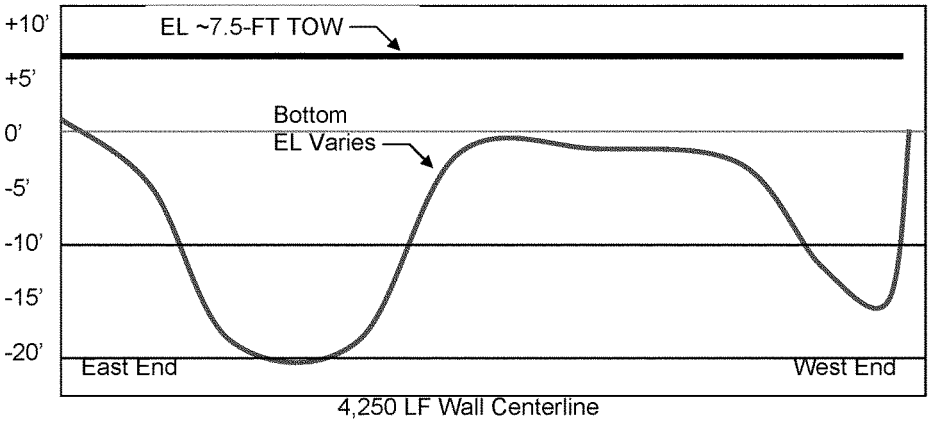
The concept was developed to a limited stage for material quantity take-off and pricing for the VE study. A limited service life was applied for 50 years with full replacement. It is not recommended as the feature cost basis for initial plan authorization. It is however recommended for analysis during PED design phase where more detailed analysis can be applied.

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

CURRENT TRAINING WALL PLAN AND PROFILE



S-1 Training Wall and Mitigation Area Plan

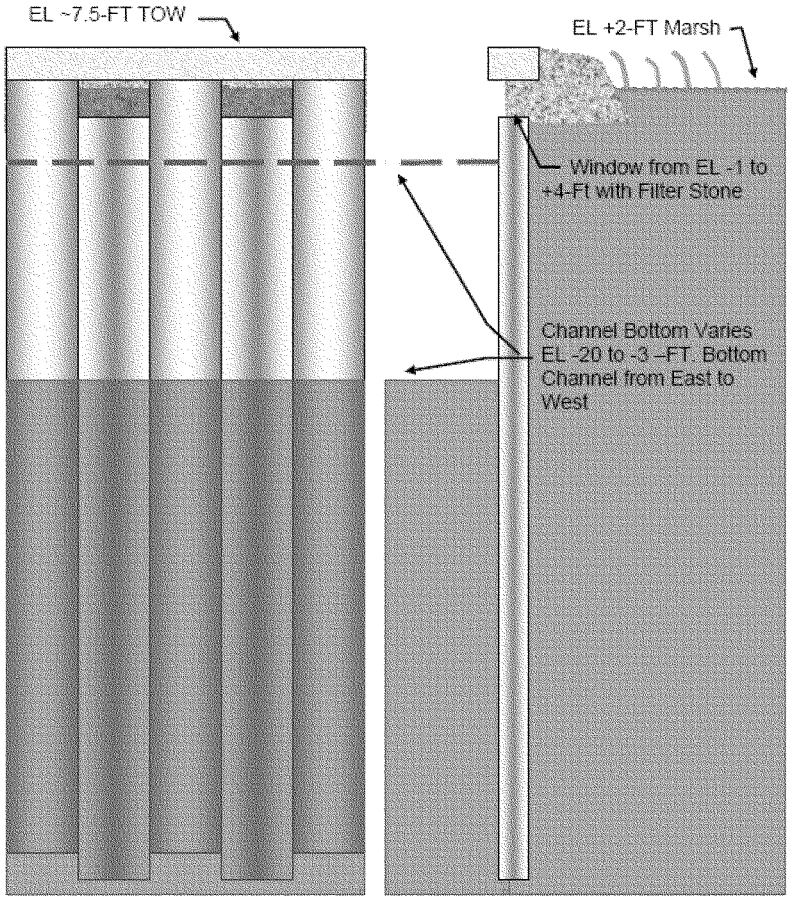


4,250 LF Wall Centerline
S-1 Profile

VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

PROPOSED TRAINING WALL

Sheet Pile Wall Elevation and Cross-Section



VALUE ENGINEERING COMMENTS
COMMENTS ON VALUE ENGINEERING SESSION IDEAS

COST ESTIMATE WORKSHEET

PROPOSAL DESCRIPTION: Develop Steel Sheet Pile Training Wall System

DELETIONS

ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
S-1 Filter Stone	CY	18,400	$183	$3,359,288
S-1 Armor Stone	CY	36,900	$436	$16,099,101
Filter Fabric	SY	34,556	$3.82	$132,004
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
		Total Deletions		$19,590,393

ADDITIONS

ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
S-1 Sheet Pile (PZC-18 - 35' to 47' deep)	LF	4,250	$4,179	$17,760,368
Wailer/Tie-back/Toe & Filter Stone/Conc Cap				$0
Replaced Year 50 - Present Worth 4.7/8%	LS	1	$1,644,000	$1,644,000
				$0
				$0
				$0
				$0
				$0
				$0
				$0
				$0
		Total Additions		$19,404,368
	Net Cost Decrease/Increase			$186,025
*	Mark-ups	0.00%		$0
	Total Cost Decrease/Increase			$186,025

* Mark-ups: Gen. Contractor Mark-up - (Field Office/Home Office/Profit/Bond); PED, Con Mgt; Contingencies included in unit prices

SUPPORTING DOCUMENTS

CONTACT DIRECTORY

VALUE ENGINEERING TEAM STUDY

APPENDIX A: CONTACT DIRECTORY & VE STUDY TEAM MEMBERS

CONTACT NAME	ORGANIZATION	TELEPHONE NUMBER
Steve Ross,	SAJ-DP-C	904-232-1363
Richard Powell,	SAJ-PD-PN	904-232-1694
Paul Stodola,	SAJ-PD-EA	904-232-3271
Samantha Borer,	SAJ-PD-PN	904-232-1066
Steve Conger,	SAJ-EN-DW	904-232-1601
Brian Blake,	SAJ-EN-C	904-232-1003
Stephen Myers,	SAJ-EN-GG	904-232-3914
Brian Cornwell,	SAJ-EN-WM	904-232-2915
Jason Spinning,	SAJ-DP-C	904-232-1231
Fred McAuley,	SAJ-EN-T	904-232-1903

SPECULATION LIST

VALUE ENGINEERING TEAM STUDY
APPENDIX B: SPECULATION LIST

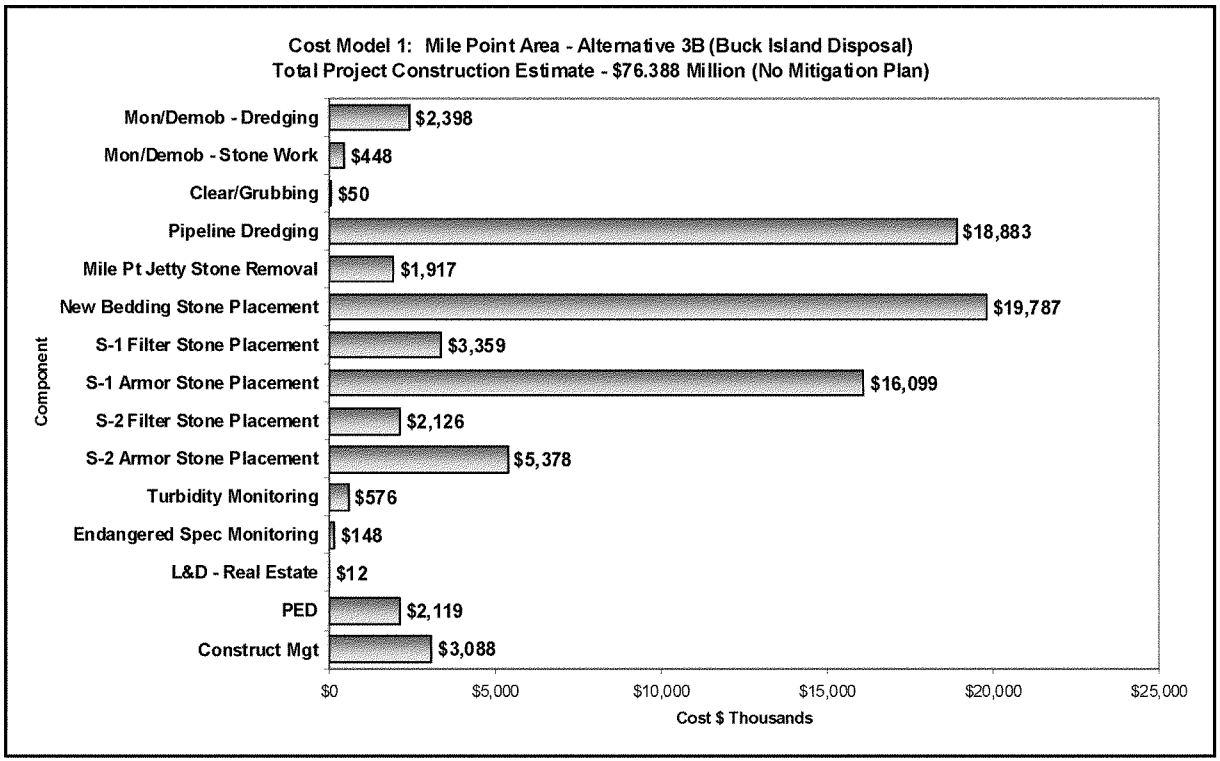
Speculation List for Mile Point Navigational Improvements - Plan Alternative 3B (Relocate Training Wall)			
No.	DescriptionActions: D = Develop; X = Deleted; C = Comment; BD = Done	Action	Assigned
1	Alternative wall systems - sheetpile, concrete Core-lok, Dolos	C	FM/ SM
2	Develop optimal training wall section - scour toe and delete 25 Ac bedding stone	C	BC/SC
3	Remove training wall rock in future for reuse (Alt 2)	X	
4	Sheetpile with rock toe	X	
5	Composite sheet pile	X	
6	Revisit need for 25 acres of stone - reduce to minimal required	D	BC, SC
7	Use articulated concrete mat for erosion protection (Commercial or MVD systems)	D	FM
8	Reduce southern length western leg of training wall at GMI (Design phase)	C	SC
9	Endorse 40 acre mitigation alternative (+ close disposal; + equipment)	D	SC/PS
10	Develop required mitigation up to 40 acres with options for cells and future completion (Match excavation/fill)	See 9	"
11	Use overdepth as material source as needed	See 9	"
12	Reuse rock Hellen Cooper-Floyd Park (if Alternative 2)	X	
13	Material source options to include Chicopit Bay	C	SC
14	Explore containment berm alternatives for mitigation site	See 15,16, 20	FM
15	Use water dam or rock for containment berm	See 14	FM
16	Use dredge sand for containment berm	See 14	FM
17	Identify 40 acre vs. 25 acre mitigation alternative as a lift	C	PS
18	Procurement alternatives supported include small business, use of best value RFP or IFB	C	BB/FM
19	Consider reduced depth 16' vs. 14' vs. 12'	D	BC/SC
20	Consider geotubes - minimal or maximum life	See 14	FM
21	Use natural openings for culverts for mitigation feature	C	FM
22	Planting by contract or natural	C	PS
23	If mitigation borrow is needed use high ground on Great Marsh Island (eliminate exotics)	C	PS
24	Use existing 8 acre seed source for reseeding new mitigation area	C	PS
25	Develop east side as mitigation area	X	
26	Alternate 3B - No disposal at Buck Island (See Mayport, dig dry material first - Design refinement - balance excavation to mitigation fill)	D	PS/SC/BB
27	Look to lower rock spec for the western wall (lower risk exposure)	X	SM
28	Reuse existing training wall rock for east wall	BD	SM/BC
29	Fill existing S-2 low areas to minimize rock quantities	D	SC
30			

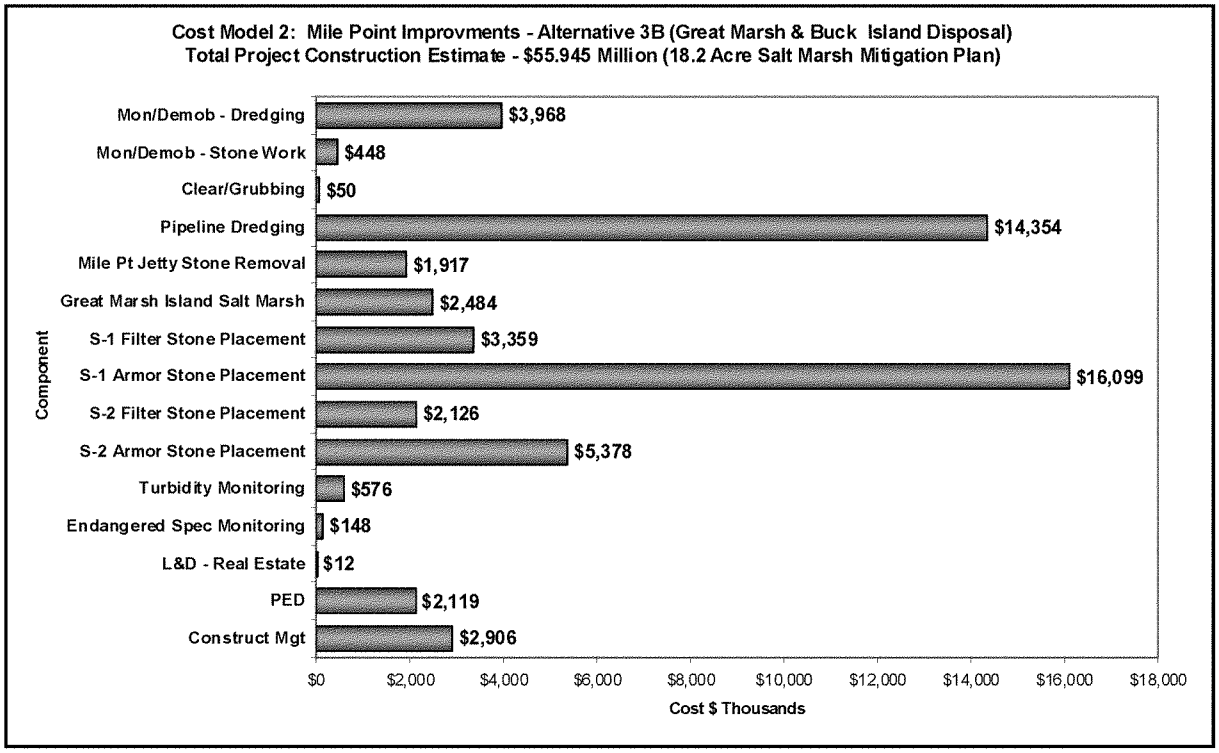
COST MODEL

Cost Model 1: Mile Point Alternative 3B (No Mitigation Plan)

Cost Model 2: Mile Point Alternative 3B (18.2 Acre Mitigation Plan)

Cost Model 3: Mile Point Alternative VE-3B (53 Acre Mitigation Plan)


Cost Model 1: Mile Point Area - Alternative 3B (Buck Island Disposal)
Total Project Construction Estimate - $76.388 Million (No Mitigation Plan)
Component
Mon/Demob - Dredging
$2,398
Mon/Demob - Stone Work
$448
Clear/Grubbing
$50
Pipeline Dredging
$18,883
Mile Pt Jetty Stone Removal
$1,917
New Bedding Stone Placement
$19,787
S-1 Filter Stone Placement
$3,359
S-1 Armor Stone Placement
$16,099
S-2 Filter Stone Placement
$2,126
S-2 Armor Stone Placement
$5,378
Turbidity Monitoring
$576
Endangered Spec Monitoring
$148
L&D - Real Estate
$12
PED
$2,119
Construct Mgt
$3,088
$0
$5,000
$10,000
$15,000
$20,000
$25,000
Cost $ Thousands


Cost Model 2: Mile Point Improvments - Alternative 3B (Great Marsh & Buck Island Disposal)
Total Project Construction Estimate - $55.945 Million (18.2 Acre Salt Marsh Mitigation Plan)
Component
Mon/Demob - Dredging
$3,968
Mon/Demob - Stone Work
$448
Clear/Grubbing
$50
Pipeline Dredging
$14,354
Mile Pt Jetty Stone Removal
$1,917
Great Marsh Island Salt Marsh
$2,484
S-1 Filter Stone Placement
$3,359
S-1 Armor Stone Placement
$16,099
S-2 Filter Stone Placement
$2,126
S-2 Armor Stone Placement
$5,378
Turbidity Monitoring
$576
Endangered Spec Monitoring
$148
L&D - Real Estate
$12
PED
$2,119
Construct Mgt
$2,906
$0
$2,000
$4,000
$6,000
$8,000
$10,000
$12,000
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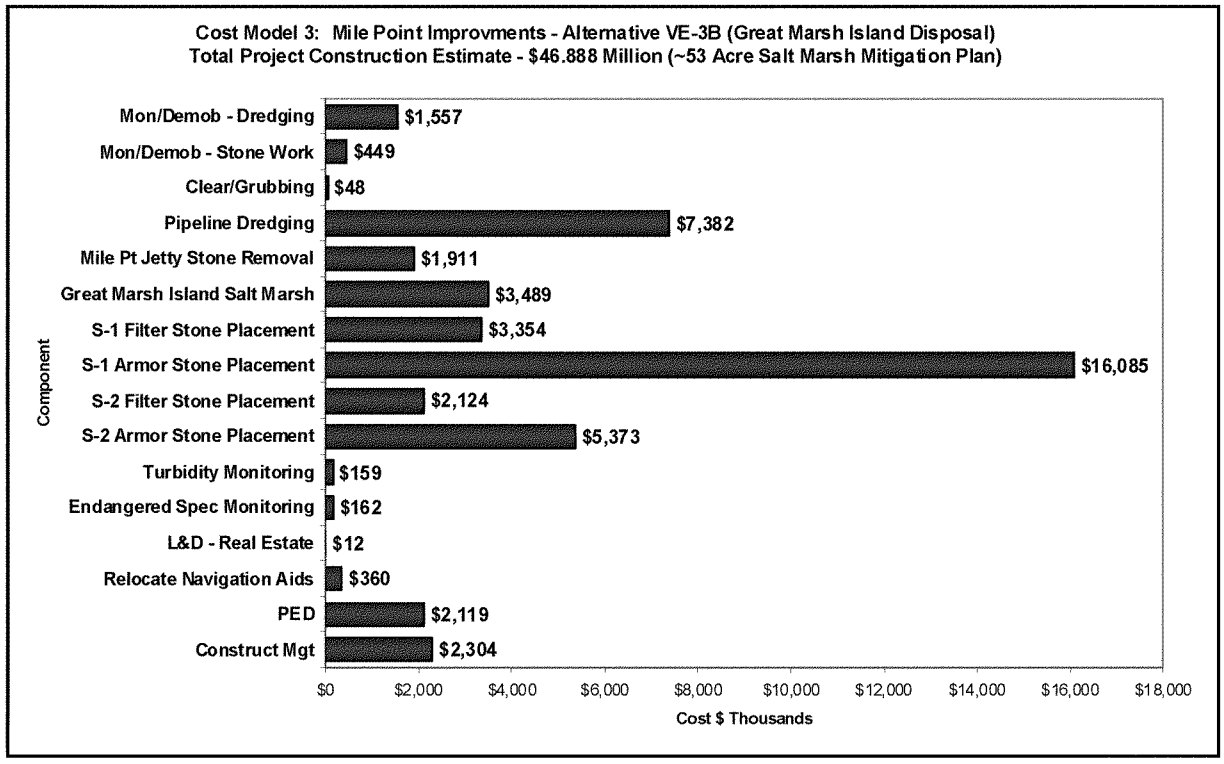
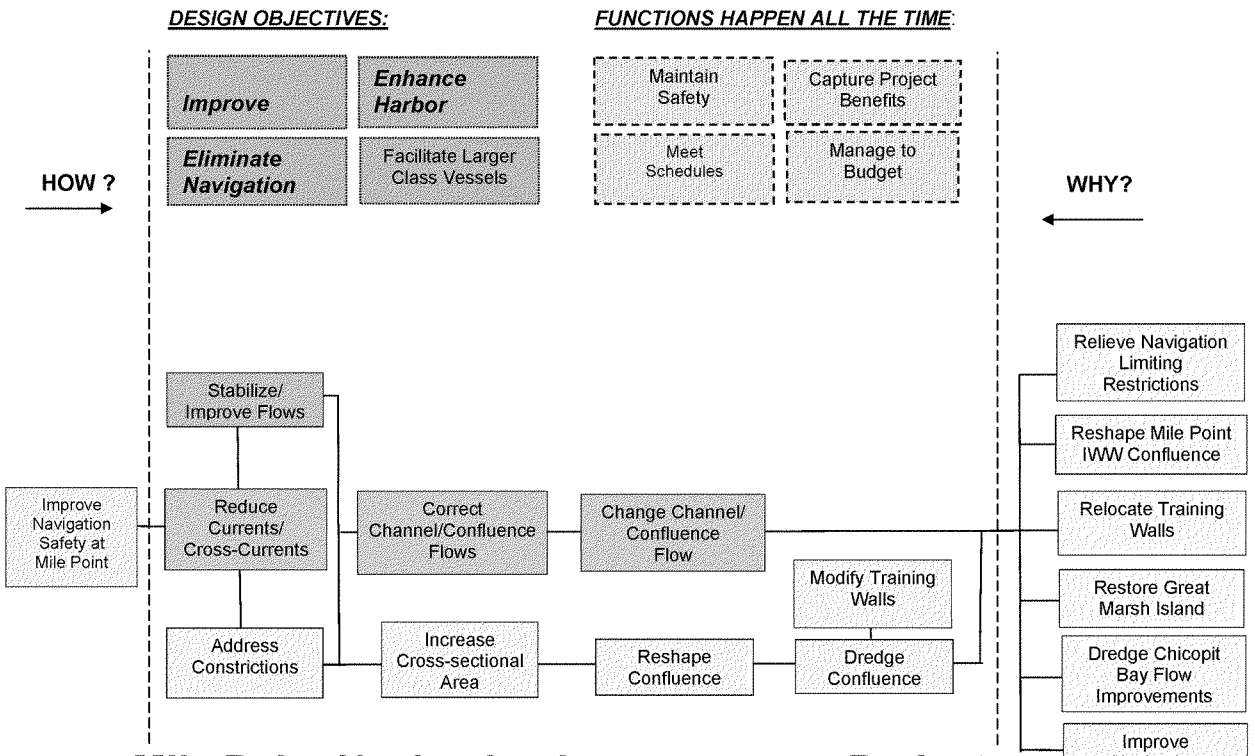
$16,000
$18,000
Cost $ Thousands


Cost Model 3: Mile Point Improvments - Alternative VE-3B (Great Marsh Island Disposal)
Total Project Construction Estimate - $46.888 Million (~53 Acre Salt Marsh Mitigation Plan)
Component
Mon/Demob - Dredging
$1,557
Mon/Demob - Stone Work
$449
Clear/Grubbing
$48
Pipeline Dredging
$7,382
Mile Pt Jetty Stone Removal
$1,911
Great Marsh Island Salt Marsh
$3,489
S-1 Filter Stone Placement
$3,354
S-1 Armor Stone Placement
$16,085
S-2 Filter Stone Placement
$2,124
S-2 Armor Stone Placement
$5,373
Turbidity Monitoring
$159
Endangered Spec Monitoring
$162
L&D - Real Estate
$12
Relocate Navigation Aids
$360
PED
$2,119
Construct Mgt
$2,304
$0
$2,000
$4,000
$6,000
$8,000
$10,000
$12,000
$14,000
$16,000
$18,000
Cost $ Thousands

FUNCTION ANALYSIS SYSTEM TECHNIQUE (FAST) DIAGRAM

x



Mile Point Navigation Improvements Project

FUNCTION ANALYSIS SYSTEM TECHNIQUE (FAST DIAGRAM)

U.S. ARMY CORPS OF ENGINEERS

U.S. ARMY CORPS OF ENGINEERS,
JACKSONVILLE DISTRICT
ATTACHMENT F - VE STUDY FY'11

VALUE ENGINEERING STUDY REPORT

113114 Mile Point Improvements Feasibility Study Value Engineering Proposal Using Concrete Structural Units for West Training Wall

Jacksonville - Duval County, Florida

Sponsored By: Jacksonville Port Authority and U.S. Army Engineering District, Jacksonville

January 2011

VALUE ENGINEERING TEAM STUDY

DOD SERVICE: USACE **VALUE ENGINEERING OFFICER:** Fred McAuley
CONTROL NO: CE-SAJ-VE-2011-002C

Value Engineering Study Report

113114 Mile Point Improvements Feasibility Study Value Engineering Proposal Using Concrete Structural Units for the West Training Wall

Jacksonville – Duval County, Florida

January 2011

STUDY SPONSOR: JaxPort & USACE, Jacksonville District

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ER 11-1-321 24 January 2011

113114 Mile Point Improvements Feasibility Study
Value Engineering Proposal Using Concrete Structural Units
for the West Training Wall
Jacksonville, Florida

INTRODUCTION: The Mile Point Improvements Feasibility Study recommends navigation safety improvements to remove existing navigation restrictions by modifications to the southern confluence point of the St. Johns River Federal Channel and the Intracoastal Waterway by deepening and widening this area. Modifications will also include reconfiguring and relocating the Mile Point Training walls. The East Training Wall will reuse existing armor stone being excavated from the current training wall, and West Training Wall will require approximately 70,000 tons new armor stone at a first cost of approximately $18 million. Total armor and filter stone for both training wall structures is estimated to cost approximately $29 million. This cost for stone materials represents approximately 58% of the cost for the pending recommended plan.

Due to concerns for the cost of the recommended Mile Point improvements, a second alternative West Training Wall system was conceptually identified and developed for cost estimating using stacked Geotubes to replace the West Training Wall stone structure. The East Training Wall was to continue using existing recovered stone. While initial cost reductions were identified, concerns about reliability, repair and replacement were also recognized. It was therefore desired to further identify and develop a more sustainable lower maintenance alternative system with less frequent repair and replacement.

The PDT met on 18 November 2011 to discuss and identify other possible alternative solutions. A Value Engineering Proposal (VEP) introducing a West Training Wall conceptual configuration using Concrete Structural Units (CSU) system was identified by the District Project Development Team (PDT). The third alternative has been developed for consideration and incorporation into the Mile Point Improvements Feasibility Study. The following Table provides a summary of three alternative plans under consideration and the associated cost for construction, O&M and PED:

Alternative West Training Wall	Construction Cost Estimate	Relative Wall O&M Cost Estimate (PW)	PED Cost	Total Project Cost *
1. Stone Wall	$47,375,000	$0	$2,841,000	$50,216,000
2. Geotube Wall	$25,705,000	$6,986,000	$1,200,000	$33,891,000
3. Concrete Structural Unit Wall	$28,896,000	$0	$1,200,000	$30,096,000

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Using Concrete Structural Units for the West Training Wall

These estimates reflect quantities and estimated unit costs through December 2010. Both Construction and forecasted PED estimated costs are under coordination and refinement through February-March 2011. One equal cost modification item is the additional localized fill in deep areas of the West Training Wall foundation using geotubes and/or geobags. This cost remains under development and applies equally to each alternative plan. Also, updated cost estimates will reflect Sources Sought input for alternatives structural systems, and the NED Plan Cost Schedule Risk Analysis (CSRA), in order to obtain a revised Cost Center of Expertise Project Cost Certification. This Risk Assessment will establish applied contingency using Concrete Structural Units. See Value Engineering Cost Estimates shown as Figures 9A through

CURRENT PROJECT CONCEPTS: Alternative 1, the initial Draft Feasibility Study Final NED Plan featured a combination of bedding and armor stone for the 4,250 LF wall. See the Mile Point Area Plan and West Training Wall Section shown in Figures 1 and 2. This stone training wall system was estimated at $22,391,000. The estimated construction and PED cost for the Mile Point Improvements Project totals $50,216,000 with this system.

Alternative 2, an alternative West Training Wall for the Mile Point Improvements Feasibility Study was developed to identify potential reductions in project cost. The alternative featured stacked Geotubes to replace the West Training Wall stone structure. The Geotube alternative training wall section, using three large-diameter stacked Geotubes, would serve as the initial dredge disposal containment system and secondarily as shoreline erosion protection along the nearly 4,000 FT closed gap between the current existing Great Marsh Island land features shown in Figure 3. The stacked Geotubes are placed with two Geotubes as a foundation (Placed on a scour apron) supporting a third top Geotube to achieve the elevation of +7.5 FT (+2.5 FT above MHW).

The original project plan also used single layer of Geotubes along the south side of the new marsh mitigation area. With this alternative, Geotubes are to be placed on both sides of the marsh restoration area with smaller Geotubes remaining on the south side. The 16-Inch dredging plant forecasted to be used for the project is complimentary for Geotube placement. Both Geotube applications will have a second fabric cover added to the top of the Geotube for extended UV protection. The corresponding ROM for the Geotube West Training Wall estimate is $1,642,000, and is based on a barebones Geotube configuration with no additional protection applications such as stone or earth fill on the riverside. A minor adjustment for the south Geotube was also included in the cost update using the most current Geotube assembly and unit costs.

113114 Mile Point Improvements Feasibility Study Value Engineering Proposal
Using Concrete Structural Units for the West Training Wall

The total estimated initial construction and PED cost for the Mile Point Improvements Project totals $26,905,000 with a Geotube system.

Risk evaluation for the three alternatives identified the riverside as being more critical and complicated with the stacked large-diameter Geotubes. A series of applicable risk exposure conditions were developed for life cycle cost estimating. Basic risks include UV degradation, vandalism and damage from debris and navigation impact exposure. It is assumed the geotubes would require a repair/replacement action on a five year cycle. It is considered that this would be coordinated with future O&M dredging cycles and the initial contract costs for the O&M project would fund equipment mobilization and dredging of maintenance material. A minor cost ($7.50/CY above normal O&M dredge unit costs) would be applied to the Geotube restoration for dredge material placement (31,078 CY) to Mile Point for Geotube filling. The two upper and front Geotubes are at greater risk for damage and fatigue, although the bottom Geotube could also fail due to load stresses, damage from debris and potential exposure to navigation impact.

To identify potential life cycle cost, a future replacement factor was applied for replacement of the west training wall Geotubes at a five year period. The five year frequency was selected based on potential stress and damage failure and it also matched planned O&M dredge cycles in the project area. Total cost for each five year period replacement cycle is estimated as $1,952,000. See the Life Cycle Cost Costs Calculations in Figure 8. The Geotube repair and replacement activities for a 50 year service period are estimated as $6,986,000 in Present Worth dollars. The First Cost for the Geotube training wall is $1,642,000, plus $6,986,000 in PW O&M costs totals $8,628,000. The total PW estimated construction and PED cost for the Mile Point Improvements Project totals $33,891,000 with the Geotube system with O&M cost applied.

No additional annual O&M cost burden was applied as normal maintenance such as periodic inspection and vegetation control as these would be nearly equally to either stone, Geotubes, or CSU.

PROPOSED PROJECT SOLUTION: It is recommended that the project delivery team develop an Alternative 3 using a Concrete Structural Units (CSU) as alternative for the West Training Wall. The specific concrete structure will require development for project performance conditions at Mile Point. CSU's will need to provide both shoreline erosion protection and containment of dredge material placed within the Great Marsh Island salt marsh restoration area. They should also provide tidal connectivity for the salt marsh

mitigation area and plants. The performance of the CSU system could be an added environmental mitigation measurement effort to produce enhanced oyster and fish habitat and further water quality deliveries – these are not provided by Geotubes and would be more effectively provided by CSU system than natural stone.

Two options may be considered for development of the structural units for the West Training Wall. The first option would be the specific design of a structural unit for fabrication and placement by contractors. This would be developed by the design PDT during the PED phase. A second option would be the development of a clear detailed performance specification supporting development and delivery of an acceptable concrete training wall structural unit by plan holders. Typically this would provide an existing system, or structural unit, and would require documentation for performance and experience with placement in similar applications as Mile Point. To help the PDT identify potential existing systems, a Sources Sought Solicitation was issued seeking industry input for structural systems to develop a training wall feature for the Mile Point Navigation Improvements project. This Request for Information (RFI) remains open through early March 2011. The purpose of the request for information is to gather industry-wide feedback on alternative materials and systems that have been developed and used for coastal and river structures similar to the currently presented stone training wall structure. It is intended that with industry input providing various alternative structures, this will preclude approval for sole source procurement for single system or structural unit.

One response to the RFI was submitted by Living Shoreline Solutions, Inc. The Wave Attenuation Device System (WADS), developed by Living Shoreline Solutions, is recommended for review as a high performance and long term structural concrete system as an alternative to the Geotube and natural stone training wall systems. The WADS system has been identified as an effective shoreline erosion protection system with excellent performance in a wave energy regime. Recent regional projects include a 2004 WADS application for mitigation of storm damage to Saw Grass Point Salt Marsh, on Dauphine Island, Alabama, which was supported by the National Sea Grant College Program by NOAA. This application proved to be cost effective, as well as successful with delivery of erosion protection and sustaining of salt marsh, bird, fish and oyster habitat within the Mobile Bay estuary. With over 13 years of research & development and Peer Reviewed technologies with proven project success rates that are well documented.

Furthermore, the ph neutral marine concrete WADS structure provides a hard surface for potential oyster habitat. Approximately 20 oysters per square foot can be expected for submerged portions of the structures. This corresponds to approximately 1 million oysters for the West Training Wall. This level of performance should be also achievable with a new CSU unit. The WADS structures are hollow cast concrete with triangular windows that invites fish population of the structures both inside and nearby for nesting and refuge from predators. This further adds to the environmental interest for the project. The engineering performance and enhanced environmental deliveries can be studied for wider applications for other Jacksonville District coastal and navigation projects.

Information on Living Shorelines Solutions WADS units is provided in Figures 4, 5A and 5B, and is shown for background on the WADS use in a similar application. The West Training Wall is assumed to require a single row of opposing triangular structures placed at approximately elevation -2-FT for the full 4,250 LF of wall. The units would be approximately 9.5-FT high and each base side would be 15-FT. A total 567 units would be required. Some additional grading fill work is recommended to limit the final height of the units to 9.5-FT. A stone bedding layer placed over a geotextile fabric is provided for the foundation.

A modified structure may be adapted from the Reefball system, a well established concrete structure typically used for artificial reef and in mitigation deliveries of broad marine habitats. It is currently moving more into shoreline erosion protection in both bay and coastal applications. A specially designed 40 FT by 6.6 FT Reefball mat system is under development for use with the Miami-Dade Shoreline Demonstration project scheduled for placement this FY. The Reef Ball Foundation is a non-profit organization that functions as an international environmental protection and recovery of reef systems through coral rescue, propagation and transplant operations, mitigation projects, mangrove restorations and nursery development. Reef Ball also participates in education and outreach regarding environmental stewardship and coral reefs.
The Reef Ball Foundation now operates all aspects of the business as a non-profit organization. By 2007, the foundation has deployed 550,000 reef balls worldwide in over 70 countries. A response to the Sources Sought request is expected to be submitted by Reef Innovations, the regional commercial manufacturer and point of contact for Reefball structures.

Information on Reefball systems is provided in Figures 6 and 7. The West Training Wall is assumed to require a double row of Reefball structures placed at approximately elevation -2-FT for the full 4,250 LF of wall. The wall would require approximately 802

units if placed on a diagonal or 1,133 units is placed parallel with the shoreline. Selection of the alignment will depend on unit performance and modeling. Some additional grading fill work is recommended to limit the final height of the units to 9.5-FT. A stone bedding layer placed over a geotextile fabric is provided for the foundation.

The project will be constructed through a general contractor with the CSU's or other structures as a performance specification item of work. The input for site specific design requirements of the CSU units would be by the PDT. If selected by the general contractor, the design of the alternative structural units would be included in the procurement action by the licensed dealer of any selected patented technology. The site specific design of other types of units would be by the contractor.

Estimated cost for the CSU alternative for the West Training Wall is $4,937,000. This cost can further be refined during PED phase with broader project team participation and support by others with existing structural systems identified for possible use on the Mile Point project. For the present, the Life Cycle Cost for the CSU training wall is considered to be equal to the Stone Training Wall and are not further developed because future Life Cycle Costs for repair and replacement only applies to the Geotube system.

JUSTIFICATION: In summary, this recommended Concrete Structure Unit (CSU) or the selected commercial training wall structure should prove to be both cost effective and it provides the reliability for an 80- to 100-year training wall. It provides better tidal exchange to marsh area, and adds oyster and fish habitat over the other systems. Structural units can be casted near the project area and barged for placement on the prepared foundation described. The units to be used on both ends can also be reduced with change in existing elevations at both existing land features of Great Marsh Island. This could use reduced unit heights of approximately 5-FT over these portions of the training wall.

By design, the CSU or other viable system will be uniquely configured to remain stable in moderate to high wave energy environments. Wave energy attenuation can be delivered for desired project performance conditions. The near proximity of the Mile Point project site offers opportunities to easily monitor both environmental and technical performance of the training wall and marsh restoration. The data and lessons learned will have broad applications to coastal and navigation project district-wide. Identifying the use of the CSU system as an environmental and technical monitoring study effort along with the expected performance with an actual project should help justify

replacement alternatives using stone on other coastal and river navigation projects. Unlike some pilot projects with a limited period of performance, Mile Point will remain in service delivering benefits for many years.

Both periods of service and price comparisons for the three training wall alternatives is revealing. The stone training wall is the most expensive of the three alternatives by a significant measure. The original plan using stone, estimated as $50,216,000, can be reduced to $26,905,000 using a Geotube training wall system, initially with project first cost avoidance of $23,311,000. The Geotube alternative represents a barebones containment alternative for placement of all dredge materials from the Mile Point Improvements Project. It assumes future repair and replacement would fall within O&M program coverage for the next 50 years. The Geotube alternative cost avoidance is reduced to $16,325,000 when Present Worth costs for future repair and replacement cycles (estimated as $6,986,000) is applied.

The estimated cost for the Mile Point Improvements Project using the CSU or acceptable commercial structure for the West Training Wall feature is $30,096,000. This estimate is based on the December scope, materials and quantities and may represent an approximately 90% level of accuracy. The PDT will continue developing detailed costs through March 2011. Each of the three alternatives may be assumed to have the same level of accuracy. Adding approximately 10% would result with the following estimated costs:

1. Stone Wall -- $50.216 million to $55.234 million (No significant O&M cost risk).
2. Geotube Wall: -- $33.891 million ($25.705 million, plus $6.986 million PW O&M) to $37.280 million.
3. Concrete Structural Unit Wall -- $30.096 million to $33.106 million (No significant O&M cost risk).

Compared to the stone training wall alternative, approximately $20,120,000 can be reduced from the stone training wall with use of the CSU system. The CSU alternative has an initial first cost increase of $3,191,000 when compared to the Geotube training wall alternative; however, adjustments for future Geotube repair and replacement results in a reduced or net cost decrease for the WADS system of $3,795,000. Therefore, the CSU training wall will result in a minor initial cost while delivering a lower life cycle cost. It has a broader habitat delivery than either the stone or Geotube. It has the possibility of broad application to regional coastal and navigation projects and placement with the Mile Point Project can help Jacksonville District realize more sustainable efficiencies and environmental effectiveness for many projects.

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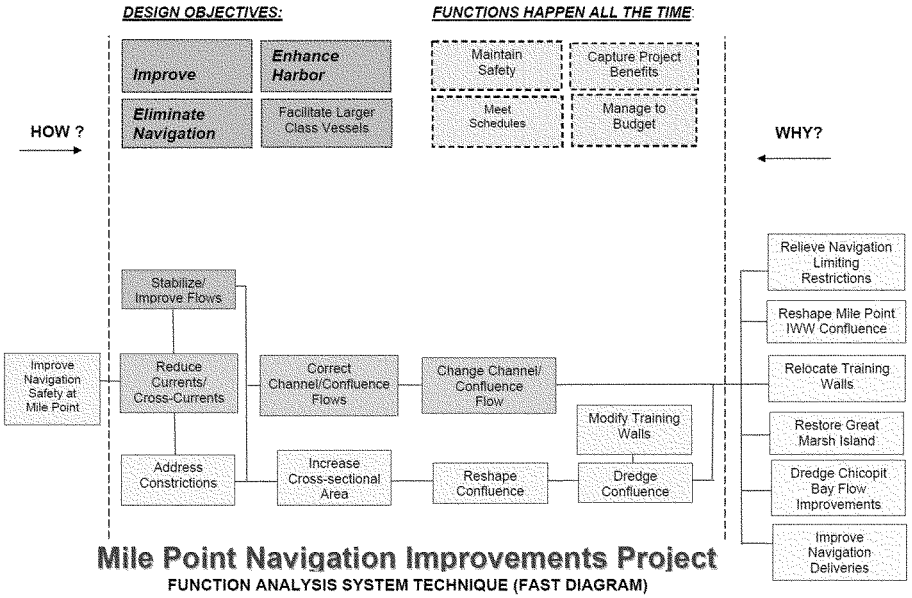
Using Concrete Structural Units for the West Training Wall

West Training Wall Value Engineering Function Analysis Lists
(Verb-Noun Functions)

Primary Functions:	Secondary Functions:
Improve Navigation Safety	Resolve Navigation Restrictions
Open Confluence Constrictions	Dredge/Wider/Deeper Confluence
Reestablish River Shoreline	Backfill Great Marsh Island Breach
Reconnect Great Marsh Island	Contain Dredge Material
Establish Salt Marsh Mitigation Area	Protect Salt Marsh Remediation
Prevent Shoreline Erosion	Deliver Tidal Exchange to Marsh
Deliver Safe Navigation	Eliminate Navigation Restrictions

Mile Point Navigation Improvements Project FAST Diagram



113114 Mile Point Improvements Feasibility Study Value Engineering Proposal
Using Concrete Structural Units for the West Training Wall

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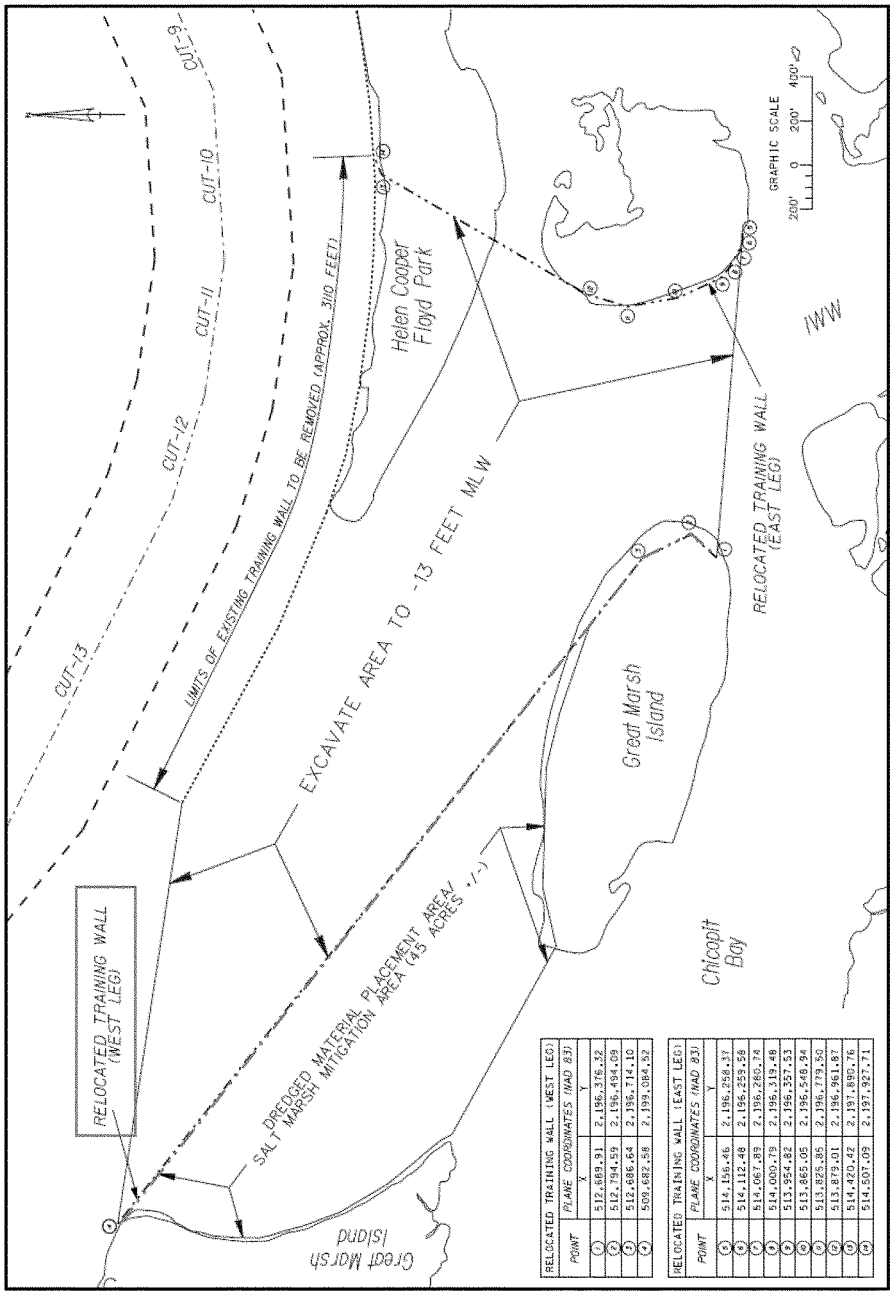
FIGURE 1: MILE POINT AREA PLAN WITH 4,250 LF WEST TRAINING WALL



RELOCATED TRAINING WALL (WEST LEG)		
POINT	PLANE COORDINATES (NAD 83)	
	X	Y
⊙	512,869.91	2,196,376.32
⊙	512,794.59	2,196,494.09
⊙	512,686.64	2,196,714.10
⊙	509,682.58	2,199,084.52

RELOCATED TRAINING WALL (EAST LEG)		
POINT	PLANE COORDINATES (NAD 83)	
	X	Y
⊙	514,156.46	2,196,258.37
⊙	514,112.48	2,196,259.58
⊙	514,067.89	2,196,280.74
⊙	514,000.79	2,196,319.48
⊙	513,954.82	2,196,357.53
⊙	513,865.06	2,196,548.94
⊙	513,825.86	2,196,779.50
⊙	513,879.01	2,196,961.87
⊙	514,420.42	2,197,890.76
⊙	514,507.09	2,197,927.71

FIGURE 2: MILE POINT WEST TRAINING WALL SECTION

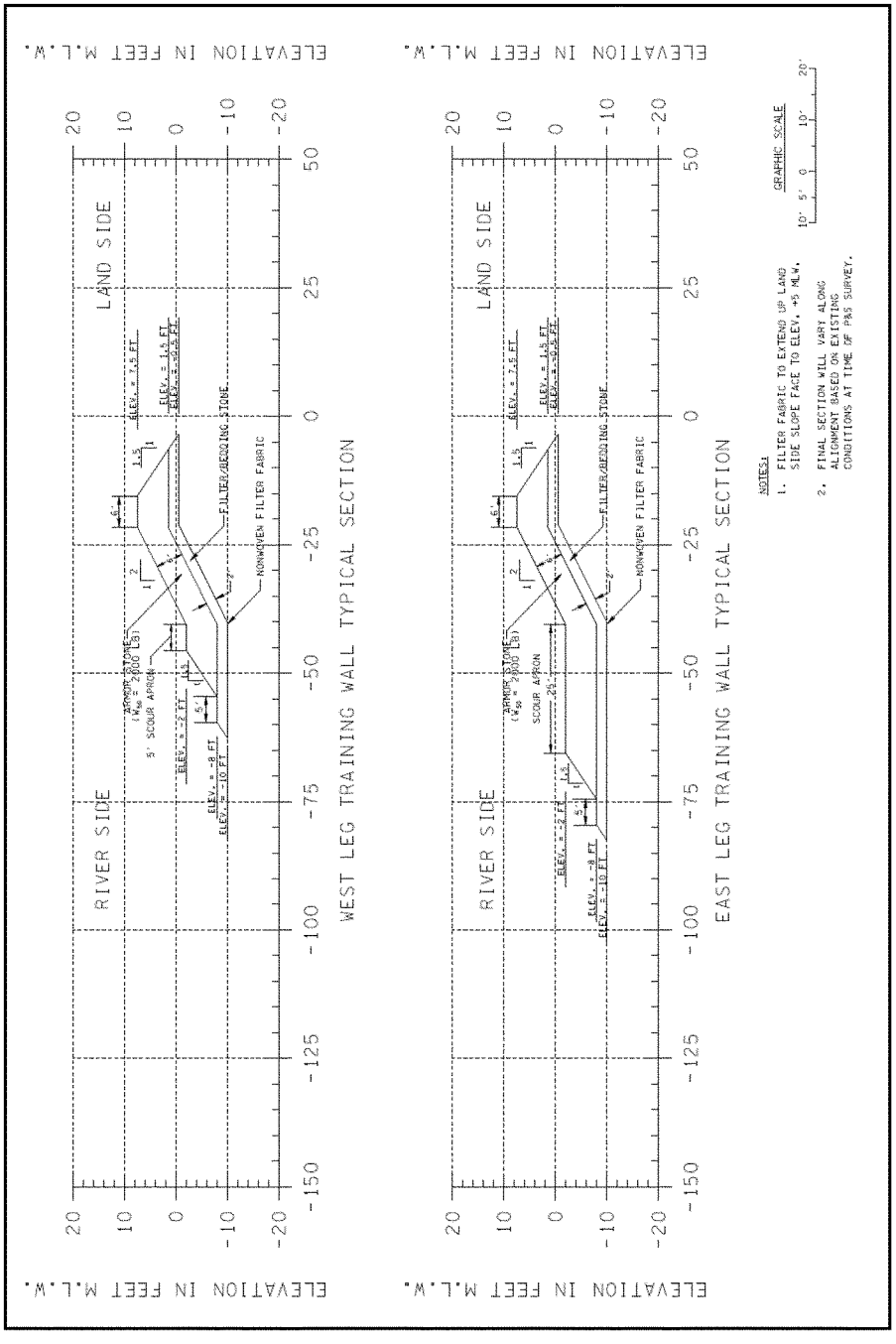


FIGURE 3: ALTERNATIVE MILE POINT WEST TRAINING WALL SECTION (APPROXIMATELY ~12-FT HIGH GEOTUBE SECTION)

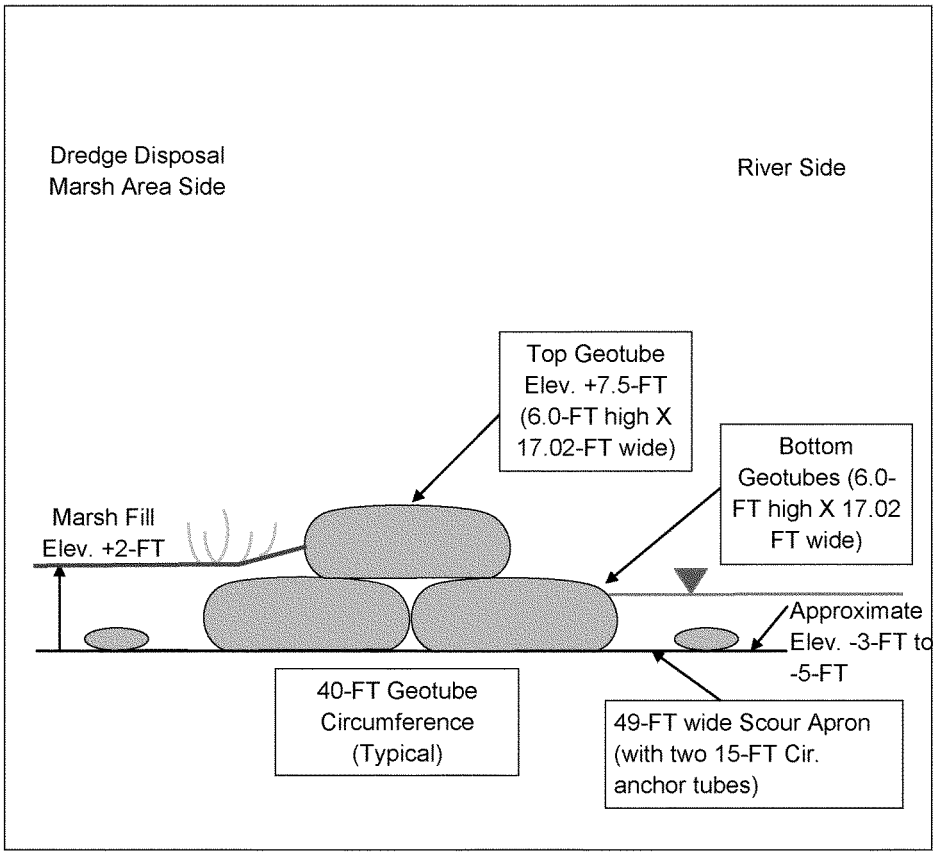


FIGURE 4: MILE POINT WEST TRAINING WALL WAVE ATTENUATION DEVICE SECTION (APPROXIMATELY 9.5-FT HIGH WAD STRUCTURE SECTION)

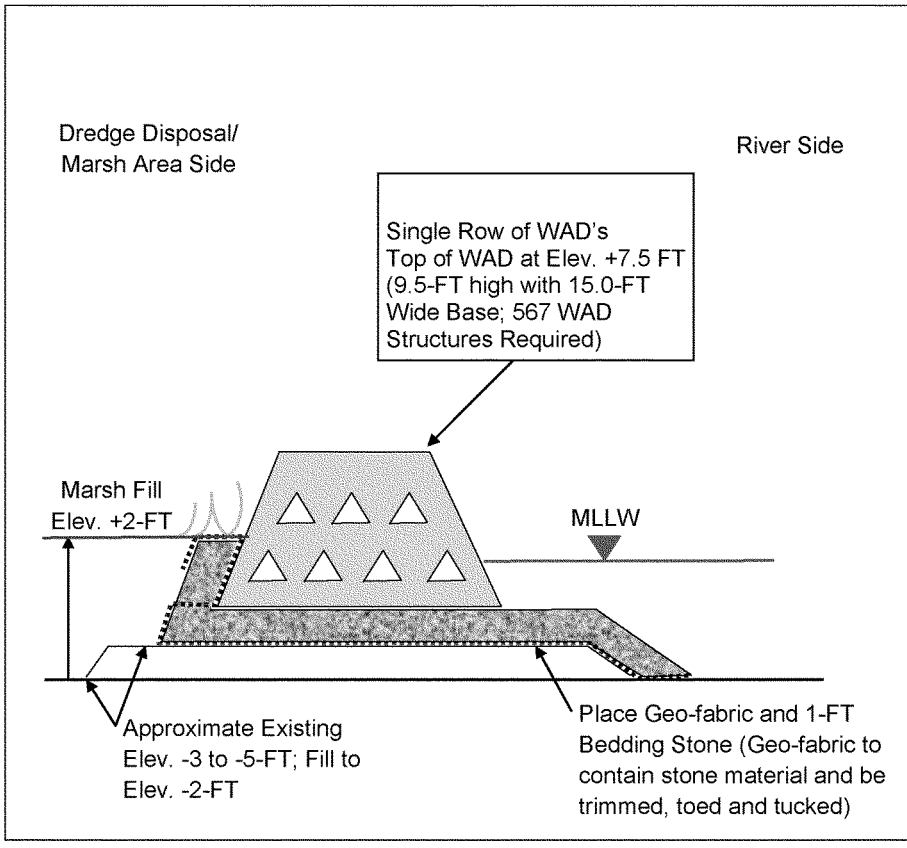
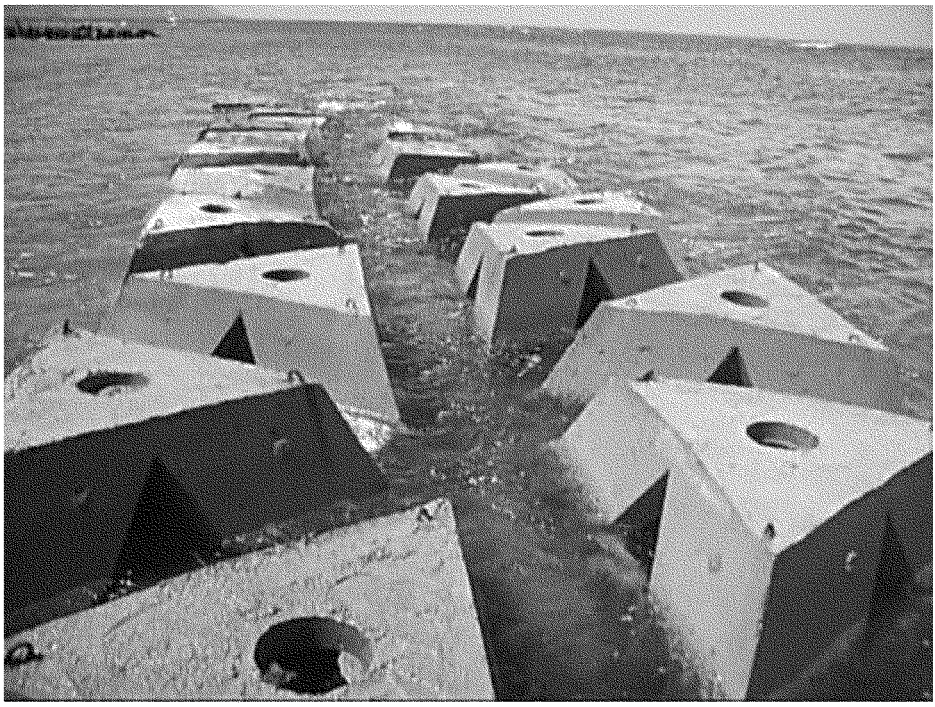


FIGURE 5A: EXAMPLE FOR SHORELINE PROTECTION WITH A HIGH ENERGY DOUBLE ROW WAVE BREAK WAVE ATTENUATION DEVICE APPLICATION (Living Shoreline Solutions, Inc.)



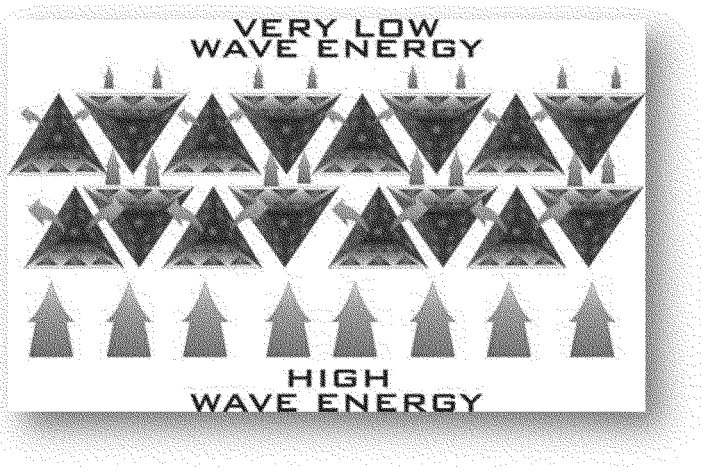


FIGURE 5B:EXAMPLE FOR SHORELINE PROTECTION AND FILL CONTAINMENT WITH WAD AND GEOTEXTILE FABRIC
(Gulf Breeze, Florida – 2007)

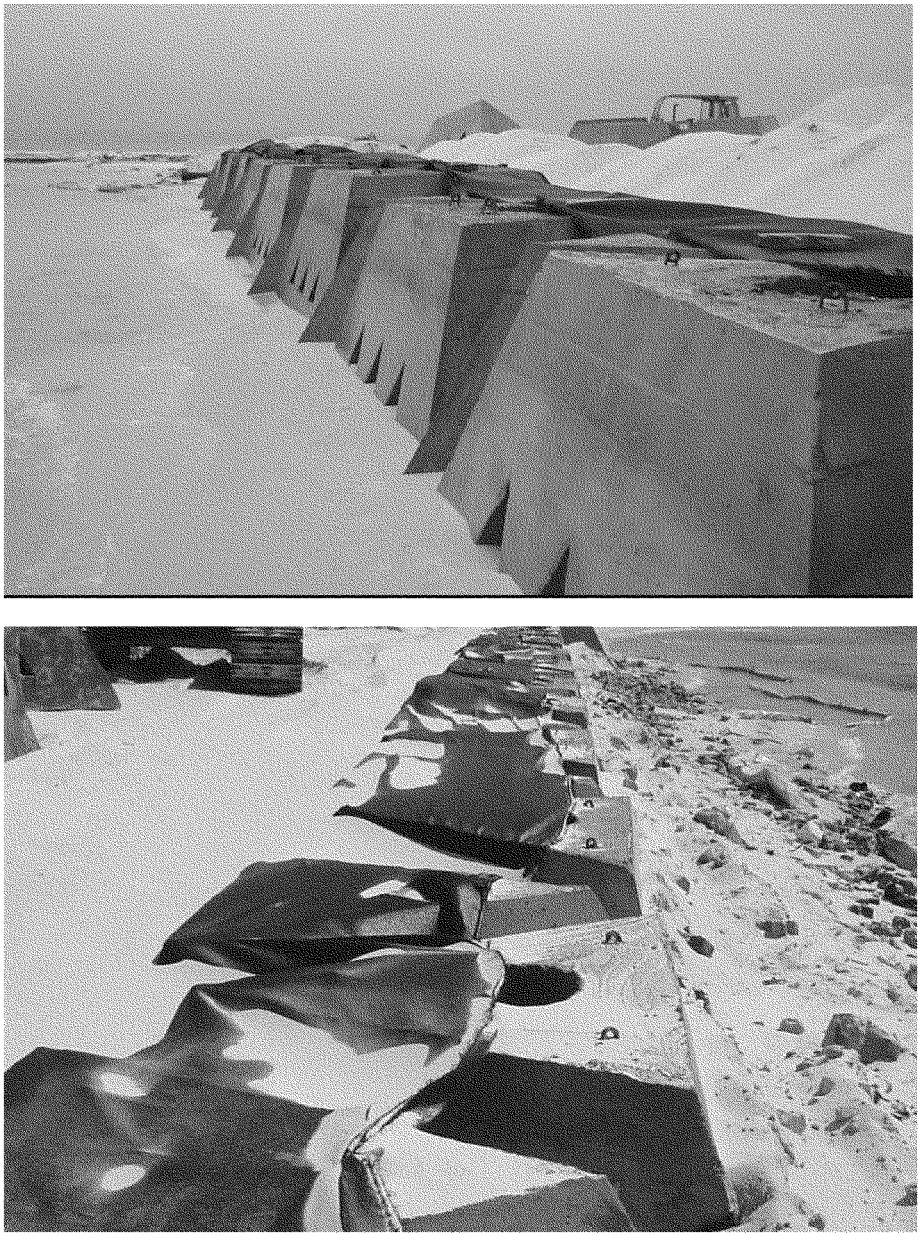


FIGURE 6: MILE POINT WEST TRAINING WALL REEFBALL STRUCTURAL UNIT SECTION (APPROXIMATELY ~9.5-FT HIGH RSU SECTION)

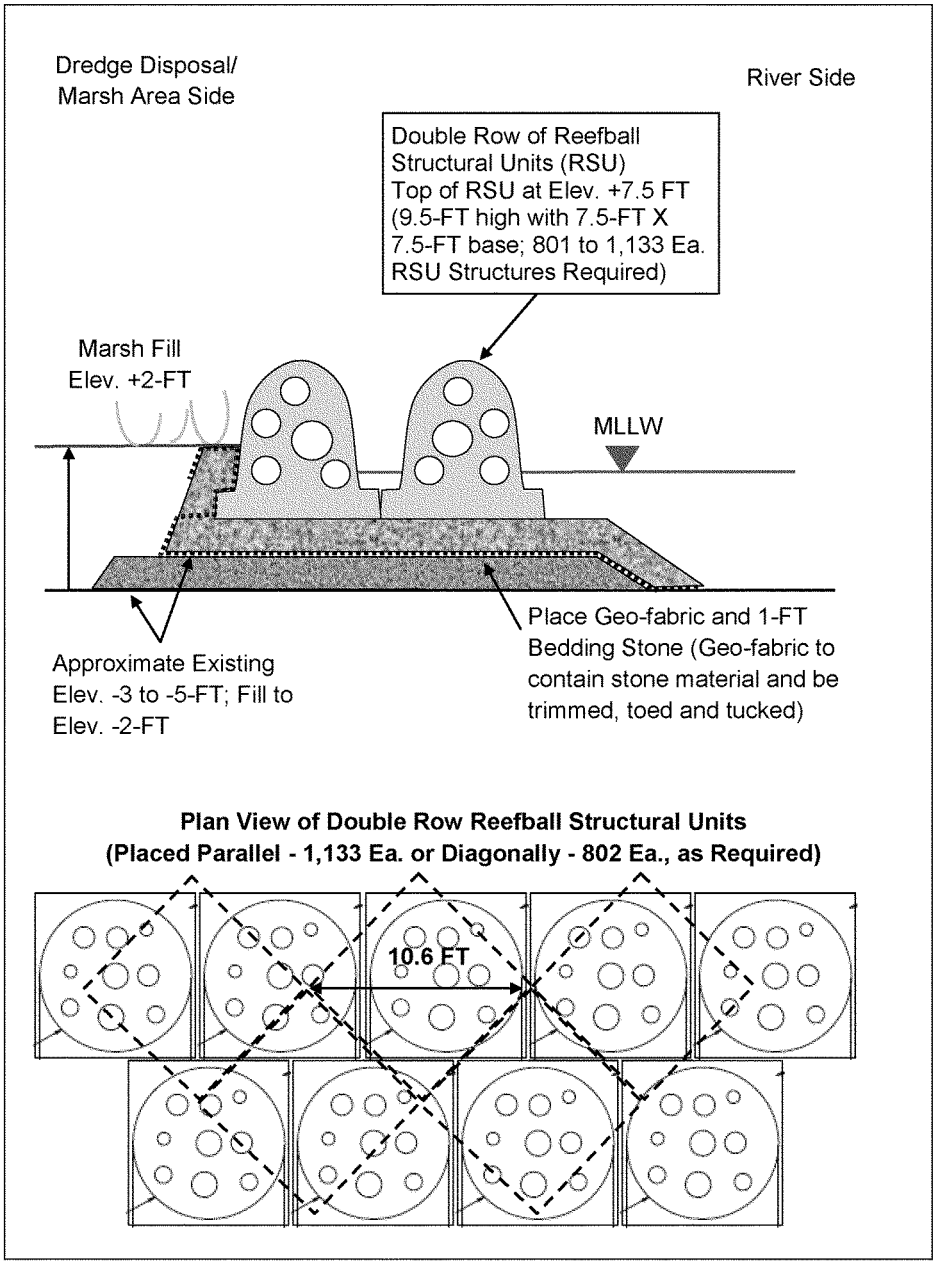


FIGURE 7: EXAMPLE FOR MILE POINT WEST TRAINING WALL REEFBALL STRUCTURAL UNIT SECTION APPLICATION (http://www.reefball.org/)

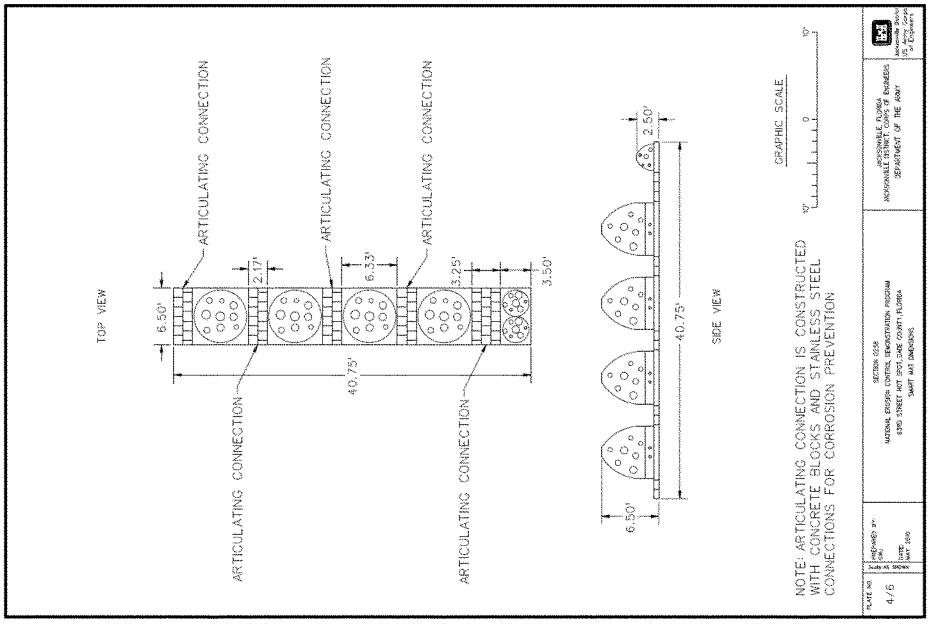


FIGURE 8: LIFE CYCLE COST COSTS CALCULATIONS

LIFE CYCLE COST ESTIMATE WORKSHEET

Alternative West Training Wall Analysis for Mile Point Improvements Feasibility Study

Alternative 1: ***West Training Wall with Stone System vs. Alternative 2: West Training Wall with Geotube System***

(Systems Service Life: 50-Years)

ANNUAL PERCENTAGE RATE: *4.375%*				*Original Alternative 1*		*Alternative 2*
INITIAL COST				PRESENT WORTH		PRESENT WORTH
Original Alternative 1 Capital Cost: Mile Point Project with Stone Training Wall				***$50,216,000***		
Alternative 2 Capital Costs: Mile Point Project with Geotube Training Wall						***$26,905,000***
SUBTOTAL				***$50,216,000***		***$26,905,000***
(Given: i = 4.375%)		PRESENT				
SINGLE	YEAR	WORTH		PRESENT		PRESENT
EXPENDITURE		FACTOR	ESTIMATE	WORTH	ESTIMATE	WORTH
Replace Geotube	***5***	***0.80727***	***$0***	***$0***	***$1,952,174***	***$1,575,927***
Replace Geotube	***10***	***0.65168***	***$0***	***$0***	***$1,952,174***	***$1,272,195***
Replace Geotube	***15***	***0.52608***	***$0***	***$0***	***$1,952,174***	***$1,027,002***
Replace Geotube	***20***	***0.42469***	***$0***	***$0***	***$1,952,174***	***$829,065***
Replace Geotube	***25***	***0.34284***	***$0***	***$0***	***$1,952,174***	***$669,278***
Replace Geotube	***30***	***0.27676***	***$0***	***$0***	***$1,952,174***	***$540,286***
Replace Geotube	***35***	***0.22342***	***$0***	***$0***	***$1,952,174***	***$436,156***
Replace Geotube	***40***	***0.18036***	***$0***	***$0***	***$1,952,174***	***$352,094***
Replace Geotube	***45***	***0.14560***	***$0***	***$0***	***$1,952,174***	***$284,234***
	50	***0.11754***	***$0***	***$0***	***$0***	***$0***
SALVAGE VALUE	***0***	***0***	***$0***	***$0***	***$0***	***$0***
SUBTOTAL				***$0***		***$6,986,236***
(Given: i = 4.375%)		UNIT PMT				
ANNUAL	YEAR	PW		PRESENT		PRESENT
EXPENDITURE		FACTOR	ESTIMATE	WORTH	ESTIMATE	WORTH
	25	***15.02087***	***$0***	***$0***	***$0***	***$0***
	50	***20.17058***	***$0***	***$0***	***$0***	***$0***
	75	***21.93609***	***$0***	***$0***	***$0***	***$0***
	100	***22.54137***	***$0***	***$0***	***$0***	***$0***
SUBTOTAL				***$0***		***$0***
TOTAL PRESENT WORTH				***$50,216,000***		***$33,891,000***
TOTAL LIFE CYCLE SAVINGS				***-$16,325,000***		***$16,325,000***

Annual O&M reflects annual cost. Future major maintenance/replacement are identified as Single Expenditure and is not

Alternative West Training Wall Analysis for Mile Point Improvements Feasibility Study

Operation and Maintenance Forecast

Original Alternative 1 Capital Cost: Mile Point Project with Stone Training Wall

No.	Replacement Activity/Action	Unit	Unit Cost	Quantity	Total
1					$0
2					$0
3	Total				$0

Alternative 2 Capital Costs: Mile Point Project with Geotube Training Wall

No.	Replacement Activity/Action*	Unit	Unit Cost	Quantity	Total
1	Repair/replace geotubes	LF	$386.21	4,250	$1,641,393
2	Dredge material for geotubes	CY	$7.50	41,438	$310,781
3	Total				$1,952,174

NOTES: Federal discount rate for FY 2010 is 4.375% for 50-years.

Repair/replacement of 100% of Geotubes each five years.

Geotube Fill Volume = 3.25 CY/LF X 3 Geotubes X 4,250 LF = 41,437.5 CY

FIGURE 9A: COSTS ESTIMATES

COST ESTIMATE WORKSHEET

PROPOSAL DESCRIPTION: Alternative 1 - Mile Point Navigation Improvement Projects with West Training Wall with Stone System vs. Alternative 2 - West Training Wall with Geotube System

DELETIONS - Alternative 1

	ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
1	Mob/Demob - Prep Work	LS	1	$2,239,548.00	$2,239,548
2	Pipeline Dredging	LS	1	$5,625,459.00	$5,625,459
3	Mile Pt Jetty Stone Removal	LS	1	$1,957,059.00	$1,957,059
4	Stone Structures	LS	1	$30,575,059.00	$30,575,059
5	Turbidity Monitoring	LS	1	$275,103.00	$275,103
6	Endangered Spec Monitoring	LS	1	$169,615.00	$169,615
7	L&D - Real Estate	LS	1	$72,000.00	$72,000
8	Great Marsh Island Salt Marsh	LS	1	$3,729,421.00	$3,729,421
9	Relocate Navigation Aids	LS	1	$378,000.00	$378,000
10	PED	LS	1	$2,841,490.00	$2,841,490
11	Construction Mgt	LS	1	$2,352,915.00	$2,352,915
12					$0
13					$0
14					$0
15					$0
16					$0
			Total Deletions		$50,215,669

ADDITIONS - Alternative 2

	ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
1	Mob/Demob - Pipeline Dredging	LS	1	$1,683,000.00	$1,683,000
2	Mile Pt Training Wall Mob/Demob	LS	1	$503,000.00	$503,000
3	Mile Pt Training Wall Relocation	LS	1	$1,295,000.00	$1,295,000
4	Mile Pt Training Wall Disposal	LS	1	$615,000.00	$615,000
5	Mile Pt Training Wall Extension	LS	1	$8,318,000.00	$8,318,000
6	Chicopit Bay Channel Dredging	LS	1	$266,000.00	$266,000
7	IWW Dredging & Disposal	LS	1	$4,156,000.00	$4,156,000
8	Great Marsh Island Geotube Containment	LS	1	$2,731,000.00	$2,731,000
9	Construction Environmental Monitoring	Mo	6.80	$63,970.59	$435,000
10	L&D - Real Estate	LS	1	$72,000.00	$72,000
11	Relocate Navigation Aids	LS	1	$369,000.00	$369,000
12	Great Marsh Island Salt Marsh Mitigation	I	1	$3,662,000.00	$3,662,000
13	PED	LS	1	$1,200,000.00	$1,200,000
14	Construction Mgt	LS	1	$1,600,000.00	$1,600,000
15					$0
			Total Additions		$26,905,000
	Alternate 2	Net Cost Savings			$23,310,669
	*	Mark-ups	0.00%		$0
	Alternate 2	Total Cost Savings (Minus O&M PW)			$16,324,433
	Alternate 2	Present Worth (O&M Replacement)			$6,986,236
	Alternate 2	Total First Cost, Plus O&M (PW)			$33,891,236

Mark-ups: Gen. Contractor Mark-up - Included in Unit Prices (Field Office/Home Office/Profit/Bond);

* Contingencies - 26.0% are included in Unit Prices.

** Repair/replacement of 100% of Geotubes each five years.

FIGURE 9B: COSTS ESTIMATES

COST ESTIMATE WORKSHEET

PROPOSAL DESCRIPTION: Alternative 1 - Mile Point Navigation Improvement Projects with West Training Wall with Stone System vs. Alternative 3 - West Training Wall with Concrete Structural Unit (CSU)

DELETIONS - Alternative 1

	ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
1	Mob/Demob - Prep Work	LS	1	$2,239,548.00	$2,239,548
2	Pipeline Dredging	LS	1	$5,625,459.00	$5,625,459
3	Mile Pt Jetty Stone Removal	LS	1	$1,957,059.00	$1,957,059
4	Stone Structures	LS	1	$30,575,059.00	$30,575,059
5	Turbidity Monitoring	LS	1	$275,103.00	$275,103
6	Great Marsh Island Salt Marsh	LS	1	$3,729,421.00	$3,729,421
7	Endangered Spec Monitoring	LS	1	$169,615.00	$169,615
8	L&D - Real Estate	LS	1	$72,000.00	$72,000
9	Relocate Navigation Aids	LS	1	$378,000.00	$378,000
10	PED	LS	1	$2,841,490.00	$2,841,490
11	Construction Mgt	LS	1	$2,352,915.00	$2,352,915
12					$0
13					$0
14					$0
15					$0
16					$0
			Total Deletions		$50,215,669

ADDITIONS - Alternative 3

	ITEM	UNITS	QUANTITY	UNIT COST	TOTAL
1	Mob/Demob - Pipeline Dredging	LS	1	$1,683,144.00	$1,683,144
2	Mob/Demob - Stone Work	LS	1	$460,733.00	$460,733
3	Clear/Grubbing	Ac	13	$3,257.64	$42,349
4	Pipeline Dredging	LS	1	$5,491,519.00	$5,491,519
5	Mile Pt Jetty Stone Removal	CY	14,600	$130.85	$1,910,410
6	S-2 Filter Stone Placement	CY	11,900	$199.78	$2,377,382
7	S-2 Armor Stone Placement	CY	12,300	$482.98	$5,940,654
8	Fill & Grade West Train Wall Foundation	CY	9,900	$6.25	$61,875
9	Bedding Stone	CY	5,000	$201.79	$1,008,950
10	Geotextile fabric	SY	20,300	$12.04	$244,412
11	CTWS Containment Structures	Ea	567	$6,396.00	$3,626,532
12	Turbidity Monitoring	Mo	6.80	$39,493.11	$268,553
13	Endangered Spec Monitoring	Mo	6.80	$24,349.54	$165,577
14	L&D - Real Estate	LS	1	$72,000.00	$72,000
15	Relocate Navigation Aids	LS	1	$369,000.00	$369,000
16	Great Marsh Island Mitigation Salt Marsh	LS	1	$3,661,990.00	$3,661,990
17	PED	LS	1	$1,200,000.00	$1,200,000
18	Construction Mgt	LS	1	$1,716,003.00	$1,716,003
			Total Additions		$30,301,083

	Alternate 3	Net Cost Savings			$19,914,586
	*	Mark-ups	0.00%		$0
	Alternate 3	Total Cost Savings			$19,914,586
	Alternate 3	Total First Cost (No O&M Increase)			$30,301,083

Mark-ups: Gen. Contractor Mark-up - Included in Unit Prices (Field Office/Home Office/Profit/Bond);
* Contingencies - 26.0% are included in Unit Prices.

APPENDIX A-2

COST ENGINEERING

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APPENDIX A-2A– PROJECT COST AND SCHEDULE RISK ANALYSIS REPORT

A. COST ESTIMATES

A.1 GENERAL INFORMATION

Corps of Engineers cost estimates for planning purposes are prepared in accordance with the following guidance:

- Engineer Technical Letter (ETL) 1110-2-573, Construction Cost Estimating Guide for Civil Works, 30 September 2008
- Engineer Regulation (ER) 1110-1-1300, Cost Engineering Policy and General Requirements, 26 March 1993
- ER 1110-2-1302, Civil Works Cost Engineering, 15 September 2008
- ER 1110-2-1150, Engineering and Design For Civil Works Projects, 31 August 1999
- ER 1105-2-100, Planning Guidance Notebook, 22 April 2000, as amended
- Engineer Manual (EM) 1110-2-1304 (Tables revised 31 March 2009), Civil Works Construction Cost Index System, 31 March 2000
- CECW-CP Memorandum For Distribution, Subject: Initiatives To Improve The Accuracy Of Total Project Costs In Civil Works Feasibility Studies Requiring Congressional Authorization, 19 Sep 2007
- CECW-CE Memorandum For Distribution, Subject: Application of Cost Risk Analysis Methods To Develop Contingencies For Civil Works Total Project Costs, 3 Jul 2007
- Cost and Schedule Risk Analysis Process (CSRA) Guidance, 17 May 2009

The goals of the cost estimating for the Duval County, Jacksonville Harbor (Mile Point) Navigation Study are to present a Total Project Cost (construction and non-construction costs) for the recommended plans at the current price level to be used for project justification/authorization and to project costs forward in time for budgeting purposes. In addition, the costing efforts are intended to produce a final product (cost estimate) that is reliable and accurate and that supports the definition of the Government's and the non-Federal sponsor's obligations. The cost estimating effort for the study also yielded a series of alternative plan formulation cost estimates for decision making. The final set of plan formulation cost estimates used for plan selection rely on construction feature unit pricing and are prepared in Civil Works Breakdown Structure (CWBS) format to the sub-feature level. The cost estimate supporting the National Economic Development (NED) plan (Recommended Plan/Locally Preferred Alternative Plan) is prepared in MCACES/MII format to the CWBS sub-feature level. This estimate is supported by the preferred labor, equipment, materials and crew/production breakdown. A fully funded (escalated for inflation through project completion) cost estimate, the Baseline Cost Estimate or Total Project Cost Summary, has also been developed. A risk analysis was prepared that addresses uncertainties in and sets contingencies for the Recommended Alternative Plans cost items. The final Cost Schedule Risk Analysis Report produced by the Walla Walla District Cost Center of Expertise is appended to this appendix.

A.1.1 Recommended Alternative Plans

The final Recommended Plan (NED and Locally Preferred Alternative) were chosen by the Project Delivery Team according to Cost Effectiveness/Incremental Cost Analysis procedures and resulted directly from the plan formulation described above. The Economics Appendix fully describes the plan selection. The scope of work for the Recommended Alternative Plans is found in Appendix A, Engineering. The MCACES/MII cost estimate for the Recommended Alternative Plans (Section B.3, below) is based on that scope and is formatted in the CWBS. The notes provided in the body of the estimate detail the estimate parameters and assumptions. These include pricing at the Fiscal Year 2011 price level (1 October 2010-30 September 2011). For project justification purposes the estimate cost are categorized under the appropriate CWBS code and include both construction and non-construction costs.

The construction costs fall under the following feature codes:

- 02 Relocations
- 06 Fish and Wildlife Facilities
- 12 Navigation Ports and Harbors

The non-construction costs fall under the following feature codes:

- 01 Lands and Damages
- 30 Planning, Engineering and Design
- 31 Construction Management

A.1.2 Construction Cost

The MCACES/MII estimate on the final Recommended Plan contains contingencies as noted in the estimate (below). These contingencies were determined as a result of the risk analysis. Additional information follows on the risk analysis. Major risk factors are shown in the sensitivity analyses.

A.1.3 Non-construction Cost

Non-construction costs include Real Estate, Planning, Engineering and Design (PED), and Construction Management (Supervision and Administration, S&A). Real Estate costs were provided by Real Estate Division. These costs are best described in the Real Estate Appendix, Appendix D. They include lands costs and administrative costs and are distinguished as non-Federal sponsor costs or government costs. Contingencies for the Real Estate costs were also determined during risk analysis based on direct input from the Real Estate PDT representative. The Real Estate risk analysis is further described below. Planning, Engineering and Design costs are broken down into Preconstruction, Engineering and Design (PED), or preparation of contract plans and specifications; Engineering During Construction (EDC); and the Project Implementation Report (PIR). PED costs were solicited from Engineering Division via the Project Manager, as suggested by the guidance Construction Management costs was solicited from Construction-Operations Division via the Project Manager, again as suggested by the guidance. Eight percent of total construction cost is used as the rate for Construction Management costs for the cost estimate for the Recommended Plan. This percentage is based on actual funds spent for construction

management on past contracts. When this percentage is calculated by Construction-Operations Division for planning projects it is itemized to show amounts allocated for each task anticipated to occur during construction. Only the gross percentage is shown herein.

The main report details both cost allocation and cost apportionment for the Federal government and the non-Federal sponsor. Also included in the main report are the non-Federal sponsor's obligations (items of local cooperation).

A.1.4 Plan Formulation Cost Estimates

For the plan formulation cost estimates, unit prices for each major or variable construction element were developed in MCACES/MII. These unit prices were entered into spreadsheets that differentiated each plan by the quantities required to construct the plans. Designs and quantities for the construction elements were provided to Cost Branch by the Engineering Technical Lead (see the Engineering Appendix for construction methods, design assumptions and design data). Preconstruction, Engineering and Design costs and Construction Management costs were calculated using percentages at this level of estimating.

The plan formulation process for this study involved numerous iterations. Since the costs for the plans were calculated via spreadsheet software it was fairly simple to adjust them as time went by (for example, as unit prices increased due to changes in price level), as plan components changed and as plans were added or removed from consideration. Refer to the Economics Section in the Main Report for the final Plan Formulation cost tables.

A.1.5 Construction Schedule

A construction schedule was prepared by the Engineering PDT in conjunction with the Planning Technical Lead and the construction-operations team member that reflected all project construction components. The schedule considered not only durations of individual components but also timing of construction contracts. This schedule was coupled with the project schedule in preparation for the generation of the Total Project Cost Summary as well as for the completion of the risk analysis. The construction schedule will change as design of the project proceeds in the plans and specifications phase and then it will change again when the contract is awarded and the contractor provides his schedule, which may be based on multiple crews with shift work and overtime. Both the construction schedule and the project schedule are provided below. The official schedule is the project schedule and it is given precedence herein wherever a conflict appears between these two schedules.

A.1.6 Total Project Cost Summary

The Total Project Cost Summary includes escalation through project completion. The cost estimate for the Recommended Plan is prepared with an identified price level date. Inflation factors are used to adjust the pricing to the project schedule. This estimate is known as the Fully Funded Cost Estimate or Total Project Cost Summary. It includes all Federal and non-Federal costs: Lands, Easements, Rights of Way and Relocations; construction features; Preconstruction Engineering and Design; Construction Management; Contingency; and Inflation.

A.3. MCACES Cost Estimate

(Incorporating Cost Review Comment changes March 2011)
Revised Final NED Plan - Alternative VE-3B - Concrete Structural Units System VE Alternative
Feasibility Study
Mile Point Improvements,
Jacksonville Harbor,

Estimated by Cost Engineering Branch
Designed by Jacksonville District
Prepared by B. Blake
Preparation Date 3/24/2011
Effective Date of Pricing 3/24/2011
Estimated Construction Time 465 Days
This report is not copyrighted, but the information contained herein is For Official Use Only.

Library Properties i

Project Notes ii

Project Cost Summary Report 1

Alternative VE-3B with Chicopit Bay Flow Improvement Channel 1

Construction Cost 1

02 Relocations 1

0203 Aids To Navigation 1

06 Fish and Wildlife Facilities 1

0603 Wildlife Facilities & Sanctuary 1

12 Navigation Ports & Harbors 1

1202 Harbors 1

Non Construction Cost 1

01 Lands and Damages 1

0118 General Revalutation Report(GRR) 1

30 Planning, Engineering and Design 1

3018 General Reevaluat'n Report (GRR) 1

31 Construction Management 1

3123 Construction Contracts 1

Contract Cost Summary Report 2

Alternative VE-3B with Chicopit Bay Flow Improvement Channel 2

Construction Cost 2
02 Relocations 2
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06 Fish and Wildlife Facilities 2
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0603 Wildlife Facilities & Sanctuary 3

12 Navigation Ports & Harbors 3

1202 Harbors 3

Non Construction Cost 3

01 Lands and Damages 3

0118 General Revalutation Report(GRR) 3

30 Planning, Engineering and Design 3

3018 General Reevaluat'n Report (GRR) 3

31 Construction Management 3

3123 Construction Contracts 3

Designed by
Jacksonville District

Estimated by
Cost Engineering Branch

Prepared by
B. Blake

Design Document Feasibility Study - Revised Final NED Plan
Document Date 1/21/2011

District Jacksonville
Contact Steve Conger, Ext. 1601

Budget Year 2011
UOM System Original

Direct Costs
LaborCost
EQCost
MatlCost
SubBidCost
CEDEP
OTHER

Timeline/Currency
Preparation Date 3/24/2011
Escalation Date 10/1/2010
Eff. Pricing Date 3/24/2011
Estimated Duration 465 Day(s)

Currency US dollars
Exchange Rate 1.000000

Costbook CB08EB: MII English Cost Book 2008

Labor LFL2010: Labor_Florida_2010B

Labor Rates
LaborCost1
LaborCost2
LaborCost3
LaborCost4

Equipment EP07R03: MII Equipment Region 3r 2007
Note: Price quote for off-road diesel from Gate Petroleum, Jacksonville, FL. on 3 March 2011.

03 SOUTHEAST	
Sales Tax	8.50
Working Hours per Year	1,530
Labor Adjustment Factor	1.00
Cost of Money	2.63
Cost of Money Discount	25.00
Tire Recap Cost Factor	1.50
Tire Recap Wear Factor	1.80
Tire Repair Factor	0.15
Equipment Cost Factor	1.00
Standby Depreciation Factor	0.50

Fuel	
Electricity	0.089
Gas	3.550
Diesel Off-Road	3.240
Diesel On-Road	3.550

Shipping Rates	
Over 0 CWT	10.26
Over 240 CWT	9.59
Over 300 CWT	8.41
Over 400 CWT	7.64
Over 500 CWT	4.49
Over 700 CWT	4.36
Over 800 CWT	4.99

Date	Author	Note
10/29/2010	B. Blake	Concrete Structural Units Western Training Wall VE Alternative Plan. Reference draft VE Study Plan provided by CESAJ-EN-T/F. McAuley, District VE, for subject VE alternative plan. The plan includes the use of concrete structural modules (WADS) or equivalent concrete structural units (i.e., reef balls, etc) to construct an alternative Training Wall system in lieu of the Armor Stone system used in the Final NED Plan for the Western Training Wall feature. The WADS units are provided by Living Shoreline Solutions, Inc. A price quote for the manufacture and installation of the WADS for the subject VE Study cost estimate was provided by Mr. Thomas J. Brown, CEO, to Mr. McAuley during a telephone conversation on 28 October 2010. The WADS or equivalent concrete structural units will be placed only the same alignment that was used in the design of the Armor Stone training wall based on the dimensions presented in the draft VE Study Plan. This will include the placement of geotextile fabric and a bedding stone foundation to be constructed prior to structure placement by the Prime Contractor. VE Plan quantity estimates (per CESAJ-EN-T email dated 29 October 2010). 567 WADS units required - 10' high by 15' base. Estimated cost for forming and placement of WADS is $1,000 each, plus GC mark-up and contingencies. Additional fill by dredge (above that required for Geotubes) and drag-bar to elevation -2': (4,250' long X 20' wide X 2' thick) = 6,500 CY. Stone bedding: 4,250' long X 30' wide X 1' thick = 9,500 CY. Geotextile: 4,250' long X 43' wide = 20,300 SY. Assumed the same total construction time for this plan is the same as the previous Geotube Berm plan alternative for the VE Study cost estimate or 465 days.
12/6/2010	B. Blake	Changed the contingency from 23 percent back to 26 percent which was the NED Plan CSRA based contingency. This in order to do equal comparative cost estimates of VE Plan Alternatives.
12/9/2010	B. Blake	Revised quantities for the concrete units construction provided by the VE/F. McAuley on 7 December 2010. The changes were made to the following construction components. 1. Sub Bottom Preparation - from 6,500 cy to 9,900 cy. 2. Bedding Stone Foundation - from 9,500 cy to 5,000 cy.
1/19/2011	B. Blake	Revised Final NED Plan Estimate including Profit and CSRA Contingency. The revised scope of work including the Concrete Structural Units VE alternative for the Great Marsh Island Western Training Wall was provided by the ETL/S. Conger via email dated 17 December 2010, and the cost for the units (WADS) was provided by the District VE/F. McAuley via email dated 23 November 2010. Change to Scope of Work for the Great Marsh Island Western Leg Training Wall as follows. 1. 567 10' x 15' Concrete Structural Units placed interlocked along the 4,250 lf length of the planned Training Wall system.

Date	Author	Note
		2. 40,500 cyds of bottom grading for the Training Wall foundation.
		3. 32,000 syds of geotextile bag material to contain the graded foundation material within the deeper holes located along the limits of the Training Wall.
		A Source Sought RFI solicitation was completed 28 January 2011 that indicated that the Living Shoreline Solutions Wave Antenuation System (WADS) was the highest rated system available from industry for the construction of the Concrete Structural Units Training Wall. For this reason the WADS system and cost are used in the final NED Plan estimate. Other systems including Reef Ball units, etc. were also submitted following an extension to the RFI solicitation date along with two other proposals that may provide competitive alternatives that could be further evaluated during the PED and contract solicitation phase of the project to avoid sole sourcing.
2/24/2011	B. Blake	Updated the PED costs based on revised PDT input period of 14-24 February 2011 and final revision submitted by the PM/S. Ross on 28 February 2011.
		Also updated all material costs with updated price quotations in February 2011.
		Refer to separate project and construction schedule presented in the Cost Engineering Appendix.
		Final project contingency was developed based on a revised Cost Schedule Risk Analysis (CSRA) based on updated PDT input including consideration of the revised scope of work for the Eastern Training Wall Feature.
		The contingency is not included in the Baseline Cost Estimate and will be applied separately in the Final Plan updated Total Project Cost Summary (TPCS) as part of obtaining the update Cost DCX Certification.
3/21/2011	B. Blake	Revised estimate to incorporate Cost DCX Independent Review Comments submitted via Dr. Checks by Joe Ellsworth/CESAM on 14 March 2011.
		Comment Changes as follows:
		1. Revised equipment fuel rates in MII and CEDE as per comment 3825212.
		2. Removed extra contingency applied to the Mitigation Monitoring cost as per comment 3833489.
		3. Revised the contractor Bond rate as per comment 3833490.
		4. Revised the Relocation cost for Aids to Navigation based on updated cost input from the U.S. Coast Guard, 7th District ATON Office, Mr. Joe Embress on 21 March 2011, as per comment 3833501.
		5. Updated the Mobilization/Demobilization cost for the Structural (Stone) work based on an itemized cost breakdown as per comments 3833502 and 3833504.
		6. Added note to the Geotube installation cost item to explain the volume of the tubes and necessary quantity of dredge material needed to fill them, as per comment 3833505.
		7. Added note to the Water Dam installation cost item to explain the basis of cost being a single supplier as per comment 3833510.
		8. Added additional notes to the cost items utilizing quantity links and conversion as per comment 3833512.
		9. Revised the stone weight conversion based on conversation with the project ETL/S. Conger to use 1.838 tons per cubic yard for Armor Stone verses previous 1.893 tons per cubic yard assumed in the estimate, as per comment 3833514.

Date	Author	Note
		Construction Quantites from the final Draft Report Engineering Appendix provided by the ETL on 28 Jan 2011.
3/24/2011	B. Blake	Clearing and Grubbing Revised Mitigation Construction Plan for the Oyster Habitat Construction as per email from the Environmental PDT representative/Paul Stodola on 24 March 2011 in response to Cost Review comments submitted by CESAM/J. Ellsworth via Dr. Checks on 14 March 2011.
		Comment 3833489. Reference MII, feature 06, Monitoring Cost is priced including a 25% contingency per year. Contingency Cost should only be included in the Total Project Cost Summary. Same comment applies to the Planting Cost. From the notes it appears the quantity and unit price includes contingency. Also the quantity and unit cost appears to be based on Sep 2008 price level. Cost should be updated to the effective date of the MII estimate. Submitted By: Joseph Ellsworth (251-690-2628). Submitted On: 14-Mar-11 RESPONSE: Concur. Contingency costs for monitoring and planting will only be included in the Total Project Cost Summary. Appropriate revisions will be made including updating the costs. Comment 3833494. Oyster shell material is $27.50 per ton as quoted by Gulf Coast Aggregates per CESAJ-PD-ES/P. Stodola appears to be somewhat low, especially for such a small quantity? Submitted By: Joseph Ellsworth (251-690-2628). Submitted On: 14-Mar-11 RESPONSE: We are in the process of updating the cost. We re-contacted Gulf Coast Aggregates and their price is now $35 per ton of fossilized oyster shell, and this does not include delivery. They are sending us a quote for delivery to our project area. Some of our recent contacts have suggested that fossilized oyster shell should not be used for oyster restoration projects. They claim that spats appear to be more attracted, based on chemical cues, to recently shucked shell. A larger oyster shucking house on the east coast of Florida has quoted us a price of $20/cubic yard, and this again does not include delivery. In this case, we would have to provide transport. Comment 3833515. Plant cost at $5.00 per each appears to be somewhat high. Recent pricing for a Gulf Coast project Plant cost at $5.00 per each appears to be somewhat high. Recent pricing for a Gulf Coast project was in the $3.00 to $3.50 range. Re-evaluate and revise as needed. Notes indicate effective pricing is 22 Sep 2008. Submitted By: Joseph Ellsworth (251-690-2628). Submitted On: 14-Mar-11 RESPONSE: We have received an updated quote of $3-$4 per plant, installed. Based on our discussions, we are now proposing to use commercially grown plants rather than transplants. Additional response from CESAJ-PD-EC/P. Stodola via email dated 24 March 2011. Brian, as we discussed, we would like to change the scope of work on the oyster mitigation. We propose to use 10 cubic yards of shucked oyster shell ($20 cubic yard), and the shell would be placed in 10 separate piles within one of our created tidal channels. The shell would come from St. Augustine, and we would have to determine transport costs as well as placement costs. Please let me know if you need anything else.

Date	Author	Note
3/24/2011	B. Blake	Cost for Relocation of Aids to Navigation. The U.S. Coast Guard, 7th District ATON office confirmed that the previous 2008 cost of $300,000 was still the cost for the project. The USCG POC was that provided the confirmation via email on 24 March 2011 was Charlie.P.Pantelakos@uscg.mil.
3/24/2011	B. Blake	Final Project Contingency. The updated Cost Schedule Risk Analysis (CSRA) produced a final plan total project cost contingency of 29 percent. The contingency in not included in th MII estimate but will be applied separately in the Total Project Cost Summary TPCS to be included in the final report Cost Engineering Appendix. The CSRA Report will be included as supplemental appendix to the Cost Engineering Appendix in the final report.

Description	Quantity	UOM	ContractCost	Escalation	Contingency	ProjectCost
Project Cost Summary Report – CWWBS SubFeature Level 2			**27,660,467**	**0**	**0**	**27,660,467**
Alternative VE-3B with Chicopit Bay Flow Improvement Channel	**1.00**	**LS**	**27,660,467**	**0**	**0**	**27,660,467**
Construction Cost	**1.00**	**LS**	**24,593,008**	**0**	**0**	**24,593,008**
02 Relocations	**1.00**	**LS**	**327,487**	**0**	**0**	**327,487**
0203 Aids To Navigation	**1.00**	**LS**	**327,487**	**0**	**0**	**327,487**
06 Fish and Wildlife Facilities	**1.00**	**LS**	**2,348,606**	**0**	**0**	**2,348,606**
0603 Wildlife Facilities & Sanctuary	**1.00**	**LS**	**2,348,606**	**0**	**0**	**2,348,606**
12 Navigation Ports & Harbors	**1.00**	**LS**	**21,916,916**	**0**	**0**	**21,916,916**
1202 Harbors	**1.00**	**LS**	**21,916,916**	**0**	**0**	**21,916,916**
Non Construction Cost	**1.00**	**LS**	**3,067,459**	**0**	**0**	**3,067,459**
01 Lands and Damages	**1.00**	**LS**	**75,322**	**0**	**0**	**75,322**
0118 General Revalutation Report(GRR)	**1.00**	**LS**	**75,322**	**0**	**0**	**75,322**
30 Planning, Engineering and Design	**1.00**	**LS**	**1,562,112**	**0**	**0**	**1,562,112**
3018 General Reevaluat'n Report (GRR)	**1.00**	**LS**	**1,562,112**	**0**	**0**	**1,562,112**
31 Construction Management	**1.00**	**LS**	**1,430,025**	**0**	**0**	**1,430,025**
3123 Construction Contracts	**1.00**	**LS**	**1,430,025**	**0**	**0**	**1,430,025**

Description	Quantity	UOM	Contractor	DirectCost	SubCMU	CostToPrime	PrimeCMU	ContractCost
Contract Cost Summary Report– CWWBS SubFeature Level 2				21,295,857	3,076,382	24,372,239	3,288,227	27,660,467
Alternative VE-3B with Chicopit Bay Flow Improvement Channel	1.00	LS		21,295,857	3,076,382	24,372,239	3,288,227	27,660,467
Construction Cost	1.00	LS		18,485,857	3,076,382	21,562,239	3,030,769	24,593,008
02 Relocations	1.00	LS	Non-Construction	300,000	0	300,000	27,487	327,487
0203 Aids To Navigation	1.00	LS	Non-Construction	300,000	0	300,000	27,487	327,487
06 Fish and Wildlife Facilities	1.00	LS		1,741,357	410,125	2,151,482	197,124	2,348,606
0603 Wildlife Facilities & Sanctuary	1.00	LS	01.03 Environmental Subcontractor	1,741,357	410,125	2,151,482	197,124	2,348,606
12 Navigation Ports & Harbors	1.00	LS		16,444,500	2,666,258	19,110,757	2,806,158	21,916,916
1202 Harbors	1.00	LS	01 Prime Contractor	16,444,500	2,666,258	19,110,757	2,806,158	21,916,916
Non Construction Cost	1.00	LS	Non-Construction	2,810,000	0	2,810,000	257,459	3,067,459
01 Lands and Damages	1.00	LS	Non-Construction	69,000	0	69,000	6,322	75,322
0118 General Revalutation Report(GRR)	1.00	LS	Non-Construction	69,000	0	69,000	6,322	75,322
30 Planning, Engineering and Design	1.00	LS	Non-Construction	1,431,000	0	1,431,000	131,112	1,562,112
3018 General Reevaluat'n Report (GRR)	1.00	LS	Non-Construction	1,431,000	0	1,431,000	131,112	1,562,112
31 Construction Management	1.00	LS	Non-Construction	1,310,000	0	1,310,000	120,025	1,430,025
3123 Construction Contracts	1.00	LS	Non-Construction	1,310,000	0	1,310,000	120,025	1,430,025

Description	Quantity	UOM	Contractor	DirectLabor	DirectEQ	DirectMatl	DirectSubBid	DirectUserCost	DirectCost
Project Direct Costs Report – CWWBS									
SubFeature Level 2				1,661,476	1,808,094	4,199,483	6,216,777	7,410,027	21,295,857
Alternative VE-3B with Chicopit Bay Flow									
Improvement Channel	1.00	LS		1,661,476	1,808,094	4,199,483	6,216,777	7,410,027	21,295,857
Construction Cost	1.00	LS		1,661,476	1,808,094	4,199,483	6,166,777	4,650,027	18,485,857
02 Relocations	1.00	LS	Non-Construction	0	0	0	0	300,000	300,000
0203 Aids To Navigation	1.00	LS	Non-Construction	0	0	0	0	300,000	300,000
06 Fish and Wildlife Facilities	1.00	LS		3,197	6,723	212	1,422,820	308,405	1,741,357
0603 Wildlife Facilities & Sanctuary	1.00	LS	01.03 Environmental Subcontractor	3,197	6,723	212	1,422,820	308,405	1,741,357
12 Navigation Ports & Harbors	1.00	LS		1,658,279	1,801,371	4,199,271	4,743,957	4,041,622	16,444,500
1202 Harbors	1.00	LS	01 Prime Contractor	1,658,279	1,801,371	4,199,271	4,743,957	4,041,622	16,444,500
Non Construction Cost	1.00	LS	Non-Construction	0	0	0	50,000	2,760,000	2,810,000
01 Lands and Damages	1.00	LS	Non-Construction	0	0	0	50,000	19,000	69,000
0118 General Revalutation Report(GRR)	1.00	LS	Non-Construction	0	0	0	50,000	19,000	69,000
30 Planning, Engineering and Design	1.00	LS	Non-Construction	0	0	0	0	1,431,000	1,431,000
3018 General Reevaluat'n Report (GRR)	1.00	LS	Non-Construction	0	0	0	0	1,431,000	1,431,000
31 Construction Management	1.00	LS	Non-Construction	0	0	0	0	1,310,000	1,310,000
3123 Construction Contracts	1.00	LS	Non-Construction	0	0	0	0	1,310,000	1,310,000

A.4. Project Schedule

ID	Task Name	Duration	Start	Finish	Predecessors
1	**Milepoint Overall Project Schedule: Planning to Construction**	**2075 days**	**Mon 3/16/09**	**Thu 11/20/14**	
2	**Feasibility Phase**	**1389 days**	**Mon 3/16/09**	**Thu 1/3/13**	
3	Submit Draft Report to South Atlantic Division (SAD)	1 day	Mon 3/16/09	Tue 3/17/09	
4	SAD Endorsement of Draft Report to HQ	44 days	Tue 3/17/09	Thu 4/30/09	3
5	Receive HQ comments on Draft Report	57 days	Thu 4/30/09	Fri 6/26/09	4
6	District Response to HQ comments	12 days	Fri 6/26/09	Wed 7/8/09	5
7	Issue Resolution Conference	33 days	Wed 7/8/09	Mon 8/10/09	6
8	SAJ Conducts Additional Analysis (Econ, Cost, Env, Eng)	469 days	Mon 8/10/09	Mon 11/22/10	7
9	Updated Draft Report	14 days	Mon 11/22/10	Mon 12/6/10	8
10	Complete DQC & ATR (Concurrent)	14 days	Mon 12/6/10	Mon 12/20/10	9
11	Update per DQC	0 days	Mon 12/20/10	Mon 12/20/10	10
12	ATR (Concurrent)	0 days	Mon 12/20/10	Mon 12/20/10	11
13	Update per DQC & ATR (including Cost)	70 days	Mon 12/20/10	Mon 2/28/11	12
14	Submit Draft Report to South Atlantic Division (SAD)	14 days	Mon 2/28/11	Mon 3/14/11	13
15	SAD Endorsement of Draft Report to HQ	14 days	Mon 3/14/11	Mon 3/28/11	14
16	AFB Meeting	60 days	Mon 3/28/11	Fri 5/27/11	15
17	Receive Project Guidance Memorandum (PGM)	14 days	Fri 5/27/11	Fri 6/10/11	16
18	SAD/HQ Approved Public Release of Draft	0 days	Fri 6/10/11	Fri 6/10/11	17
19	Complete Draft Feasibility Report	14 days	Fri 6/10/11	Fri 6/24/11	18
20	Final Draft to Reproduction	7 days	Fri 6/24/11	Fri 7/1/11	19
21	Public Coordination of Draft Report	8 days	Fri 7/1/11	Sat 7/9/11	20
22	Initiate IEPR (Pending Funding)	0 days	Sat 7/9/11	Sat 7/9/11	21
23	Public Meeting	0 days	Sat 7/9/11	Sat 7/9/11	22
24	End Public Comment Period	45 days	Sat 7/9/11	Tue 8/23/11	23
25	Receive IEPR Comments	15 days	Tue 8/23/11	Wed 9/7/11	24
26	Final Fish & Wildlife CAR	0 days	Wed 9/7/11	Wed 9/7/11	25
27	Respond to Public/IEPR Comments	16 days	Wed 9/7/11	Fri 9/23/11	26
28	Report Finalized	10 days	Fri 9/23/11	Mon 10/3/11	27
29	Complete ITR/Legal Certification	7 days	Mon 10/3/11	Mon 10/10/11	28
30	Submit Final Report to Division Commander	7 days	Mon 10/10/11	Mon 10/17/11	29
31	Division Engineer Transmittal Letter	14 days	Mon 10/17/11	Mon 10/31/11	30
32	Civil Works Review Board (CWRB) - actual schedule 13 December	43 days	Mon 10/31/11	Tue 12/13/11	31
33	State and Agency (S&A) letters signed and sent to District	28 days	Tue 12/13/11	Tue 1/10/12	32
34	District sends reports to State/agencies & files Environmental Assessment (EA)	0 days	Tue 1/10/12	Tue 1/10/12	33
35	Begin 30-day NEPA review	0 days	Tue 1/10/12	Tue 1/10/12	34
36	HQUSACE policy assessment	0 days	Tue 1/10/12	Tue 1/10/12	35
37	Review conference, if needed (telephone or video)	0 days	Tue 1/10/12	Tue 1/10/12	36

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ID	Task Name	Duration	Start	Finish	Predecessors	1st Qua	2nd Qu
38	End 30-day S&A & NEPA review period	31 days	Tue 1/10/12	Fri 2/10/12	37		
39	District responses received	2 days	Fri 2/10/12	Sun 2/12/12	38		
40	HQ review documentation	21 days	Sun 2/12/12	Sun 3/4/12	39		
41	Final Chief of Engineers report to Assistant Secretary of Army Civil Works (ASA(CW))	21 days	Sun 3/4/12	Sun 3/25/12	40		
42	ASA(CW) Review Complete, letter to OMB	90 days	Sun 3/25/12	Sat 6/23/12	41		
43	OMB review complete, letter to ASA(CW)	60 days	Sat 6/23/12	Wed 8/22/12	42		
44	ASA(CW) letter to Congress	30 days	Wed 8/22/12	Fri 9/21/12	43		
45	Authorization Bill (WRDA or Appropriations Act)	14 days	Fri 9/21/12	Fri 10/5/12	44		
46	Fiscal closeout Feasiblity Report	90 days	Fri 10/5/12	Thu 1/3/13	45		
47	**PED Phase**	**436 days**	**Mon 10/31/11**	**Wed 1/9/13**	**31**		
48	Design Agreement (DA) Initiated (Once Division Engineer's Transmittal Letter)	0 days	Mon 10/31/11	Mon 10/31/11			
49	DA to Local Sponsor (LS) Concurrence Received	30 days	Mon 10/31/11	Wed 11/30/11	48		
50	DA submitted to SAD	3 days	Wed 11/30/11	Sat 12/3/11	49		
51	DA Approved	30 days	Sat 12/3/11	Mon 1/2/12	50		
52	DA Executed by LS	14 days	Mon 1/2/12	Mon 1/16/12	51		
53	DA Executed USACE/Initiate PED	7 days	Mon 1/16/12	Mon 1/23/12	52		
54	Fed/Non-Fed Funding	37 days	Mon 1/23/12	Wed 2/29/12	53		
55	Complete P&S Investigations	180 days	Wed 2/29/12	Mon 8/27/12	54		
56	Complete WQC	60 days	Mon 8/27/12	Fri 10/26/12	55		
57	Complete P&S	75 days	Fri 10/26/12	Wed 1/9/13	56		
58	**Construction Phase**	**983 days**	**Mon 3/12/12**	**Thu 11/20/14**			
59	Receive Initial Project Funding	0 days	Mon 3/12/12	Mon 3/12/12			
60	Project Cooperation Agreement (PCA) Initiated (Once Authorized and Funding)	1 day	Fri 10/5/12	Sat 10/6/12	45		
61	PCA Local Sponsor (LS) Concurrence Received	14 days	Sat 10/6/12	Sat 10/20/12	60		
62	PCA submitted to HQ (once WQC received)	52 days	Sat 10/20/12	Tue 12/11/12	61		
63	PCA Approved by ASA(CW)	90 days	Tue 12/11/12	Mon 3/11/13	62		
64	PCA Executed by LS	21 days	Mon 3/11/13	Mon 4/1/13	63		
65	PCA Executed by USACE	10 days	Mon 4/1/13	Thu 4/11/13	64		
66	Fed/ Non-Fed Funding	7 days	Thu 4/11/13	Thu 4/18/13	65		
67	Advertise (Contingent upon funding)	1 day	Thu 4/18/13	Fri 4/19/13	66		
68	Receive Proposals	45 days	Fri 4/19/13	Mon 6/3/13	67		
69	Award	40 days	Mon 6/3/13	Sat 7/13/13	68		
70	Issue NTP	30 days	Sat 7/13/13	Mon 8/12/13	69		
71	**Construction Start**	**465 days**	**Mon 8/12/13**	**Thu 11/20/14**	**70**		
72	**Mobilization and Preparation Work**	**144 days**	**Mon 8/12/13**	**Fri 1/3/14**			
73	Mobilization for Site Work & Structures	30 days	Mon 8/12/13	Wed 9/11/13			
74	Clearing & Grubbing of Mile Point Jetty Area	9 days	Mon 8/12/13	Wed 8/21/13			

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Task	Rolled Up Task	External Tasks	
Critical Task	Rolled Up Critical Task	Project Summary	
Progress	Rolled Up Milestone	Group By Summary	
Milestone	Rolled Up Progress	Deadline	
Summary	Split		

ID	Task Name	Duration	Start	Finish	Predecessors	1st Qua	2nd Qu
75	Mobilization of Pipeline Dredge	10 days	Wed 8/21/13	Sat 8/31/13	74		
76	Disposal Area Containment Berms	125 days	Sat 8/31/13	Fri 1/3/14	75		
77	**Mile Point Jetty Relocation and Realignment**	**100 days**	**Wed 8/21/13**	**Fri 11/29/13**			
78	Armor Stone Removal and Relocation	100 days	Wed 8/21/13	Fri 11/29/13	74		
79	**Eastern Training Wall Construction**	**153 days**	**Fri 11/29/13**	**Thu 5/1/14**			
80	Geotextile Filter Fabric	13 days	Fri 11/29/13	Thu 12/12/13	78		
81	Filter/Bedding Stone	55 days	Thu 12/12/13	Wed 2/5/14	80		
82	Armor Stone	85 days	Wed 2/5/14	Thu 5/1/14	81		
83	**Western Training Wall Construction**	**163 days**	**Wed 9/11/13**	**Fri 2/21/14**			
84	Sub-Bottom Grading	68 days	Wed 9/11/13	Mon 11/18/13	73		
85	Geotube Containment for Bottom Fill	17 days	Mon 11/18/13	Thu 12/5/13	84		
86	Geotextile Filter Fabric	12 days	Thu 12/5/13	Tue 12/17/13	85		
87	Bedding Stone Foundation	24 days	Tue 12/17/13	Fri 1/10/14	86		
88	Install Concrete Structural Units	42 days	Fri 1/10/14	Fri 2/21/14	87		
89	**Dredging of the IWW Channel Flow Way**	**192 days**	**Fri 1/10/14**	**Mon 7/21/14**			
90	Pipeline Dredging & Disposal into Great Marsh Island	192 days	Fri 1/10/14	Mon 7/21/14	87		
91	**Dredging of the Chicopit Bay Flow Channel**	**13 days**	**Mon 7/21/14**	**Sun 8/3/14**			
92	Pipeline Dredging & Disposal into Great Marsh Island	13 days	Mon 7/21/14	Sun 8/3/14	90		
93	**Demobilization and Site Cleanup**	**19 days**	**Sun 8/3/14**	**Fri 8/22/14**			
94	Demobilization of Pipeline Dredge	10 days	Sun 8/3/14	Wed 8/13/14	92		
95	Site Cleanup	9 days	Wed 8/13/14	Fri 8/22/14	94		
96	**Great Marsh Island Mitigation Site Management**	**90 days**	**Fri 8/22/14**	**Thu 11/20/14**	**95**		
97	Mobilization and Preparation Work	10 days	Fri 8/22/14	Mon 9/1/14	95		
98	Construct Tidal Channels	27 days	Mon 9/1/14	Sun 9/28/14	97		
99	Construct Oyster Habitat	5 days	Sun 9/28/14	Fri 10/3/14	98		
100	Aquatic Planting 18.2 Acres	10 days	Fri 10/3/14	Mon 10/13/14	99		
101	Aquatic Planting 34.8 Acres	18 days	Mon 10/13/14	Fri 10/31/14	100		
102	Biological Survey & Unpland Area Planting	10 days	Fri 10/31/14	Mon 11/10/14	101		
103	Demobilization & Site Cleanup	10 days	Mon 11/10/14	Thu 11/20/14	102		
104	**USCG Relocation of Aids to Navigation**	**90 days**	**Fri 8/22/14**	**Thu 11/20/14**	**95**		
105	Relocate Aids to Navigation	90 days	Fri 8/22/14	Thu 11/20/14			

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Task		Rolled Up Task		External Tasks	
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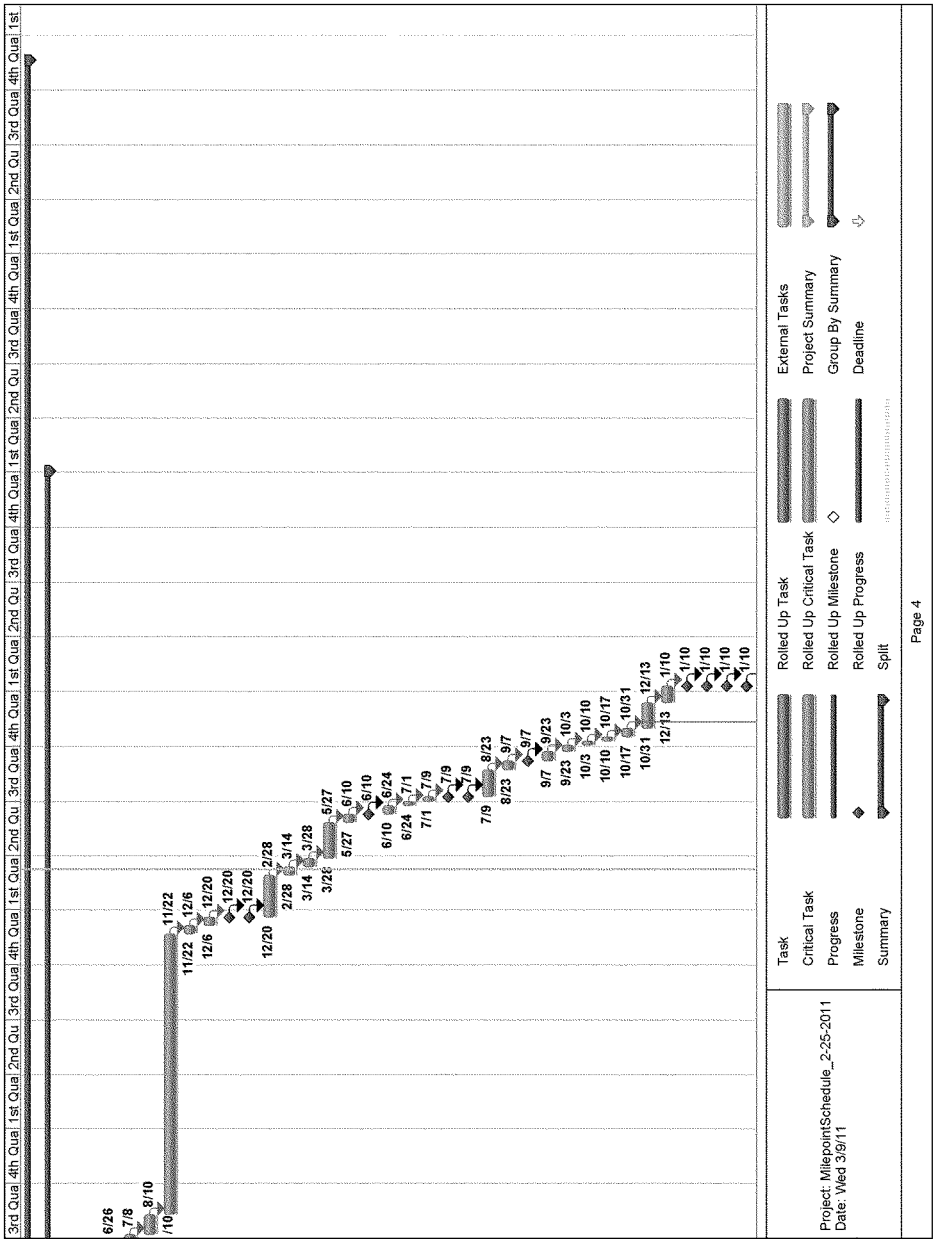
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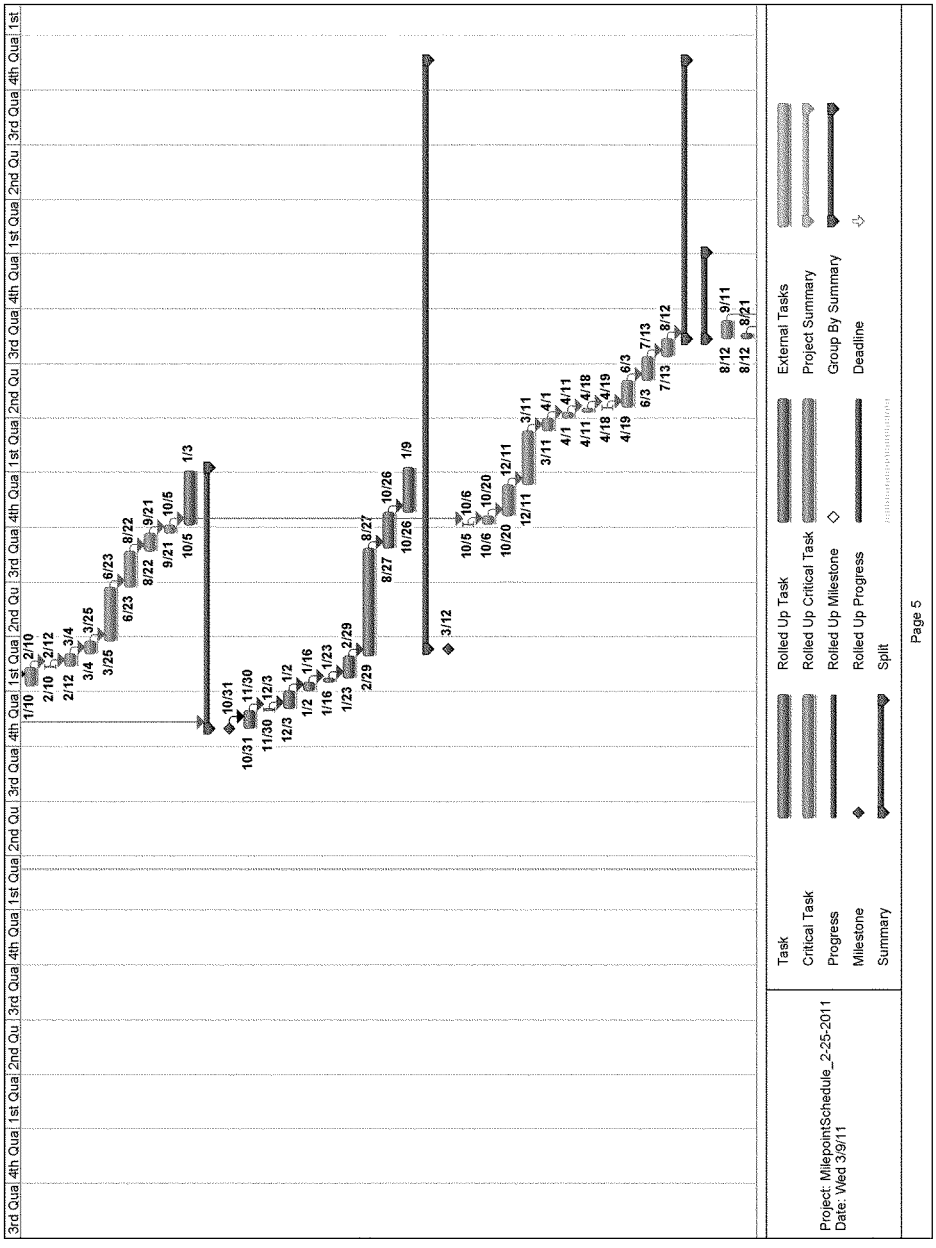
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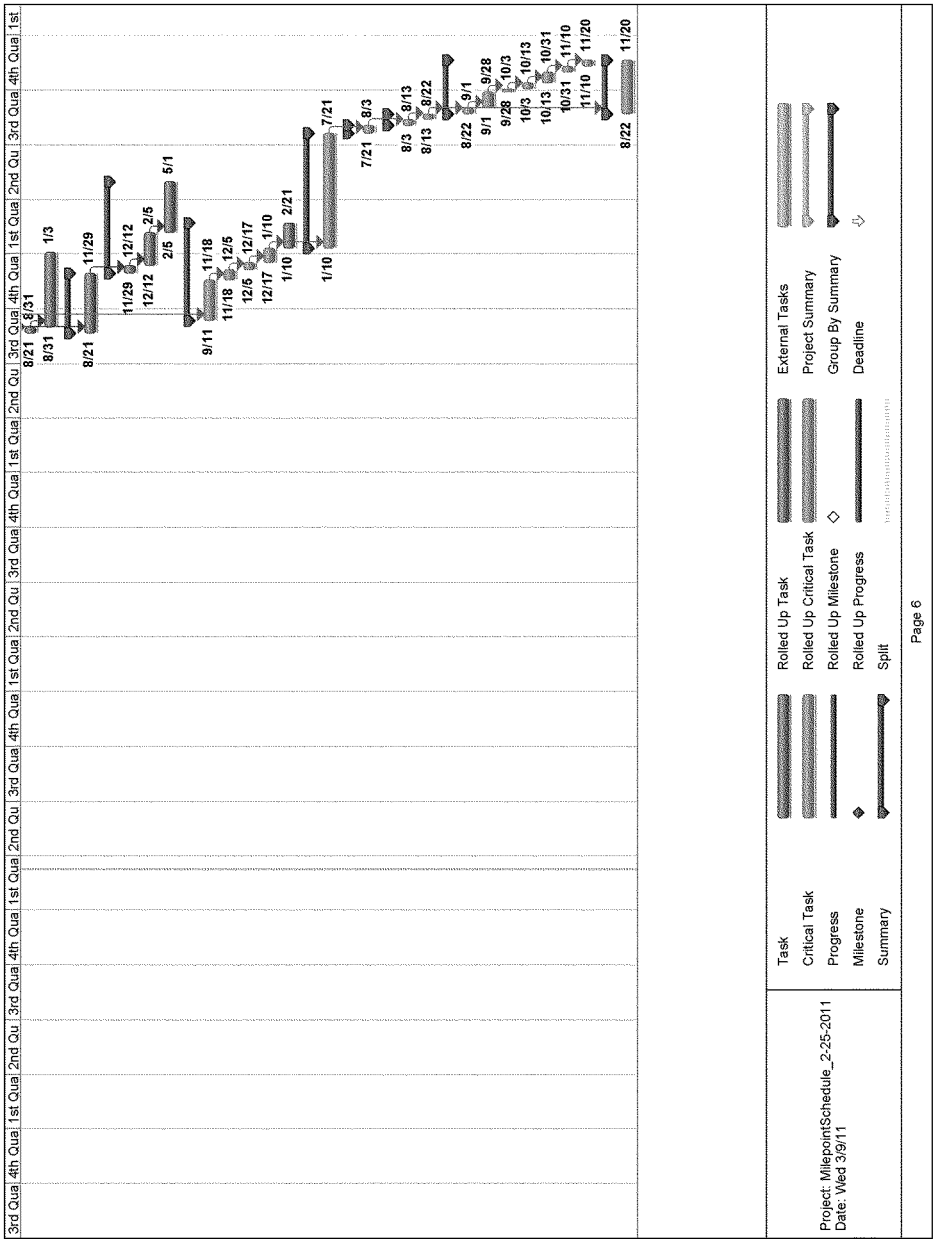
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A.5 RISK AND UNCERTAINTY ANALYSIS

A.5.1 Risk Analysis Methods

The risk analysis was conducted according to the procedure outlines in the manual entitled, 'Cost and Schedule Risk Analysis Process,' dated 17 May 2009 and downloaded from the Corps' Cost Center of Expertise website. First, members of the PDT met to identify risk items, in both the construction cost estimate and the construction schedule. T hen, the Risk Register was completed. A fter that, the Risk Model was customized using commercially available 'Crystal Ball' software. 'Most likely,' 'high,' and 'low' values were assigned to estimate items using the software's 'Assumption' function and the triangular distribution. 'Forecasts' were defined and the model run.

For the features costed by the Corps it is assumed that the work will be performed by a prudent contractor at a fair and reasonable cost. W hile the cost estimate analyzed in the risk analysis may contain adjustments due to quotations on direct and indirect costs, it contains no separate adjustment due to competitiveness or bid strategies (ETL 1110-2-573, 30 Sep 2008). Market conditions such as the current price of fuel are included in the estimate.

After the model was run the results were documented by extracting the sensitivity chart, the forecast chart and the percentiles table for major items. The percentiles were used to determine the contingency at the 80% confidence level. At this time, risk reduction efforts were discussed within the Engineering PDT for further discussion.

The appropriate contingencies were then applied to the MCACES/MII estimate for the NED and Locally Preferred Plans, producing the 'After Risk Analysis' cost estimate contained herein. Upon completion of this estimate the Total Project Cost Summary was prepared.

A.5.2 Risk analysis results

Refer to the Final Cost Schedule Risk Analysis Report produced by the Walla Walla District Cost Center of Expertise at the attached sub-appendix.

A.6 TOTAL PROJECT COST SUMMARY

The Total Project Cost Summary (TPCS) addresses inflation through project completion (accomplished by escalation to mid-point of construction per ER 1110-2-1302, Appendix C, Page C-2). It is based on the scope of the SAP and the official project schedule. The TPCS includes Federal and non-Federal costs for lands and damages, all construction features, PED, and S&A, along with the appropriate contingencies and escalation associated with each of these activities. The TPCS is formatted according to the WBS and uses Civil Works Construction Cost Indexing System factors for escalation (EM 1110-2-1304) of construction costs and Office of Management and Budget (EC 11-2-18X, 20 Feb 2008) factors for escalation of PED and S&A costs.

The Total Project Cost Summary prepared using the MCACES/MII cost estimate on the Recommended Plans with contingencies set by the risk analysis (and the exceptions as described above) and the official project schedule. In performing the risk analysis by meeting with the PDT to discuss the construction schedule to prepare the risk register, a schedule was derived that is slightly different from the official schedule in that it has slightly shorter construction duration. A risk analysis was run on that schedule taking into consideration variations in construction duration, authorization date and appropriation date, and yet a third schedule developed, this one based on the risk analysis results at the 80% confidence level. A TPCS (Figure X+1) was prepared using this schedule as well. These timelines and costs are summarized in Table 18. They show the impact of delayed authorization and appropriation on the fully funded cost despite a slightly shorter construction duration.

The Cost Risk Analysis based total project contingency of 29 percent determined under the External Risk analysis in was applied to the Total Project Cost Summary along with the contingency adjusted total project schedule presented in Table B.5.3.

****** TOTAL PROJECT COST SUMMARY ******

PROJECT: Mile Point Navigation Improvements
LOCATION: Jacksonville Harbor, Duval County, Florida

DISTRICT: SAJ PREPARED: 3/24/2011
POC: CHIEF, COST ENGINEERING, Tracy T. Leeser, P.E.

This Estimate reflects the scope and schedule in report; INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

Program Year (Budget EC): 2012
Effective Price Level Date: 1 OCT 11

WBS NUMBER	Civil Works Feature & Sub-Feature Description	BASE COST COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	FIRST COST COST ($K)	CNTG ($K)	TOTAL ($K)	FULLY FUNDED PROJECT ESTIMATE Spent Thru: 24-Mar-11 ($K)		COST ($K)	CNTG ($K)	FULL ($K)
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
02	RELOCATIONS	$327	$96	29%	$424	1.6%	$333	$98	$431			$348	$103	$451
06	FISH & WILDLIFE FACILITIES	$2,349	$691	29%	$3,040	1.6%	$2,386	$702	$3,088			$2,498	$735	$3,234
12	NAVIGATION PORTS & HARBORS	$21,917	$6,452	29%	$28,369	1.6%	$22,261	$6,554	$28,815			$23,022	$6,778	$29,799
	#N/A		-			-								
	#N/A		-			-	$0		$0			$0		$0
	CONSTRUCTION ESTIMATE TOTALS:	$24,593	$7,240		$31,833	1.6%	$24,979	$7,354	$32,333			$25,868	$7,616	$33,484
01	LANDS AND DAMAGES	$75	$22	29%	$97	1.6%	$77	$23	$99			$77	$23	$99
30	PLANNING, ENGINEERING & DESIGN	$1,562	$460	29%	$2,022	3.2%	$1,612	$475	$2,087			$1,634	$481	$2,115
31	CONSTRUCTION MANAGEMENT	$1,430	$421	29%	$1,851	3.2%	$1,476	$434	$1,910			$1,598	$470	$2,068
	PROJECT COST TOTALS:	$27,960	$8,143	29%	$35,804	1.7%	$28,144	$8,286	$36,429			$29,177	$8,590	$37,767

CHIEF, COST ENGINEERING, Tracy T. Leeser, P.E.

PROJECT MANAGER, Steven R. Ross, P.E.

CHIEF, REAL ESTATE, John Baker

CHIEF, PLANNING,xxx

CHIEF, ENGINEERING, xxx

CHIEF, OPERATIONS, xxx

CHIEF, CONSTRUCTION, xxx

CHIEF, CONTRACTING,xxx

CHIEF, PM-PB, xxxx

CHIEF, DPM, xxx

ESTIMATED FEDERAL COST:	75%	**$28,325**
ESTIMATED NON-FEDERAL COST:	25%	**$9,442**
ESTIMATED TOTAL PROJECT COST:		**$37,767**

O&M OUTSIDE OF TOTAL PROJECT COST: N/A

Filename: TPCS-Jacksonville Harbor Mile Point 032611 - GRM.xlsx
TPCS

****** TOTAL PROJECT COST SUMMARY ******

****** CONTRACT COST SUMMARY ******

PROJECT: Mile Point Navigation Improvements
LOCATION: Jacksonville Harbor, Duval County, Florida
This Estimate reflects the scope and schedule in report; INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

DISTRICT: SAJ PREPARED: 3/24/2011
POC: CHIEF, COST ENGINEERING, Tracy T. Leeser, P.E.

Estimate Prepared: 24-Mar-11
Effective Price Level: 24-Mar-11

Program Year (Budget EC): 2012
Effective Price Level Date: 1 OCT 11

WBS NUMBER	Civil Works Feature & Sub-Feature Description	RISK BASED COST ($K)	CNTG ($K)	CNTG (%)	TOTAL ($K)	ESC (%)	COST ($K)	CNTG ($K)	TOTAL ($K)	FULLY FUNDED PROJECT ESTIMATE Mid-Point Date	ESC (%)	COST ($K)	CNTG ($K)	FULL ($K)
A	B	C	D	E	F	G	H	I	J	P	L	M	N	O
	PROJECT CONSTRUCTION													
02	RELOCATIONS	$327	$98	29%	$424	1.6%	$333	$98	$431	2015Q1	4.7%	$348	$103	$451
06	FISH & WILDLIFE FACILITIES	$2,349	$691	29%	$3,040	1.6%	$2,386	$702	$3,088	2015Q1	4.7%	$2,498	$735	$3,234
12	NAVIGATION PORTS & HARBORS	$21,917	$6,452	29%	$28,369	1.6%	$22,261	$6,554	$28,815	2014Q2	3.4%	$23,022	$6,778	$29,799
	#N/A													
	#N/A													
	CONSTRUCTION ESTIMATE TOTALS:	$24,593	$7,240	29%	**$31,833**		$24,979	$7,354	$32,333			$25,868	$7,616	$33,484
01	LANDS AND DAMAGES	$75	$22	29%	$97	1.6%	$77	$23	$99	2012Q3	0.4%	$77	$23	$99
30	PLANNING, ENGINEERING & DESIGN													
	Project Management	$131	$39	29%	$170	3.2%	$135	$40	$175	2012Q3	1.0%	$137	$40	$177
	Planning & Environmental Compliance	$196	$58	29%	$254	3.2%	$203	$60	$262	2012Q3	1.0%	$205	$60	$265
	Engineering & Design	$986	$290	29%	$1,276	3.2%	$1,017	$299	$1,317	2012Q3	1.0%	$1,028	$303	$1,330
	Engineering Tech Review ITR & VE			29%										
	Contracting & Reprographics	$71	$21	29%	$92	3.2%	$73	$22	$95	2012Q3	1.0%	$74	$22	$96
	Engineering During Construction	$52	$15	29%	$68	3.2%	$54	$16	$70	2014Q2	8.3%	$59	$17	$76
	Office of Counsel (PPA)	$16	$5	29%	$21	3.2%	$17	$5	$22	2014Q2	8.3%	$18	$5	$24
	Project Operations	$109	$32	29%	$141	3.2%	$113	$33	$146	2012Q3	1.0%	$114	$34	$147
31	CONSTRUCTION MANAGEMENT													
	Construction Management	$1,430	$421	29%	$1,851	3.2%	$1,476	$434	$1,910	2014Q2	8.3%	$1,598	$470	$2,068
	Project Operation:													
	Project Management													
	CONTRACT COST TOTALS:	$27,660	$8,143		**$35,804**		$28,144	$8,286	$36,429			$29,177	$8,590	**$37,767**

Filename: TPCS-Jacksonville Harbor Mile Point 032811 - GRM.xlsx
TPCS

A.7 COST DX TPCS CERTIFICATION

JACKSONVILLE HARBOR (MILE POINT)
NAVIGATION STUDY
USACE - JACKSONVILLE DISTRICT

COST ENGINEERING DX TPCS RE-CERTIFICATION

The Jacksonville Harbor (Mile Point) Navigation Study presented by Jacksonville District has undergone a successful cost Agency Technical Review (ATR) as performed by Cost DX representatives. The ATR included study of the project scope, report, cost estimates, schedules, escalation, and risk-based contingencies in accordance with ER 1110-2-1150 Engineering and Design for Civil Works Projects and ER 1110-2-1302 Civil Works Cost Engineering.

As of 29 March2011, the Walla Walla District, Cost Engineering Directory of Expertise (Dx) for Civil Works, certifies the estimated total project cost of the Jacksonville Harbor (Mile Point) Navigation Study estimated values of:

FY 2012 Price Level:	$36,429,000
Fully Funded Amount:	$37,767,000

It remains the responsibility of the District to correctly reflect these cost values within the Final Report.

29-MAR-2011
Date

Kim C. Callan, PE, CCE, PM1
Chief, Cost Engineering
Walla Walla District

APPENDIX A-2A

PROJECT COST AND SCHEDULE RISK ANALYSIS REPORT

US Army Corps of Engineers®

Jacksonville Harbor, Mile Point Navigation Improvements

Jacksonville, Florida - Feasibility Study,

Revised Final NED Plan - Alternative VE-3B - Concrete Structural Units System VE Alternative

Project Cost and Schedule Risk Analysis Report

Prepared for:

U.S. Army Corps of Engineers,
Jacksonville District

Prepared by:

U.S. Army Corps of Engineers
Cost Engineering Directory of Expertise, Walla Walla

March 28, 2011

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EXECUTIVE SUMMARY

Under the auspices of the US Army Corps of Engineers (USACE), Jacksonville District, this report presents a recommendation for the total project cost and schedule contingencies for the Jacksonville Harbor, Mile Point Navigation Improvements Jacksonville, Florida - Feasibility Study, Revised Final NED Plan - Alternative VE-3B - Concrete Structural Units System VE Alternative (Mile Point). In compliance with Engineer Regulation (ER) 1110-2-1302 CIVIL WORKS COST ENGINEERING, dated September 15, 2008, a formal risk analysis study was conducted for the development of contingency on the total project cost. The purpose of this risk analysis study was to establish project contingencies by identifying and measuring the cost and schedule impact of project uncertainties with respect to the estimated total project cost.

Specific to the Mile Point Project, the most likely total project cost (at price level) is estimated at approximately $28 Million. Based on the results of the analysis, the Cost Engineering Directory of Expertise for Civil Works (Walla Walla District) recommends a contingency value of $8 Million, or 29%. This contingency includes $7.7 Million (28%) for cost growth potential due to risk analyzed in the base cost estimate and $420,000 (1.5%) for cost growth potential due to risk analyzed in the baseline schedule.

Walla Walla Cost Dx performed risk analysis using the *Monte Carlo* technique, producing the aforementioned contingencies and identifying key risk drivers.

The following table ES-1 portrays the development of contingencies. The contingency is based on an 80% confidence level, as per USACE Civil Works guidance.

Table ES-1. Contingency Analysis Table

Most Likely Cost Estimate	**$27,660,467**	
Confidence Level	**Value ($$)**	**Contingency (%)**
5%	$27,319,884	-1.23%
50%	$32,776,924	18.50%
80%	**$35,804,452**	**29.44%**
95%	$38,270,714	38.36%

The following table ES-2 portrays the full costs of the recommended alternative based on the anticipated contracts. The costs are intended to address the congressional request of estimates to implement the project. The contingency is based on an 80% confidence level, as per accepted USACE Civil Works guidance.

Table ES-2. Cost Summary

MILE POINT		COST ($1,000)	CNTG ($1,000)	TOTAL ($1,000)
01	LANDS AND DAMAGES	75	22	97
02	RELOCATIONS	327	95	422
06	FISH AND WILDLIFE FACILITIES	2,349	681	3,030
12	NAVIGATION PORTS AND HARBORS	21,917	6,356	28,273
30	PLANNING, ENGINEERING, & DESIGN	1,562	453	2,015
31	CONSTRUCTION MANAGEMENT	1,430	415	1,845
	TOTAL PROJECT COSTS	**27,660**	**8,022**	**35,682**
	Schedule Completion with Contingency	**20 Nov 2014**	**30 months**	**18 May 2017**

Notes:
1) All costs include the recommended contingency of 29%.
2) Costs exclude O&M and Life Cycle Cost estimates.

KEY FINDINGS/OBSERVATIONS RECOMMENDATIONS

The key cost risk drivers identified through sensitivity analysis are Risks CT-4 (Bidding Climate), EN-C-3 (Equipment Availability), and EN-C-2 (Quantity Estimates), which together contribute 82 percent of the statistical cost variance. CT-4 (Bidding Climate) represents the risk that ultimate bidding climate at time of contract award could cause a variance in costs, due to the market being either more or less favorable. EN-C-3 (Equipment Availability) represents the risk that the equipment available regionally (i.e. 16-inch vs. 24-inch pipeline dredge) could cause a variance in the ultimate contract costs. EN-C-2 (Quantity Estimates) represents the risk that variation in the estimated quantities of materials would cause variance in the ultimate contract costs.

The key schedule risk drivers identified through sensitivity analysis are Risks PD-E-4 (Permit Delays), DP-3 (Schedule Delays), and CT-2 (Protests), which together contribute 77 percent of the statistical schedule variance. PD-E-4 (Permit Delays) represents the risk that delays in obtaining permits may cause significant delay on the project. DP-3 (Schedule Delays) represents the risk of significant project implementation delay due to the uncertainty in obtaining authorization and appropriation, as currently planned. CT-2 (Protests) represents the risk that a bidder protest may significantly delay the start of project execution, if it occurred.

Recommendations, as detailed within the main report, include the implementation of cost and schedule contingencies, further iterative study of risks throughout the project life-cycle, potential mitigation throughout the PED phase, and proactive monitoring and control of risk identified in this study.

MAIN REPORT

1.0 PURPOSE

Under the auspices of the US Army Corps of Engineers (USACE), Jacksonville District, this report presents a recommendation for the total project cost and schedule contingencies for the Jacksonville Harbor, Mile Point Navigation Improvements, Revised NED Plan (Mile Point).

2.0 BACKGROUND

The Revised Final NED Plan - Alternative VE-3B - Concrete Structural Units System VE Alternative (Training Wall Reach Widening) and 3B (Relocate Mile Point Training Wall) were selected as having the greatest net benefits. The NED Plan is to relocate and widen the Training Wall Reach, including dredging and disposal of the Little Jetty Training Wall and Chicopit Bay Circulation Channel, including the construction of a 1,400 LF containment berm for hydraulic disposal at Great Marsh Island.

As a part of this effort, Jacksonville District requested that the USACE Cost Engineering Directory of Expertise for Civil Works (Cost Engineering Dx) provide an agency technical review (ATR) of the cost estimate and schedule for Recommended Project Plan. That tasking also included providing a risk analysis study to establish the resulting contingencies.

3.0 REPORT SCOPE

The scope of the risk analysis report is to calculate and present the cost and schedule contingencies at the 80 percent confidence level using the risk analysis processes, as mandated by U.S. Army Corps of Engineers (USACE) Engineer Regulation (ER) 1110-2-1150, Engineering and Design for Civil Works, ER 1110-2-1302, Civil Works Cost Engineering, and Engineer Technical Letter 1110-2-573, Construction Cost Estimating Guide for Civil Works. The report presents the contingency results for cost risks for all project features. The study and presentation does not include consideration for life cycle costs.

3.1 Project Scope

The formal process included extensive involvement of the PDT for risk identification and the development of the risk register. The analysis process evaluated the most likely Micro Computer Aided Cost Estimating System (MCACES) cost estimate, schedule, and funding profiles using Crystal Ball software to conduct a *Monte Carlo* simulation and

statistical sensitivity analysis, per the guidance in Engineer Technical Letter (ETL) CONSTRUCTION COST ESTIMATING GUIDE FOR CIVIL WORKS, dated September 30, 2008.

The project technical scope, estimates and schedules were developed and presented by the Jacksonville District. Consequently, these documents serve as the basis for the risk analysis.

The scope of this study addresses the identification of problems, needs, opportunities and potential solutions that are viable from an economic, environmental, and engineering viewpoint.

3.2 USACE Risk Analysis Process

The risk analysis process for this study follows the USACE Headquarters requirements as well as the guidance provided by the Cost Engineering Dx. The risk analysis process reflected within this report uses probabilistic cost and schedule risk analysis methods within the framework of the Crystal Ball software. Furthermore, the scope of the report includes the identification and communication of important steps, logic, key assumptions, limitations, and decisions to help ensure that risk analysis results can be appropriately interpreted.

Risk analysis results are also intended to provide project leadership with contingency information for scheduling, budgeting, and project control purposes, as well as to provide tools to support decision making and risk management as the project progresses through planning and implementation. To fully recognize its benefits, cost and schedule risk analysis should be considered as an ongoing process conducted concurrent to, and iteratively with, other important project processes such as scope and execution plan development, resource planning, procurement planning, cost estimating, budgeting and scheduling.

In addition to broadly defined risk analysis standards and recommended practices, this risk analysis was performed to meet the requirements and recommendations of the following documents and sources:

- Cost and Schedule Risk Analysis Process guidance prepared by the USACE Cost Engineering Dx.
- Engineer Regulation (ER) 1110-2-1302 CIVIL WORKS COST ENGINEERING, dated September 15, 2008.
- Engineer Technical Letter (ETL) CONSTRUCTION COST ESTIMATING GUIDE FOR CIVIL WORKS, dated September 30, 2008.

4.0 METHODOLOGY / PROCESS

The Cost Dx assembled a team, also relying on local Jacksonville District staff to further augment labor, expertise and information gathering. The Cost Dx team consisted of one senior civil cost engineer. The Jacksonville staff included two cost estimators, as well as coordination support from project management and the assigned project delivery team (PDT).

The Jacksonville PDT conducted a risk identification and qualitative analysis meeting prior to beginning the risk analysis effort. The two estimators then traveled to Walla Walla District to begin the risk analysis effort 22-23 April 2009. The Cost Dx conducted several subsequent iterations of the cost risk model at the request of the Jacksonville PDT, based on results of new research and the implementation of risk mitigation efforts. The first cost risk model was completed and results reported on June 8, 2009.

The results of the original cost and schedule risk analysis (CSRA) completed in June 2009 revealed that External Risk PD-E-3 (Environmental Restrictions) was a critical risk, adding a minimum of $5 Million in cost impacts and 36 months in schedule impact. This was due to the uncertainty of a very significant cultural resource discovery, which was moderately probable, as substantial cultural resource investigations had not been completed. This prompted the project leadership to conduct more investigations to mitigate the risk prior to submission for authorization and approval. According to project leadership, these investigations have concluded that such a discovery is extremely unlikely, lowering the overall risk threshold and risk rating from "High" to "Low."

Additionally, the Jacksonville has obtained information regarding bidding climate and market conditions, External Risk CT-4 (Bidding Climate), suggesting that ultimate construction costs are trending toward more favorable pricing (due to economic strains on the industry). Therefore, Cost Dx remodeled the CSRA with the new data and results reported to the Jacksonville PDT on August 5, 2010.

Finally, the final revision to the NED plan and estimate occurred January through February 2011. The updated estimates and inputs were provided to the Cost Dx for update of the CSRA March 3, 2011. The CSRA, with the new changes incorporated, was reworked with preliminary results provided March 17, 2011. Some changes to the estimate were required through the process of the Cost Engineering portion of the Agency Technical Review (ATR). The changes were made and incorporated into the CSRA March 24, 2011. The changes were incorporated within the CSRA with final results and the final CSRA report provided to the Jacksonville PDT on March 27, 2011.

The risk analysis process for this study is intended to determine the probability of various cost outcomes and quantify the required contingency needed in the cost estimate to achieve any desired level of cost confidence.

In simple terms, contingency is an amount added to an estimate to allow for items, conditions or events for which the occurrence or impact is uncertain and that experience suggests will likely result in additional costs being incurred or additional time being required. The amount of contingency included in project control plans depends, at least in part, on the project leadership's willingness to accept risk of project overruns. The less risk that project leadership is willing to accept the more contingency should be applied in the project control plans. The risk of overrun is expressed, in a probabilistic context, using confidence levels.

The Cost Dx guidance for cost and schedule risk analysis generally focuses on the 80-percent level of confidence (P80) for cost contingency calculation. It should be noted that use of P80 as a decision criteria is a risk averse approach (whereas the use of P50 would be a risk neutral approach, and use of levels less than 50 percent would be risk seeking). Thus, a P80 confidence level results in greater contingency as compared to a P50 confidence level. The selection of contingency at a particular confidence level is ultimately the decision and responsibility of the project's District and/or Division management.

The risk analysis process uses *Monte Carlo* techniques to determine probabilities and contingency. The *Monte Carlo* techniques are facilitated computationally by a commercially available risk analysis software package (Crystal Ball) that is an add-in to Microsoft Excel. Cost estimates are packaged into an Excel format and used directly for cost risk analysis purposes. The level of detail recreated in the Excel-format schedule is sufficient for risk analysis purposes that reflect the established risk register, but generally less than that of the native format.

The primary steps, in functional terms, of the risk analysis process are described in the following subsections. Risk analysis results are provided in Section 6.

4.1 Identify and Assess Risk Factors

Identifying the risk factors via the PDT is considered a qualitative process that results in establishing a risk register that serves as the document for the quantitative study using the Crystal Ball risk software. Risk factors are events and conditions that may influence or drive uncertainty in project performance. They may be inherent characteristics or conditions of the project or external influences, events, or conditions such as weather or economic conditions. Risk factors may have either favorable or unfavorable impacts on project cost and schedule.

Checklists or historical databases of common risk factors are sometimes used to facilitate risk factor identification. However, key risk factors are often unique to a project and not readily derivable from historical information. Therefore, input from the entire PDT was obtained using creative processes such as brainstorming or other facilitated risk assessment meetings.

Formal PDT meetings are held for the purposes of identifying and assessing risk factors. The meetings should include capable and qualified representatives from multiple project team disciplines and functions, for example:

- Project/Program managers
- Contracting/acquisition
- Real Estate
- Relocations
- Environmental
- Civil and Coastal Design
- Cost and schedule engineers
- Construction
- Key Sponsors

The initial formal meetings should focus primarily on risk factor identification using brainstorming techniques, but also include some facilitated discussions based on risk factors common to projects of similar scope and geographic location. Subsequent meetings should focus primarily on risk factor assessment and quantification.

4.2 Quantify Risk Factor Impacts

The quantitative impacts of risk factors on project plans were analyzed using a combination of professional judgment, empirical data and analytical techniques. Risk factor impacts were quantified using probability distributions (density functions) because risk factors are entered into the Crystal Ball software in the form of probability density functions.

Similar to the identification and assessment process, risk factor quantification involved multiple project team disciplines and functions. However, the quantification process relied more extensively on collaboration between cost engineering and risk analysis team members with lesser inputs from other functions and disciplines. This process used an iterative approach to estimate the following elements of each risk factor:

- Maximum possible value for the risk factor
- Minimum possible value for the risk factor
- Most likely value (the statistical mode), if applicable
- Nature of the probability density function used to approximate risk factor uncertainty
- Mathematical correlations between risk factors
- Affected cost estimate and schedule elements

The resulting product from the PDT discussions is captured within a risk register as presented in section 6 for both cost and schedule risk concerns. Note that the risk register records the PDT's risk concerns, discussions related to those concerns, and potential impacts to the current cost and schedule estimates. The concerns and discussions support the team's decisions related to event likelihood, impact, and the resulting risk levels for each risk event.

4.3 Analyze Cost Estimate and Schedule Contingency

Contingency is analyzed using the Crystal Ball software, an add-in to the Microsoft Excel format of the cost estimate and schedule. *Monte Carlo* simulations are performed by applying the risk factors (quantified as probability density functions) to the appropriate estimated cost and schedule elements identified by the PDT. Contingencies are calculated by applying only the moderate and high level risks identified for each option (i.e., low-level risks are typically not considered, but remain within the risk register to serve historical purposes as well as support follow-on risk studies as the project and risks evolve).

For the cost estimate, the contingency is calculated as the difference between the P80 cost forecast and the baseline cost estimate. Each option-specific contingency is then allocated on a civil works feature level based on the dollar-weighted relative risk of each feature as quantified by *Monte Carlo* simulation. Standard deviation is used as the feature-specific measure of risk for contingency allocation purposes. This approach results in a relatively larger portion of all the project feature cost contingency being allocated to features with relatively higher estimated cost uncertainty.

5.0 PROJECT ASSUMPTIONS

The following data sources and assumptions were used in quantifying the costs associated with the with- and without-project conditions at Jacksonville Harbor, Mile Point Navigation Improvements.

a. The MII MCACES (Micro-Computer Aided Cost Estimating Software) file "JHFMILEPT2011-5-Final NED Plan FY11 no contingency.mlp" was the basis for the cost and schedule risk analyses herein.

b. The cost comparisons and risk analyses performed and reflected within this report are based on design scope and estimates that are at the feasibility level.

c. The schedule was analyzed for impact to the project cost in terms of both uncaptured escalation (variance from OMB factors and the local market) and monthly recurring

costs (unavoidable fixed contract costs and/or languishing federal administration costs incurred throughout delay).

d. Per the CWCCIS Historical State Adjustment Factors in EM 1110-2-1304, State Adjustment Factor for Florida is 0.94, meaning that this project is not susceptible to differential between the local market and OMB inflation factors for future construction.

e. Per the data in the estimate, the Job Office Overhead (JOOH) amount for the Contract Cost comprises approximately 3.46% of the Project Cost at Baseline. Thus, the assumed monthly recurring rate for this project is 3.46%. For the P80 schedule, this comprises approximately 1.52% of the total contingency due to the accrual of residual fixed costs associated with delay.

f. The Cost Dx guidance generally focuses on the eighty-percent level of confidence (P80) for cost contingency calculation. For this risk analysis, the eighty-percent level of confidence (P80) was used. It should be noted that the use of P80 as a decision criteria is a moderately risk averse approach, generally resulting in higher cost contingencies. However, the P80 level of confidence also assumes a small degree of risk that the recommended contingencies may be inadequate to capture actual project costs.

g. Only high and moderate risk level impacts, as identified in the risk register, were considered for the purposes of calculating cost contingency. Low level risk impacts should be maintained in project management documentation, and reviewed at each project milestone to determine if they should be placed on the risk "watch list" for further monitoring and evaluation.

6.0 RESULTS

The cost and schedule risk analysis results are provided in the following sections. In addition to contingency calculation results, sensitivity analyses are presented to provide decision makers with an understanding of variability and the key contributors to the cause of this variability.

6.1 Risk Register

A risk register is a tool commonly used in project planning and risk analysis. The actual risk register is provided in Appendix A. The complete risk register includes low level risks, as well as additional information regarding the nature and impacts of each risk.

It is important to note that a risk register can be an effective tool for managing identified risks throughout the project life cycle. As such, it is generally recommended that risk registers be updated as the designs, cost estimates, and schedule are further refined,

especially on large projects with extended schedules. Recommended uses of the risk register going forward include:

- Documenting risk mitigation strategies being pursued in response to the identified risks and their assessment in terms of probability and impact.
- Providing project sponsors, stakeholders, and leadership/management with a documented framework from which risk status can be reported in the context of project controls.
- Communicating risk management issues.
- Providing a mechanism for eliciting feedback and project control input.
- Identifying risk transfer, elimination, or mitigation actions required for implementation of risk management plans.

6.2 Cost Contingency and Sensitivity Analysis

Table 1 provides the raw construction cost contingencies calculated for the P80 confidence level and rounded to the nearest thousand. The construction cost contingencies for the P50 and P100 confidence levels are also provided for illustrative purposes only.

Contingency was quantified as approximately $8 Million at the P80 confidence level (29.4% of the baseline cost estimate). For comparison, the cost contingency at the P50 and P100 confidence levels was quantified as 18.5% and 54.6% of the baseline cost estimate, respectively.

Table 1. Project Cost Contingency Summary

Risk Analysis Forecast	Baseline Estimate	Project Contingency[1,2] ($)	Total Contingency (%)
50% Confidence Level			
Project Cost	$27,660,467	$5,116,457	18.50%
80% Confidence Level			
Project Cost	$27,660,467	$8,143,985	29.44%
100% Confidence Level			
Project Cost	$27,660,467	$15,105,868	54.61%

Notes:
1) These figures combine uncertainty in the baseline cost estimates and schedule.
2) A P100 confidence level is an abstract concept for illustration only, as the nature of risk and uncertainty (specifically the presence of "unknown unknowns") makes 100% confidence a theoretical impossibility.

6.2.1 Sensitivity Analysis

Sensitivity analysis generally ranks the relative impact of each risk/opportunity as a percentage of total cost uncertainty. The Crystal Ball software uses a statistical measure (contribution to variance) that approximates the impact of each risk/opportunity contributing to variability of cost outcomes during *Monte Carlo* simulation.

Key cost drivers identified in the sensitivity analysis can be used to support development of a risk management plan that will facilitate control of risk factors and their potential impacts throughout the project lifecycle. Together with the risk register, sensitivity analysis results can also be used to support development of strategies to eliminate, mitigate, accept or transfer key risks.

6.2.2 Sensitivity Analysis Results

The risks/opportunities considered as key or primary cost drivers are ranked in order of importance in contribution to variance bar charts. Opportunities that have a potential to reduce project cost and are shown with a negative sign; risks are shown with a positive sign to reflect the potential to increase project cost. A longer bar in the sensitivity analysis chart represents a greater potential impact to total project cost.

Figure 1 presents a sensitivity analysis for cost growth risk from the high level cost risks identified in the risk register. Likewise, Figure 2 presents a sensitivity analysis for schedule growth risk from the high level schedule risks identified in the risk register.

6.3 Schedule and Contingency Risk Analysis

Table 2 provides the schedule duration contingencies calculated for the P80 confidence level. The schedule duration contingencies for the P50 and P100 confidence levels are also provided for illustrative purposes.

Schedule duration contingency was quantified as 30 months based on the P80 level of confidence. These contingencies were used to calculate the projected monthly recurring cost impact of project delays that are included in the Table 1 presentation of total cost contingency. The schedule contingencies were calculated by applying the high level schedule risks identified in the risk register for each option to the durations of critical path and near critical path tasks.

The schedule was not resource loaded and contained open-ended tasks and non-zero lags (gaps in the logic between tasks) that limit the overall utility of the schedule risk analysis. These issues should be considered as limitations in the utility of the schedule contingency data presented. Schedule contingency impacts presented in this analysis are based solely on projected monthly recurring costs.

Table 2. Schedule Duration Contingency Summary

Risk Analysis Forecast	Baseline Schedule Duration (months)	Contingency[1] (months)	Contingency (%)
50% Confidence Level			
Total Project Duration	68	23	33%
80% Confidence Level			
Total Project Duration	68	30	44%
100% Confidence Level			
Total Project Duration	68	45	67%

Notes:
1) The schedule was not resource loaded and contained open-ended tasks and non-zero lags (gaps in the logic between tasks) that limit the overall utility of the schedule risk analysis. These issues should be considered as limitations in the utility of the schedule contingency data presented in Table 2.
2) A P100 confidence level is an abstract concept for illustration only, as the nature of risk and uncertainty (specifically the presence of "unknown unknowns") makes 100% confidence a theoretical impossibility.

Figure 1. Cost Sensitivity Analysis

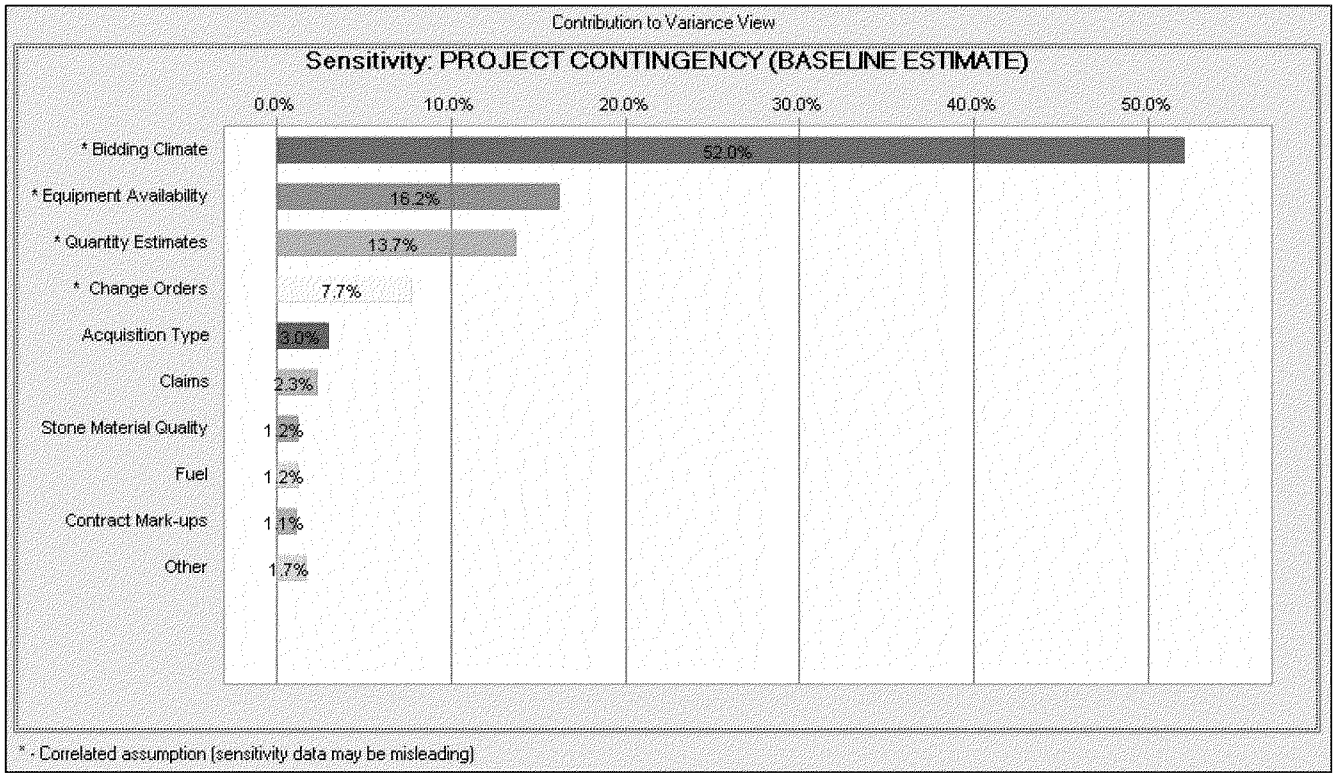
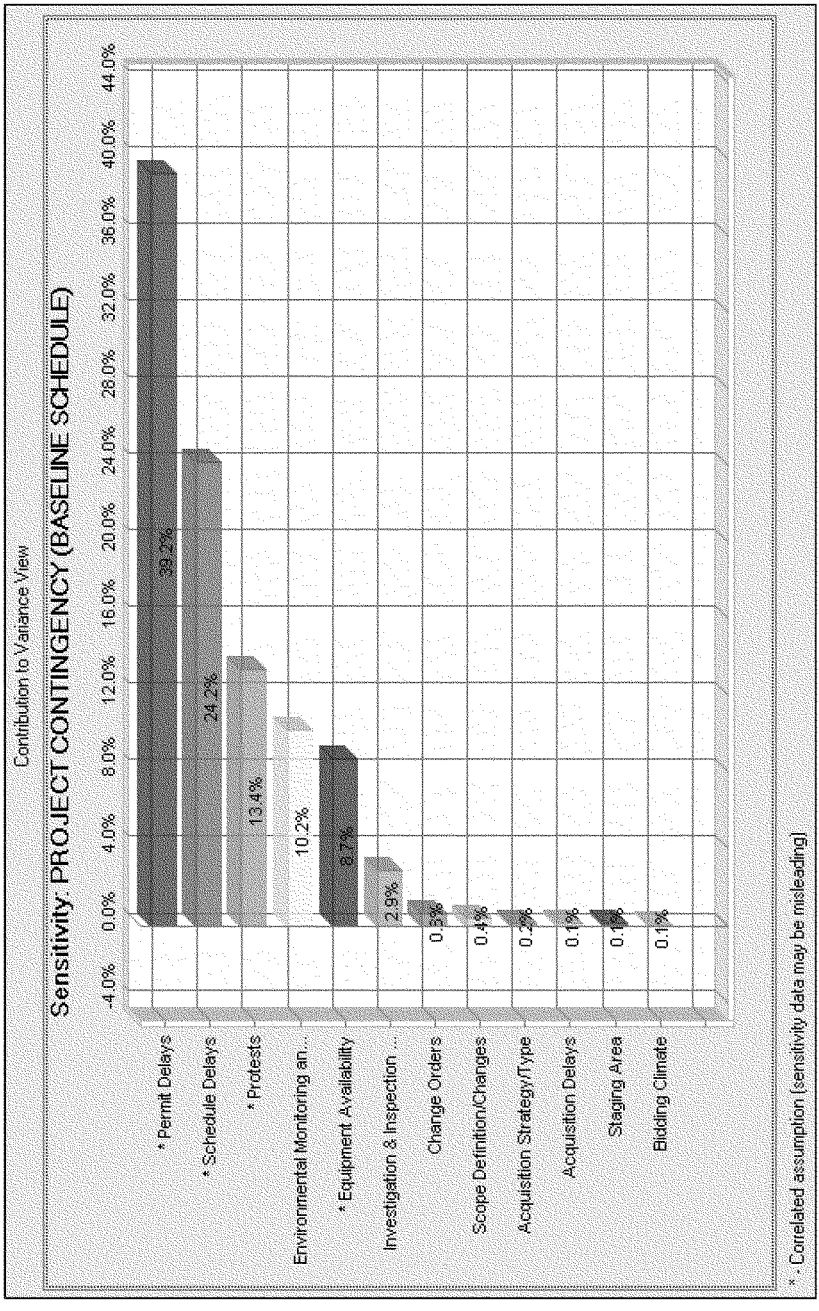


Figure 2. Schedule Sensitivity Analysis



7.0 MAJOR FINDINGS/OBSERVATIONS/RECOMMENDATIONS

This section provides a summary of significant risk analysis results that are identified in the preceding sections of the report. Risk analysis results are intended to provide project leadership with contingency information for scheduling, budgeting, and project control purposes, as well as to provide tools to support decision making and risk management as projects progress through planning and implementation. Because of the potential for use of risk analysis results for such diverse purposes, this section also reiterates and highlights important steps, logic, key assumptions, limitations, and decisions to help ensure that the risk analysis results are appropriately interpreted.

7.1 Major Findings/Observations

Total project cost comparison summaries are provided in Table 3 and Figure 3. Additional major findings and observations of the risk analysis are listed below.

1. The key cost risk drivers identified through sensitivity analysis are Risks CT-4 (Bidding Climate), EN-C-3 (Equipment Availability), and EN-C-2 (Quantity Estimates), which together contribute 82 percent of the statistical cost variance.

2. The key schedule risk drivers identified through sensitivity analysis are Risks PD-E-4 (Permit Delays), DP-3 (Schedule Delays), and CT-2 (Protests), which together contribute 77 percent of the statistical schedule variance.

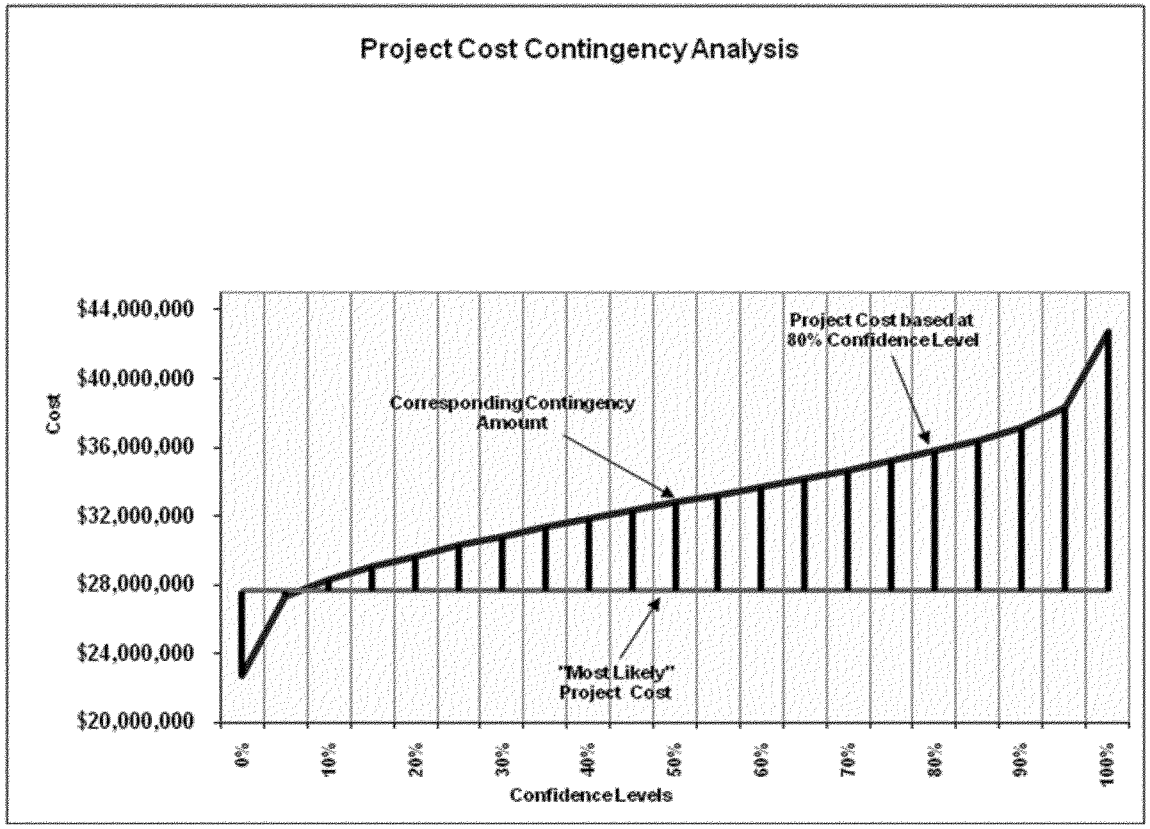
3. The schedule was not resource loaded and contains open-ended tasks, and non-zero lags (gaps in the logic between tasks) that limit the overall utility of the schedule risk analysis. These issues should be considered as limitations in the utility of the schedule contingency data presented. Schedule contingency impacts presented in this analysis are based solely on projected monthly recurring costs. Resource impacts related to potential schedule delays could not be evaluated.

4. Operation and maintenance activities were not included in the cost estimate or schedules. Therefore, a full lifecycle risk analysis could not be performed. Risk analysis results or conclusions could be significantly different if the necessary operation and maintenance activities were included.

Table 3. Project Cost Comparison Summary

Confidence Level	Project Cost ($)	Contingency (%)
P0	**$22,656,136**	**-18.09%**
P5	**$27,319,884**	**-1.23%**
P10	**$28,323,970**	**2.40%**
P15	**$29,061,427**	**5.06%**
P20	**$29,672,679**	**7.27%**
P25	**$30,270,680**	**9.44%**
P30	**$30,843,997**	**11.51%**
P35	**$31,341,319**	**13.31%**
P40	**$31,826,234**	**15.06%**
P45	**$32,311,775**	**16.82%**
P50	**$32,776,924**	**18.50%**
P55	**$33,240,512**	**20.17%**
P60	**$33,728,730**	**21.94%**
P65	**$34,216,760**	**23.70%**
P70	**$34,689,217**	**25.41%**
P75	**$35,237,230**	**27.39%**
P80	**$35,804,452**	**29.44%**
P85	**$36,427,500**	**31.70%**
P90	**$37,189,845**	**34.45%**
P95	**$38,270,714**	**38.36%**
P100	**$42,766,335**	**54.61%**

Figure 3. Project Cost Summary



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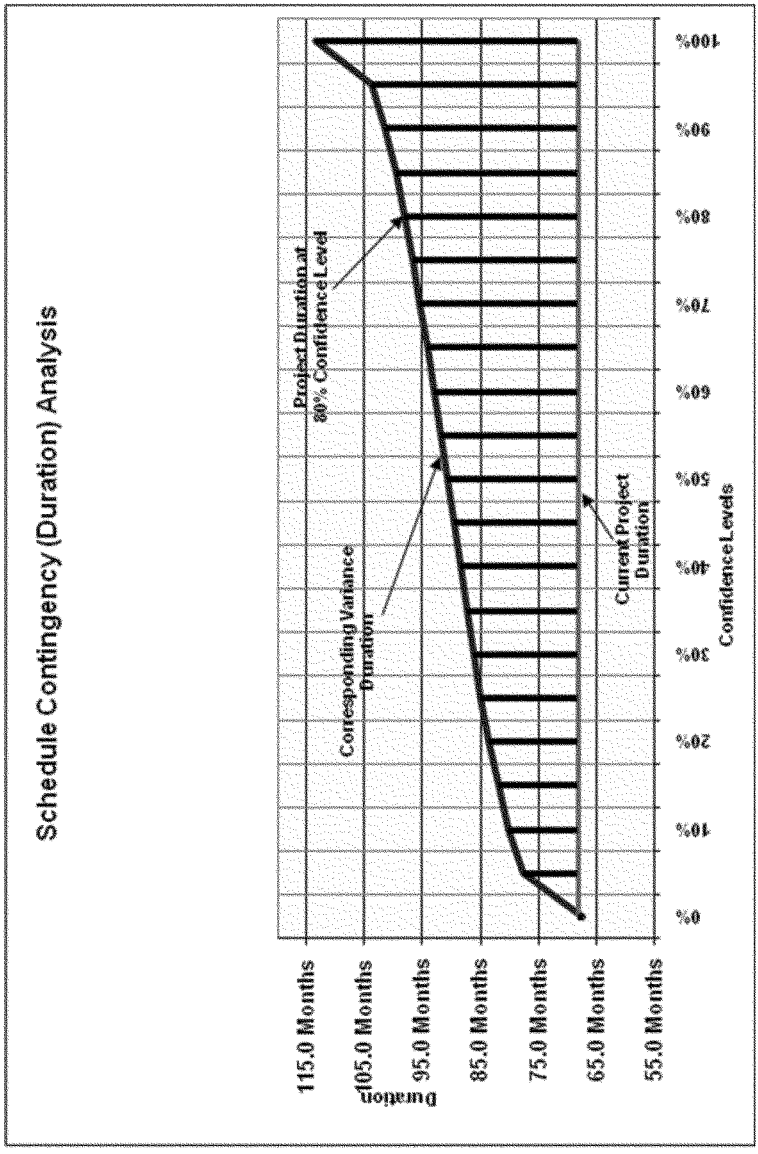


Figure 4. Project Duration Summary

7.2 Recommendations

Risk Management is an all-encompassing, iterative, and life-cycle process of project management. The Project Management Institute's (PMI) *A Guide to the Project Management Body of Knowledge (PMBOK® Guide), 4th edition*, states that "project risk management includes the processes concerned with conducting risk management planning, identification, analysis, responses, and monitoring and control on a project." Risk identification and analysis are processes within the knowledge area of risk management. Its outputs pertinent to this effort include the risk register, risk quantification (risk analysis model), contingency report, and the sensitivity analysis.

The intended use of these outputs is implementation by the project leadership with respect to risk responses (such as mitigation) and risk monitoring and control. In short, the effectiveness of the project risk management effort requires that proactive management of risks does not conclude with the study completed in this report.

The Cost and Schedule Risk Analysis (CSRA) produced by the PDT identifies issues that require the development of subsequent risk response and mitigation plans. This section provides a list of recommendations for continued management of the risks identified and analyzed in this study. Note that this list is not all inclusive and should not substitute a formal risk management and response plan.

1. Key Cost Risk Drivers: The key cost risk drivers identified through sensitivity analysis are Risks CT-4 (Bidding Climate), EN-C-3 (Equipment Availability), and EN-C-2 (Quantity Estimates), which together contribute 82 percent of the statistical cost variance.

a) Bidding Climate: Project leadership should continuously monitor price fluctuations and behaviors in the regional industry, and certainly as part of the PDT's ongoing market research. Project leadership should craft the acquisition strategy with respect to the market trends to minimize the impact of industry contraction or saturation and to maximize competition.

b) Equipment Availability: Project leadership should conduct market research to determine the regional trends regarding the availability of equipment to meet the requirements in parallel to the general market research being conducted. The PDT may also consider changing the engineering requirements or methodologies to increase competition and/or the likelihood of equipment being available.

c) Quantity Estimates: Project leadership should conduct further research and/or survey to validate the scope and quantities estimated, as well as the production/estimate structure within the project scoping documents.

2. Key Schedule Risk Drivers: The key schedule risk drivers identified through sensitivity analysis are Risks PD-E-4 (Permit Delays), DP-3 (Schedule Delays), and CT-2 (Protests), which together contribute 77 percent of the statistical schedule variance.

a) Permit Delays: Project leadership should take proactive measures with respect to obtaining required permits as well as proactive monitoring and control. Changes to anticipated permit timelines should be communicated to management in a timely manner.

b) Schedule Delays: Project leadership should take proactive measures with respect to the schedule and the timeline for budget approval and disbursement of project funds. Changes to the anticipated timeline with respect to schedule should be controlled and reported to management for expeditious schedule recovery efforts.

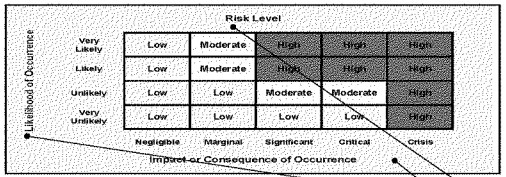
c) Protests: Project leadership should account for the probability of contractor protests both in budgeting protest and bid preparation fees, as well as crafting an acquisition plan and solicitation that minimizes the likelihood of protest.

3. Risk Management: Project leadership should use of the outputs created during the risk analysis effort as tools in future risk management processes. The risk register should be updated at each major project milestone. The results of the sensitivity analysis may also be used for response planning strategy and development. These tools should be used in conjunction with regular risk review meetings.

4. Risk Analysis Updates: Project leadership should review risk items identified in the original risk register and add others, as required, throughout the project life-cycle. Risks should be reviewed for status and reevaluation (using qualitative measure, at a minimum) and placed on risk management watch lists if any risk's likelihood or impact significantly increases. Project leadership should also be mindful of the potential for secondary (new risks created specifically by the response to an original risk) and residual risks (risks that remain and have unintended impact following response).

APPENDIX A

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - PDT Risk Register



Risk No.	Risk/Opportunity Event	Discussion and Concerns	Project Cost				Project Schedule				Correlation to Other(s)	Responsibility/POC	Affected Project Component	Project Implications	
			Likelihood*	Impact*	Risk Level*	Rough Order Impact ($)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)					
Internal Risks (Internal Risk Items are those that are generated, caused, or controlled within the PDT's sphere of influence.)															
CD-1	Change Orders	Time and cost impacts vary greatly on individual issues. Changes near end of project don't impact schedule.	Very Likely	Significant	HIGH	5 - 10%	Very Likely	Significant	HIGH	3 mo.	EN-W-1	Construction Division	Construction Cost & Schedule	Cost & Schedule	
CD-2	Safety Issues	Don't usually shut project down	Likely	Negligible	LOW	Minimal	Likely	Negligible	LOW	< 10 days		Construction Division	Construction Cost & Schedule	Cost & Schedule	*Updated Schedule impact to reflect ROI*
CD-3/ LS-2	Staging Area	Potential for problems with location, issues w/ runway, lights needed for cranes @ certain ht; aircraft- impact ht. restriction, Impacts contractor's operation	Unlikely	Significant	MODERATE	1 - 2%	Very Likely	Marginal	MODERATE	1 mo.		Construction Division	Project Cost & Schedule	Cost & Schedule	
CD-4	Claims	Claims are likely to occur, but not cause a drastic delay in project schedule.	Likely	Significant	HIGH	5 - 15%	Very Likely	Negligible	LOW	0 mo.	DP-3	Construction Division	Project Cost & Schedule	Cost & Schedule	
CT-1	Acquisition Type	Impacts effort in award, some contract vehicles more conducive to lower cost, Prefer Best Value RFP w/ source selection plan, Increased cost/time to implement multiple awards	Unlikely	Significant	MODERATE	10%	Unlikely	Significant	MODERATE	2 mo.		Acquisition Strategy Board	Construction Cost & Schedule	Cost & Schedule	*Combined CT-6 Acquisition Strategy cost info as it was determined to be duplicated*
CT-3	Acquisition Delays	If the Sole-Source J&A does not get approved, could impact the schedule by up to 12 months while the PDT comes up with another alternative	N/A	N/A	N/A	N/A	Likely	Significant	HIGH	12 mo		Acquisition Strategy Board	Construction Cost & Schedule	Cost & Schedule	*Updated to reflect only schedule impact, no cost impact. Updated Likelihood, Impact and ROI based on input provided by Beau Corbett CT on 1/31/2011*
CT-5	Acquisition Plan	Could split into multiple contracts if small business can do dredging	Very Unlikely	Significant	LOW	< 1%	N/A	N/A	N/A	N/A		Acquisition Strategy Board	Construction Cost	Cost	
CT-6/ EN-D-4	Proprietory Materials Procurement	This item is added in support of the possible sole source of the concrete structures, since there were no responses to the sources sought solicitation. If it is determined that a Sole-Source Justification and Approval (J&A) is required, the schedule may need to be increased to accomodate this effort. It could take 2-8 months to get sole sources approved through HQ	N/A	N/A	N/A	N/A	Likely	Critical	HIGH	6 mo.		Contracting Division	Construction Cost	Cost & Schedule	*Added this risk item and assigned Likelihood, Impact and ROI based on input provided by Beau Corbett CT on 1/31/2011 and Steve Conger EN-D 2/4/2011. Removed from risk register 3/2/11 due to responses from sources sought solicitation*
CT-7/ DP-1	Project Component Sequencing	Subsequent proj. execution, if separate contracts for each phase/mult. contract.(dredge/placement)	Unlikely	Marginal	LOW	$200,000	N/A	N/A	N/A	N/A		PM/Planner/Contracting	Project Schedule	Schedule	
DP-2	Funding Stream	In short term, delays based on $ amt. of contract are likely; delay in execution of proj. components	N/A	N/A	N/A	N/A	Likely	Marginal	MODERATE	Captured by DP-3	DP-3	PM	Project Schedule	Schedule	*Removed from Study -Captured by DP-3*
DP-3	Schedule Delays	Hard to fund if not in 2013 budget- automatic sched. delay; In short term, delays based on $ amt. of contract are likely; delay in execution of proj. components	Very Unlikely	Marginal	LOW	< 1%	Likely	Marginal	MODERATE	4 mo.	CT-2, EN-C-3, CD-4, EN-C-4, EN-D-1, EN-D-2, PD-E-2, PD-E-3, PD-E-4, DP-2		Project Cost & Schedule	Cost & Schedule	*Updated Notes 1/9/2011 per input from Steve Ross DP-C*
DP-4/ EN-D-2	Scope Definition/Changes	Scope is not defined, little likelihood of scope increase or changes from current docs used for estimate development. Engineering pt. of view if the project lingers, conditions may change	Very Unlikely	Critical	LOW	$3,000,000	Unlikely	Significant	MODERATE	3 mo.	EN-C-2, EN-D-3	PM/Planner	Construction Cost & Schedule	Cost & Schedule	*Updated ROI 1/9/2011 per input from Steve Ross DP-C and Steve Conger EN-CW*
EN-C-1	Production Estimates	Unit price per cubic yard	Likely	Marginal	MODERATE	$4 M	N/A	N/A	N/A	N/A		Cost Engineering	Equipment/Production Rates	Cost	
EN-C-2	Quantity Estimates	Quantity over/under runs	Likely	Significant	HIGH	15%	N/A	N/A	N/A	N/A	EN-D-1, DP-4/ EN-D-2	Cost Engineering/Design Branch	Construction Cost	Cost	
EN-C-5	Awardable Range Increase	An additional 15% above the approximate 10% profit	Likely	Significant	HIGH	Captured by CT-4	N/A	N/A	N/A	N/A		Cost Engineering	Funding	Cost	*Risk item covered by CT-4 Bidding Climate*
EN-C-8	Contract Mark-ups		Likely	Marginal	MODERATE	$1.7 M	N/A	N/A	N/A	N/A					
EN-D-1	Design Costs	Haven't fully calculated full PED, compared to 8%, unlikely to exceed 4 million in PED costs	Unlikely	Marginal	LOW	<10%	Unlikely	Marginal	LOW	Inliminal to none	EN-D-3, EN-C-2	Cost Engineering/Design Branch	Construction Cost & Schedule	Cost & Schedule	
EN-D-3	Quantity Changes	Depends on time lapse- future condition vs. current; area is dynamic & can change	Likely	Significant	HIGH	Captured by EN-C-2	N/A	N/A	N/A	N/A	EN-D-1, DP-4/ EN-D-2	Design Branch	Construction Cost	Cost	*Risk item covered by EN-C-1 Quantity Estimates*

EN-G-3	Investigation & Inspection Costs	I looked back at the JAX Harbor drilling completed in 2010. We had IGE est of ~$300,000 for the mobilization alone for the drilling jack up. We were fortunate to get a lower cost rig, but under duress of construction, we may have to take what we can find. Therefore, $300,000 isn't unreasonable. Cost per day for equipment is ~$8000 times 10 days max=$80,000, and $5,000 per day for crew times 10 days = $50,000. These are the big ticket items. Worst case would put total project costs for additional 10 holes would be less than $700,000 instead of the $1.3M shown. The risk of this happening is low.	Unlikely	Marginal	LOW	$700,000	Unlikely	Significant	MODERATE	6 mo.		Geotechnical Branch	Project Cost & Schedule	Cost & Schedule	*Updated Likelihood, Impact and ROI based on new feedback from Steve Myers EN-GG in email dated 3/1/2011; Cost aspect removed from risk analysis*
EN-W-1	Modeling Accuracy	Pretty heavily refined model- 3D model, high level of confidence	N/A	N/A	N/A	N/A	Very Unlikely	Critical	LOW	1 mo.	CD-1; EN-W-2	H&H Branch	Construction Schedule	Schedule	*Changed Schedule Impact to reflect ROI and feedback from Brian Cornwell EN-W*
EN-W-2	Erosion Estimates	Erosion of adjacent shorelines and resultant shoaling; risk is that model is not accurate and proj. does not reduce erosion on Mile Pt. area	N/A	N/A	N/A	N/A	Very Unlikely	Significant	LOW	1 mo.	EN-W-1	H&H Branch	Construction Schedule	Schedule	
LS-1	Site Access	Has loading facility to load stone on barges- not a prob. since we own to gate on Blount Island, have rail into Talleyrand to load there as well	Unlikely	Marginal	LOW	$0	Unlikely	Marginal	LOW	0 mo.		Sponsor	Project Cost & Schedule	Cost & Schedule	
LS-3	Highway Restrictions	Will probably truck in small aggregate, not expected to tear up road; stone by rail to terminal, then use barges	Very Unlikely	Significant	LOW	$0	Unlikely	Marginal	LOW	0 mo.		Sponsor	Project Cost & Schedule	Cost & Schedule	*Downgraded Schedule Likelihood due to research*
LS-4	Cost Sharing	Prepared for it, risk may be a factor when it is time to sign agreement	N/A	N/A	N/A	N/A	Very Likely	Negligible	LOW	1 mo.		Sponsor	Project Schedule	Schedule	
LS-5	Public Support and Involvement	Currently a high level of support for project; only foresee small amt. of people having problem; people writing to Congress regularly	N/A	N/A	N/A	N/A	Likely	Negligible	LOW	1 mo.	DP-5/ PD-N-2	Sponsor	Project Schedule	Schedule	
OC-1	Project Partnership Agreement	Delay in project implementation	N/A	N/A	N/A	N/A	Very Unlikely	Critical	LOW	0.5-2 mo.		Counsel	Project Schedule	Schedule	
OD-1	Project Maintenance Requirements	50 yr. standpoint- not much maint. for training wall; dredging- area will naturally remain scoured	Very Unlikely	Marginal	LOW	1.0%	Very Unlikely	Marginal	LOW	1.0%		Operations Division	Project Cost & Schedule	Cost & Schedule	*Updated Cost and Schedule ROI 2/1/2011 per email input from John Bearce OD-H*
OD-2	Monitoring Surveys	Don't plan on monitoring anymore than what we already require	Unlikely	Marginal	LOW	1.0%	Likely	Negligible	LOW	1.5%		Operations Division	Project Cost & Schedule	Cost & Schedule	*Updated Cost and Schedule ROI 2/1/2011 per email input from John Bearce OD-H*
OD-3	O&M Funding	Already have funding for surveys, so unlikely to cause delays or additional costs to proj.	Unlikely	Negligible	LOW	1.0%	Unlikely	Negligible	LOW	1.0%		Operations Division	Project Cost & Schedule	Cost & Schedule	*Updated Cost and Schedule ROI 2/1/2011 per email input from John Bearce OD-H*
PD-N-1	Economic Changes to Benefits	Feasibilty level of study w/ high level of design; port level and administrative level; Any impacts to benefit analysis (ie, change in fleet, commodity growth rates) would affect study costs, not project construction costs. Ie Hanjin construction completion seems to be a moving target, and already changed from 2015 (what is says in the Milepoint draft report) to 2017 (what it will say in the Jax Harbor GRR2 report) and who knows what in the future (the original Hanjin completion was suppose to be by end of 2011). That's not to say that the traffic cannot be made up by another entity (such as MCL) -- but that would not likely occur until the MCL/TraPac terminal reaches capacity (it is less than a quarter of capacity right now).	Likely	Significant	HIGH	$0	N/A	N/A	N/A	0 mo.		Planning Economics	Project Cost	Cost	*Updated Cost Likelihood rating based on 2/22/2011 email input from Dan Abecassis*
PD-N-3	Project Approval	Already capturing cost growth. Project expected to gain approval so unlikely that it will not get approved, however if delays to project approval then significant impacts.	N/A	N/A	N/A	N/A	Unlikely	Marginal	LOW	3 mo.		Planning Economics	Project Schedule	Schedule	*Updated Schedule Impact rating 2/2/2011 per email input from Sam Bonar PD-PN*
RE-1	Land Acquisition Delays	All lands belong to government entities	Very Unlikely	Negligible	LOW	< 1%	Very Unlikely	Negligible	LOW	0 mo.		Real Estate	Project Cost & Schedule	Cost & Schedule	

External Risks (External Risk items are those that are generated, caused, or controlled exclusively outside the PDT's sphere of influence.)															
CT-2	Protests	Delay in project execution; Sole source- can't get approved or if there is a protest it can kill contract- high risk	N/A	N/A	N/A	N/A	Likely	Significant	HIGH	6 mo	DP-3	Contracting Division	Project Schedule	Schedule	
CT-4	Bidding Climate	Severe economic swings can increase / decrease number of potential bidders	Likely	Marginal	MODERATE	-20% to +15%	Likely	Marginal	MODERATE	1 mo.	EN-C-7, EN-C-3				*Updated Impact and ROI based on input provided by Beau Corbes CT on 1/31/2011*
DP-5/ PD-N-2	Project Review and Authorization Delays	Likely b/c of public comment, review policy to adhere to, not a huge sched. impact. Delay in execution of project components. Uncertainties with IEPR may impact schedule	N/A	N/A	N/A	N/A	Unlikely	Marginal	LOW	1 mo.	LS-5	PM/Planning	Project Schedule	Schedule	*Updated Schedule Impact rating 2/2/2011 per email input from Sam Boer PD-PM*
EN-C-3	Equipment Availability	Dredge may have to come from further away, increasing mobilization costs or size / type of equipment available	Likely	Significant	HIGH	$4.8 M	Likely	Marginal	MODERATE	1 mo.	DP-3, CT-4	Cost Engineering	Equipment	Cost & Schedule	*Updated Schedule Likelihood and ROI*
EN-C-4	Weather	Severe weather causing damage to project during construction.	Likely	Marginal	MODERATE	$1.8 M	Likely	Negligible	LOW	1 mo.	DP-3	Cost Engineering	Labor/Production Rates	Cost & Schedule	*Updated Schedule Impact since weather days already accounted for*
EN-C-6	Fuel	$x.xx per gallon was used in the Sep 08 MII, increases will effect equipment operating costs.	Very Likely	Significant	HIGH	$446,000	N/A	N/A	N/A	N/A		Cost Engineering	Equipment	Cost	
EN-C-7	Labor	Labor Prices are fixed by Davis Bacon wage rates. Labor availability is subject to bidding climate	Unlikely	Marginal	LOW	< 1%	N/A	N/A	N/A	N/A	CT-4	Cost Engineering	Labor/Production Rates	Cost	
EN-G-1	Stone Material Quality	Salvage stone- if quality of intended reusable stone is bad then need to purchase additional stone- slip in sched and increase to cost. EN-G feels the estimated 14,600CY of recoverable stone is conservative estimate of what is out there; don't know gradation of stone;	Unlikely	Significant	MODERATE	3.33%	Very Unlikely	Negligible	LOW	1 mo.	DP-3	Geotechnical	Project Cost & Schedule	Cost & Schedule	*Updated ROI 2/3/2011 per email input from Steven Myers EN-GO: $850,000 from EN-GO changed to 3.33% (=$850,000 based on assumption that potentially as much as 20% of estimated quantity of reusable stone is not suitable- would increase current construction cost by about 3.33%*
EN-G-2	Stone Material Availability	Have lots of nearby sources readily available	Very Unlikely	Significant	LOW	5%	Unlikely	Marginal	LOW	1 mo.	DP-3	Geotechnical	Construction Cost & Schedule	Cost & Schedule	*Updated ROI 2/3/2011 per email input from Steven Myers EN-GO: $850,000 from EN-GO changed to 5% of Construction Cost since item listed as significant impact and quick analysis showed increase in shipping costs from $60 to $100/ton yields about 5% increase*
OC-2	Court Injunctions	If we should receive a court injunction, all work on the project will come to a complete halt, an external factor that we cannot control	N/A	N/A	N/A	N/A	Very Unlikely	Critical	LOW	Years		Counsel	Project Schedule	Schedule	
PD-E-1	Environmental Monitoring and Mitigation	Predicting final marsh elevations difficult; may require future funding for long term monitoring	Unlikely	Significant	MODERATE	$1,000,000	Unlikely	Critical	MODERATE	12 mo.		Planning Environmental	Project Cost & Schedule	Cost & Schedule	
PD-E-2	Endangered Species Impact	Manatee takes, although unlikely, could create a slip in schedule during construction	Unlikely	Negligible	LOW	$240,000	Unlikely	Negligible	LOW	3 days	DP-3	Planning Environmental	Project Cost & Schedule	Cost & Schedule	*Updated Cost Impact rating to reflect $240,000 magnitude and Schedule Likelihood and Impact based on 2/10/2011 email input from Grady Caulk PD-EP*
PD-E-3	Environmental Restrictions	A potentially significant submerged prehistoric site has been identified in the proposed Great Marsh Island restoration area. The preferred alternative (restore marsh in Great Marsh Island) will have a "no adverse effect". Resulting in no mitigation cost. Other alternatives, which are very unlikely to be used, may result in an adverse effect determination requiring mitigation. If needed additional evaluation and mitigation activities may take at least 36 months	Very Unlikely	Critical	LOW	$5,000,000+	Very Unlikely	Critical	LOW	36 mo	DP-3	Planning Environmental	Project Schedule	Schedule	*Updated Cost and Schedule Likelihood & Impact rating to reflect feedback in 2/10/2011 email input from Grady Caulk PD-EP*
PD-E-4	Permit Delays	Anticipate time to get permit and meet that- not significant	Likely	Negligible	LOW	$20,000	Unlikely	Critical	MODERATE	12 mo	DP-3	Planning Environmental	Project Schedule	Schedule	*Updated Schedule Impact Rating based on 2/10/2011 email input from Grady Caulk PD-EP*
RE-2	Property Values	Administrative costs only	Very Unlikely	Negligible	LOW	< 1%	Very Unlikely	Negligible	LOW	0 mo.		Real Estate	Project Cost & Schedule	Cost & Schedule	

*Likelihood, Impact, and Risk Level to be verified through market research and analysis (conducted by cost engineer).

1. Risk/Opportunity identified with reference to the Risk Identification Checklist and through deliberation and study of the PDT.
2. Discussions and Concerns elaborates on Risk/Opportunity Events and includes any assumptions or findings (should contain information pertinent to eventual study and analysis of event's impact to project).
3. Likelihood is a measure of the probability of the event occurring -- **Very Unlikely**, **Unlikely**, **Moderately Likely**, **Likely**, **Very Likely.** The likelihood of the event will be the same for both Cost and Schedule, regardless of impact
4. Impact is a measure of the event's effect on project objectives with relation to scope, cost, and/or schedule -- **Negligible**, **Marginal**, **Significant**, **Critical**, or **Crisis.** Impacts on Project Cost may vary in severity from impacts on Project Schedule.
5. **Risk Level is the resultant of Likelihood and Impact Low, Moderate, or High. Refer to the matrix located at top of page.**
6. **Variance Distribution refers to the behavior of the individual risk item with respect to its potential effects on Project Cost and Schedule. For example, an item with clearly defined parameters and a solid most likely scenario would probably follow a triangular or normal distribution. A risk item for which the PDT has little data or probability of modeling with respect to effects on cost or schedule (i.e. "anyone's guess") would probably follow a uniform or discrete uniform distribution.**
7. **The responsibility or POC is the entity responsible as the Subject Matter Expert (SME) for action, monitoring, or information on the PDT for the identified risk or opportunity.**
8. **Correlation recognizes those risk events that may be related to one another. Care should be given to ensure the risks are handled correctly without a "double counting."**
9. **Affected Project Component identifies the specific item of the project to which the risk directly or strongly correlates.**
10. **Project Implications identifies whether or not the risk item affects project cost, project schedule, or both. The PDT is responsible for conducting studies for both Project Cost and for Project Schedule.**
11. **Results of the risk identification process are studied and further developed by the Cost Engineer, then analyzed through the Monte Carlo Analysis Method for Cost (Contingency) and Schedule (Escalation) Growth.**

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost & Schedule Risk Analysis Model

Contingency on Base Estimate	80% Confidence Project Cost
Baseline Estimate Cost (Most Likely) ->	$27,660,467
Baseline Estimate Cost Contingency Amount ->	$7,724,017
Baseline Estimate Construction Cost (80% Confidence) ->	$35,384,484

Contingency on Schedule	80% Confidence Project Schedule
Project Schedule Duration (Most Likely) ->	68.2 Months
Schedule Contingency Duration ->	29.9 Months
Project Schedule Duration (80% Confidence) ->	98.1 Months
Project Schedule Contingency Amount (80% Confidence) ->	$419,968

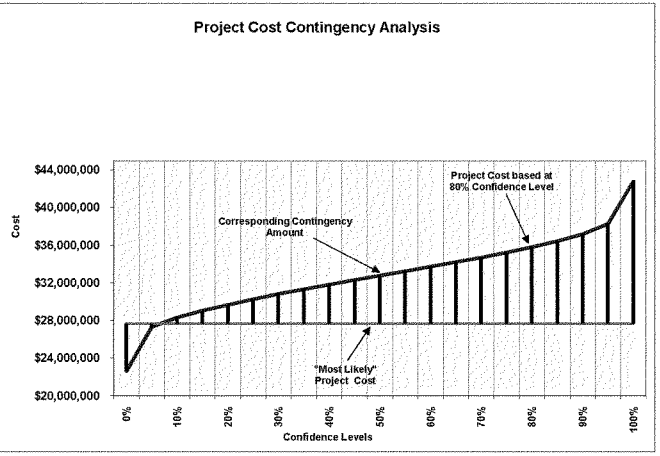
Project Contingency	80% Confidence Project Cost
Project Contingency Amount (80% Confidence) ->	$8,143,985
Project Contingency Percentage (80% Confidence) ->	29%

Project Cost (80% Confidence) ->	$35,804,452

- PROJECT CONTINGENCY DEVELOPMENT -

Contingency Analysis

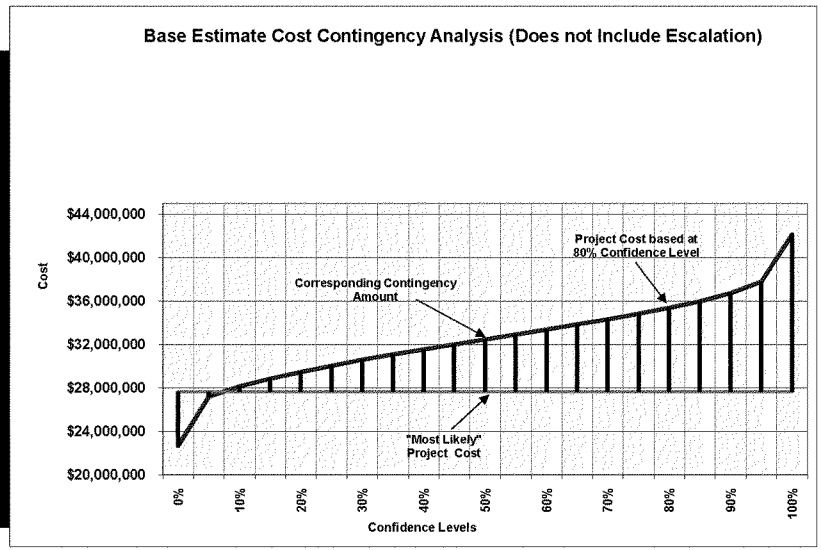
Most Likely Cost Estimate	$27,660,467		
Confidence Level	Project Cost	Contingency	Contingency %
0%	$22,656,136	($5,004,330)	-18.09%
5%	$27,319,884	($340,583)	-1.23%
10%	$28,323,970	$663,504	2.40%
15%	$29,061,427	$1,400,960	5.06%
20%	$29,672,679	$2,012,212	7.27%
25%	$30,270,680	$2,610,214	9.44%
30%	$30,843,997	$3,183,531	11.51%
35%	$31,341,319	$3,680,852	13.31%
40%	$31,826,234	$4,165,767	15.06%
45%	$32,311,775	$4,651,308	16.82%
50%	$32,776,924	$5,116,457	18.50%
55%	$33,240,512	$5,580,045	20.17%
60%	$33,728,730	$6,068,264	21.94%
65%	$34,216,760	$6,556,294	23.70%
70%	$34,689,217	$7,028,750	25.41%
75%	$35,237,230	$7,576,764	27.39%
80%	$35,804,452	$8,143,985	29.44%
85%	$36,427,500	$8,767,033	31.70%
90%	$37,189,845	$9,529,378	34.45%
95%	$38,270,714	$10,610,247	38.36%
100%	$42,766,335	$15,105,868	54.61%



- BASE CONTINGENCY DEVELOPMENT -

Contingency Analysis

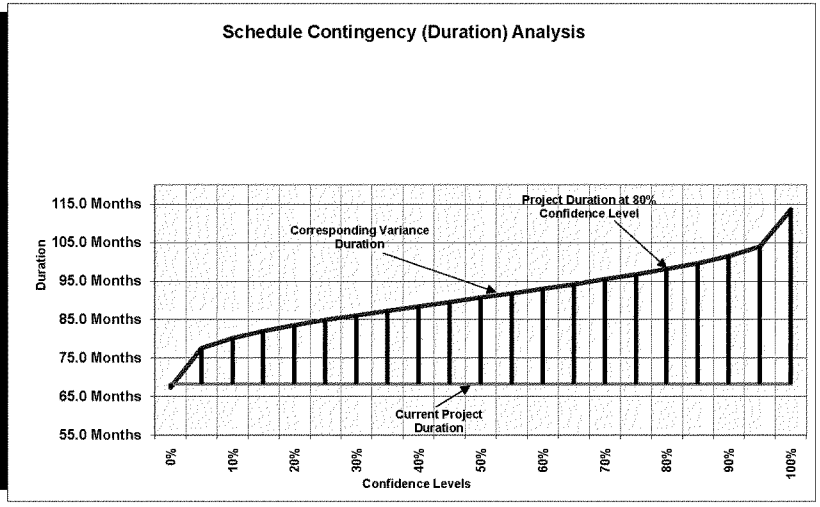
Most Likely Cost Estimate	$27,660,467		
Confidence Level	Project Cost	Contingency	Contingency %
0%	$22,668,667	($4,991,799.40)	-18.05%
5%	$27,188,411	($472,055.28)	-1.71%
10%	$28,156,158	$495,691.57	1.79%
15%	$28,868,149	$1,207,682.35	4.37%
20%	$29,457,670	$1,797,202.95	6.50%
25%	$30,036,870	$2,376,403.41	8.59%
30%	$30,593,376	$2,932,909.36	10.60%
35%	$31,074,521	$3,414,054.54	12.34%
40%	$31,543,316	$3,882,849.87	14.04%
45%	$32,013,001	$4,352,534.47	15.74%
50%	$32,461,615	$4,801,147.91	17.36%
55%	$32,909,844	$5,249,377.37	18.98%
60%	$33,381,688	$5,721,221.52	20.68%
65%	$33,853,108	$6,192,641.37	22.39%
70%	$34,306,988	$6,646,521.56	24.03%
75%	$34,837,110	$7,176,643.86	25.95%
80%	$35,384,484	$7,724,017.34	27.92%
85%	$35,986,877	$8,326,410.06	30.10%
90%	$36,723,845	$9,063,378.12	32.77%
95%	$37,769,640	$10,109,173.57	36.55%
100%	$42,129,836	$14,469,369.01	52.31%



- SCHEDULE CONTINGENCY (DURATION) DEVELOPMENT -

Contingency Analysis

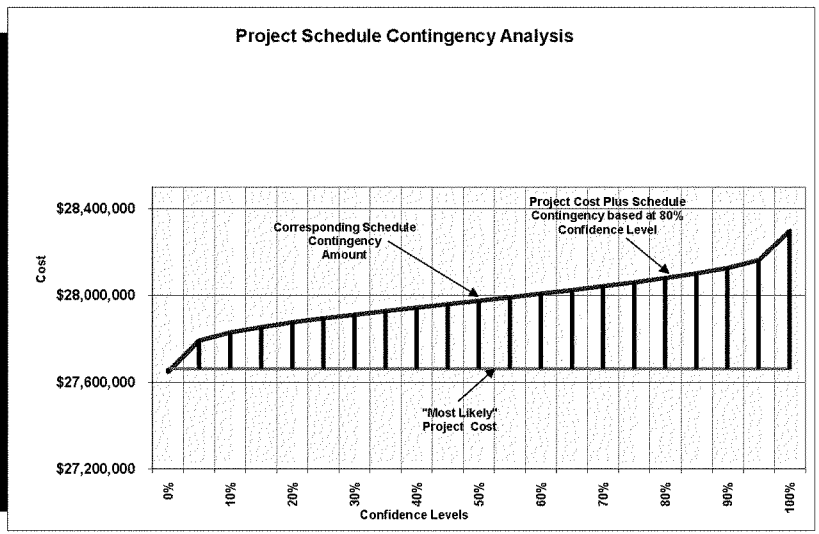
Most Likely Schedule Duration	68.2 Months		
Confidence Level	Project Duration	Contingency	Contingency %
0%	67.3 Months	-0.9 Months	-1.31%
5%	77.6 Months	9.4 Months	13.74%
10%	80.2 Months	12.0 Months	17.53%
15%	82.0 Months	13.8 Months	20.20%
20%	83.5 Months	15.3 Months	22.47%
25%	84.9 Months	16.7 Months	24.43%
30%	86.1 Months	17.9 Months	26.19%
35%	87.2 Months	19.0 Months	27.88%
40%	88.4 Months	20.2 Months	29.56%
45%	89.5 Months	21.3 Months	31.22%
50%	90.7 Months	22.5 Months	32.95%
55%	91.8 Months	23.6 Months	34.55%
60%	92.9 Months	24.7 Months	36.26%
65%	94.1 Months	25.9 Months	38.00%
70%	95.5 Months	27.2 Months	39.94%
75%	96.7 Months	28.5 Months	41.81%
80%	98.1 Months	29.9 Months	43.88%
85%	99.6 Months	31.4 Months	46.04%
90%	101.4 Months	33.2 Months	48.69%
95%	103.9 Months	35.7 Months	52.36%
100%	113.6 Months	45.4 Months	66.51%

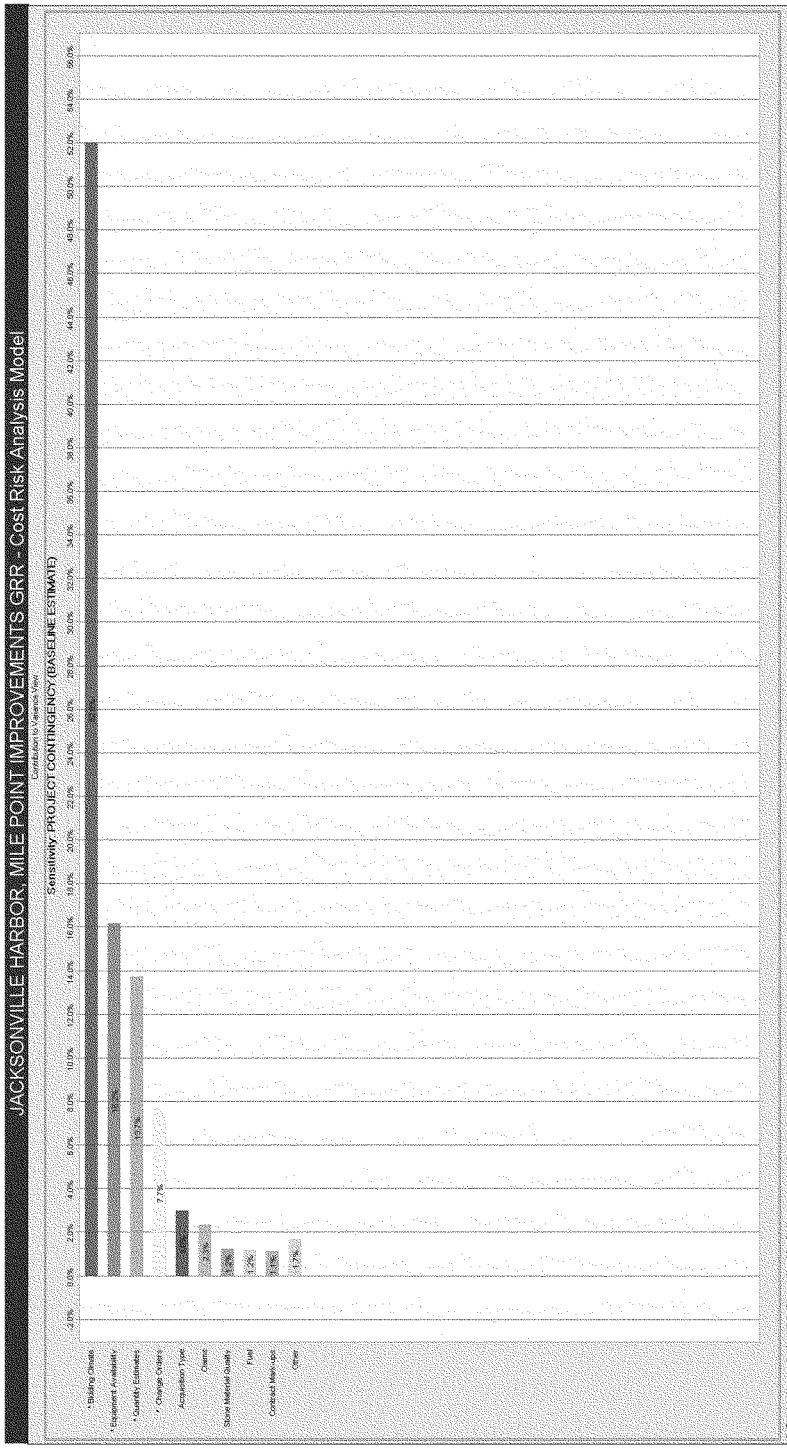


- SCHEDULE CONTINGENCY (AMOUNT) DEVELOPMENT -

Contingency Analysis

Most Likely Cost Estimate	$27,660,467		
Confidence Level	Project Cost	Contingency	Contingency %
0%	$27,647,936	($12,531)	-0.05%
5%	$27,791,939	$131,473	0.48%
10%	$27,828,279	$167,812	0.61%
15%	$27,853,744	$193,278	0.70%
20%	$27,875,476	$215,009	0.78%
25%	$27,894,277	$233,810	0.85%
30%	$27,911,088	$250,621	0.91%
35%	$27,927,264	$266,798	0.96%
40%	$27,943,384	$282,917	1.02%
45%	$27,959,240	$298,774	1.08%
50%	$27,975,776	$315,309	1.14%
55%	$27,991,134	$330,668	1.20%
60%	$28,007,509	$347,042	1.25%
65%	$28,024,119	$363,652	1.31%
70%	$28,042,695	$382,229	1.38%
75%	$28,060,586	$400,120	1.45%
80%	$28,080,434	$419,968	1.52%
85%	$28,101,090	$440,623	1.59%
90%	$28,126,466	$466,000	1.68%
95%	$28,161,541	$501,074	1.81%
100%	$28,296,966	$636,499	2.30%




JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model
Contribution to Variance View
Sensitivity: PROJECT CONTINGENCY (BASELINE ESTIMATE)
-2.0%
0.0%
2.0%
4.0%
6.0%
8.0%
10.0%
12.0%
14.0%
16.0%
18.0%
20.0%
22.0%
24.0%
26.0%
28.0%
30.0%
32.0%
34.0%
36.0%
38.0%
40.0%
42.0%
44.0%
46.0%
48.0%
50.0%
52.0%
54.0%
56.0%
* Bidding Climate
* Equipment Availability
* Quantity Estimates
* Change Orders
Acquisition Type
Claims
Stone Material Quality
Fuel
Contract Markups
Other
16.0%
13.7%
7.7%
3.3%
1.2%
1.2%
1.1%
1.7%
* Correlated assumption (sensitivity data may be misleading)

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

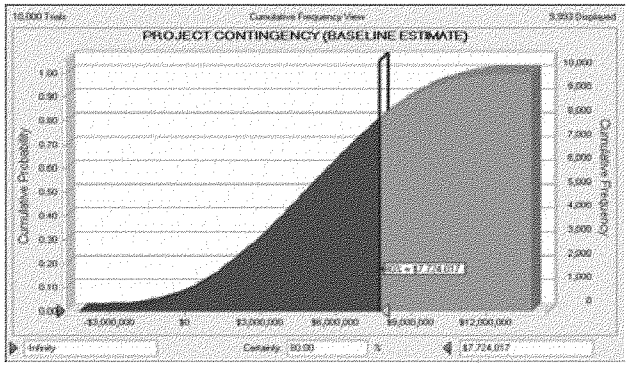
Risk No.	Risk/Opportunity Event	Discussion and Concerns	Project Cost			Variance Distribution	Correlation to Other(s)	Crystal Ball Simulation Expected Values ($$)			Crystal Ball Simulation Expected Values (%s)		
			Likelihood*	Impact*	Risk Level*			Low	Most Likely	High	Low	Most Likely	High
Internal Risks (Internal Risk items are those that are generated, caused, or controlled within the PDT's sphere of influence.)													
CD-1	Change Orders	Time and cost impacts vary greatly on individual issues. Changes near end of project dont impact schedule	Very Likely	Significant	HIGH	Triangular	EN-C-2, EN-D-3, PO-E-3	$0	$0	$1,809,705	0.0%	0.0%	6.5%
CD-3/ LS-2	Staging Area	Potential for problems with location; issues w/ runway, lights needed for cranes @ certain ht, aircraft, impact ht, restriction, impacts contractor's operation	Unlikely	Significant	MODERATE	Uniform		$0	$0	$293,583	0.0%	0.0%	1.1%
CD-4	Claims	Claims are likely to occur, but not cause a drastic delay in project schedule	Likely	Significant	HIGH	Uniform		$0	$0	$2,261,972	0.0%	0.0%	8.0%
CT-1	Acquisition Type	Impacts effort on award, some contract varieties more conducive to lower cost. Prefer Best Value RFP w/ source selection plan; increased costtime to implement multiple awards	Unlikely	Significant	MODERATE	Uniform		$0	$0	$2,459,301	0.0%	0.0%	8.9%
EN-C-1	Production Estimates	Unit price per cubic yard	Likely	Marginal	MODERATE	Triangular		($258,882)	$0	$512,048	-1.0%	0.0%	1.9%
EN-C-2	Quantity Estimates	Quantity overunder runs	Likely	Significant	HIGH	Uniform	CD-1	($1,642,901)	$0	$2,464,397	-5.9%	0.0%	8.9%
EN-C-8	Contract Mark-ups		Likely	Marginal	MODERATE	Uniform		($221,077)	$0	$768,962	-2.2%	0.0%	2.8%
External Risks (External Risk items are those that are generated, caused, or controlled exclusively outside the PDT's sphere of influence.)													
CT-4	Bidding Climate	Severe economic swings can increase / decrease number of potential bidders	Likely	Marginal	MODERATE	Uniform	EN-C-3	($4,515,852)	$0	$3,688,951	-17.8%	0.0%	13.3%
EN-C-3	Equipment Availability	Dredge may have to come from further away, increasing mobilization costs or size/type of equipment available	Likely	Significant	HIGH	Triangular	CT-4	$0	$0	$861,135	0.0%	0.0%	3.1%
EN-C-4	Weather	Severe weather causing damage to project during construction.	Likely	Marginal	MODERATE	Uniform		$0	$0	$1,136,875	0.0%	0.0%	4.1%
EN-C-6	Fuel	$xxx per gallon was used in the Sep 09 MII, increases will effect equipment operating costs.	Very Likely	Significant	HIGH	Uniform		($409,987)	$0	$1,058,101	-1.5%	0.0%	3.8%
EN-G-1	Stone Material Quality	Salvage stone- if quality of intended reusable stone is bad then need to purchase additional stone- slip in sched and increase to cost; EN-D feels the estimated 14,000CY of recoverable stone is conservative estimate of what is	Unlikely	Significant	MODERATE	Uniform	EN-G-3	($792,791)	$0	$939,392	-2.8%	0.0%	3.4%
PD-E-1	Environmental Monitoring and Mitigation	Predicting final marsh elevations difficult, may require future funding for long term monitoring	Unlikely	Significant	MODERATE	Uniform		$0	$0	$1,000,000	0.0%	0.0%	3.6%
									$0				

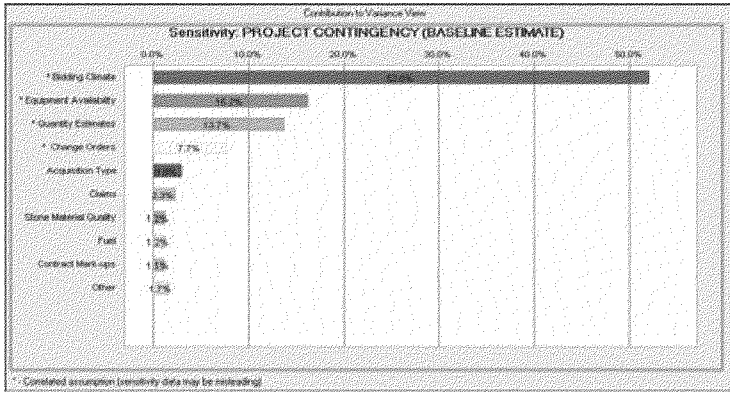
Not Part of Study - Placeholder for Project Summation Purposes Only

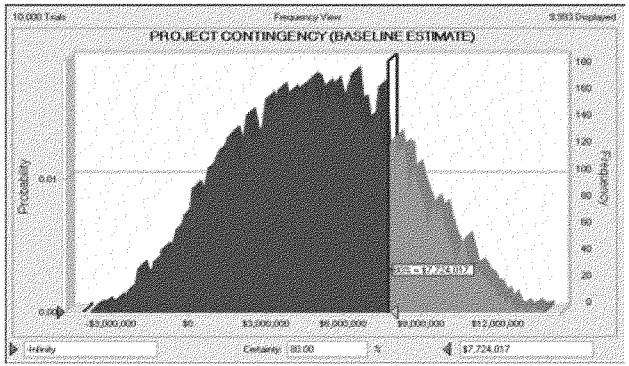
Percentages are calculated as the variance from the assumption value to facilitate iteration of the model should the cost values change throughout the project phases. Uniform distribution percentages reflect variation from the total project cost.

Contingency Summary Table - Cost

PROJECT CONTINGENCY (BASELINE ESTIMATE)	Percentile	Baseline TPC	Contingency Amount	Baseline w/ Contingency	Contingency %
	0%	$27,660,467	($4,991,799)	**$22,668,667**	**-18.05%**
	5%	$27,660,467	($472,056)	**$27,188,411**	**-1.71%**
	10%	$27,660,467	$495,692	**$28,156,158**	**1.79%**
	15%	$27,660,467	$1,207,682	**$28,868,149**	**4.37%**
	20%	$27,660,467	$1,797,203	**$29,457,670**	**6.50%**
	25%	$27,660,467	$2,378,403	**$30,036,870**	**8.59%**
	30%	$27,660,467	$2,932,909	**$30,593,376**	**10.60%**
	35%	$27,660,467	$3,414,055	**$31,074,521**	**12.34%**
	40%	$27,660,467	$3,882,850	**$31,543,316**	**14.04%**
	45%	$27,660,467	$4,352,534	**$32,013,001**	**15.74%**
	50%	$27,660,467	$4,801,148	**$32,461,615**	**17.36%**
	55%	$27,660,467	$5,249,377	**$32,909,844**	**18.96%**
	60%	$27,660,467	$5,721,222	**$33,381,688**	**20.68%**
	65%	$27,660,467	$6,192,641	**$33,853,108**	**22.39%**
	70%	$27,660,467	$6,646,522	**$34,306,988**	**24.03%**
	75%	$27,660,467	$7,176,644	**$34,837,110**	**25.95%**
	80%	$27,660,467	$7,724,017	**$35,384,484**	**27.92%**
	85%	$27,660,467	$8,326,410	**$35,986,877**	**30.10%**
	90%	$27,660,467	$9,063,378	**$36,723,845**	**32.77%**
	95%	$27,660,467	$10,109,174	**$37,769,640**	**36.55%**
	100%	$27,660,467	$14,469,369	**$42,129,836**	**52.31%**



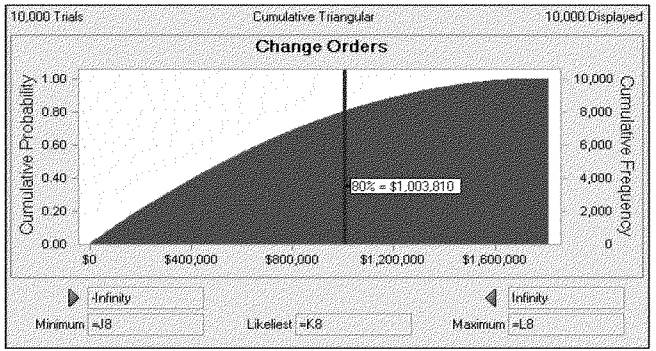




JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
CD-1	Change Orders	$0	$0	$1,809,705

Notes: This item captures the risk of the change orders impacting construction costs.
Likely Most likely scenario assumes not changes to the baseline estimate.
Low Low assumes no change orders.
High High assumes up to 10% of the construction costs for contract modifications.



Assumption: Change Orders

Percentile	Assumption values
0%	$98
10%	$93,050
20%	$189,680
30%	$299,662
40%	$419,445
50%	$544,106
60%	$675,458
70%	$824,554
80%	$1,003,810
90%	$1,241,109
100%	$1,795,973

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011
**Used Contract Costs from MII

Construction Costs	$24,593,008	Construction Cost
Minus Dredging	$5,085,967	Construction Cost- Pipeline Dredging
Dredging Mob.	$1,409,992	Construction Cost- Mob, Demob and Prep Work
Construction less Dredging	**$18,097,049**	

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

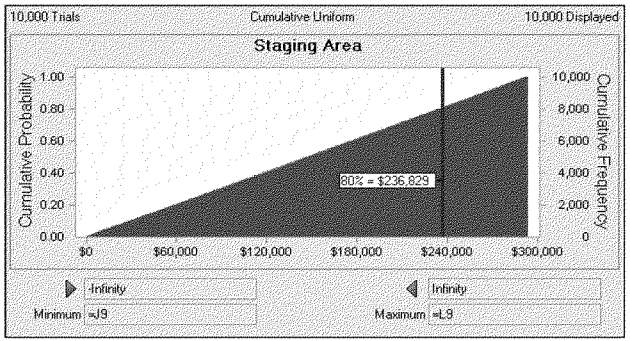
Risk Refer No.	Risk Event	Low	Most Likely	High
CD-3/ LS-2	Staging Area	$0	$0	$293,583

Notes: This item captures the risk that there will be cost impact to the stone placement for the jetty work due to the unavailability of staging areas. The sponsor and the Corps is confident in the availability of the staging areas currently contemplated.

Likely Most likely assumes no change to the baseline estimate.

Low The baseline estimate was made on the most optimum conditions.

High High assumes that the availability of staging areas for cranes is less favorable, creating a total cost impact of up to 2% of the total of the jetty construction costs.



Assumption: Staging Area

Percentile	Assumption values
0%	$38
10%	$29,369
20%	$60,146
30%	$90,047
40%	$120,626
50%	$149,007
60%	$178,590
70%	$207,373
80%	$236,829
90%	$265,957
100%	$293,511

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011

**Used Contract Costs from MII

Construction Cost- Bank Stabilize, Dikes & Jetties

$14,679,144.38

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
CD-4	Claims	$0	$0	$2,201,872

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011

**Used Contract Costs from MII

Construction Cost- Bank Stabilize, Dikes & Jetties

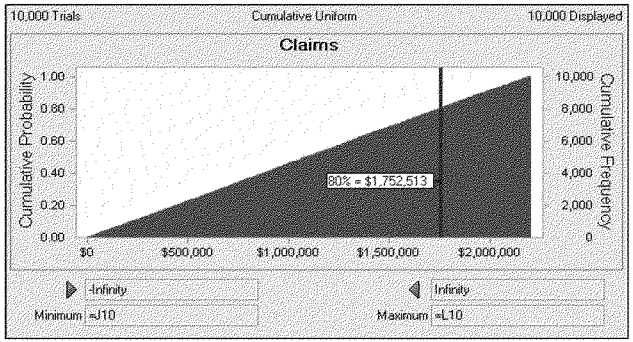
$14,679,144.38

Notes: This item captures the risk that there will be contractor claims due to issues with the existing site conditions (particularly in-water).

Likely Most likely assumes no change to the baseline estimate.

Low Low assumes no change to the baseline estimate as no claims are filed.

High High assumes that contractor claims create cost growth on the jetty construction by up to 15%.



Assumption: Claims

Percentile	Assumption values
0%	$252
10%	$221,828
20%	$443,809
30%	$661,525
40%	$878,396
50%	$1,089,936
60%	$1,311,122
70%	$1,534,138
80%	$1,752,513
90%	$1,969,110
100%	$2,201,841

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
CT-1	Acquisition Type	$0	$0	$2,459,301

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011

**Used Contract Costs from MII

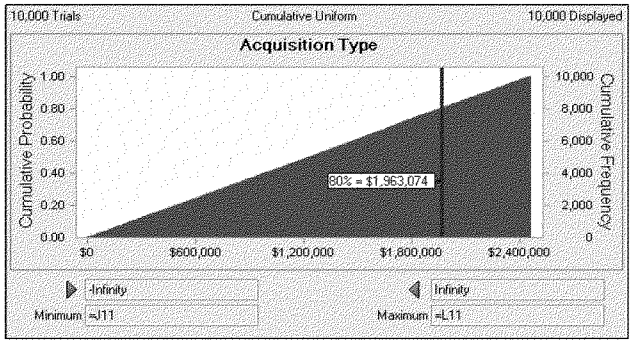
Construction Cost
$24,593,007.98

Notes: This item captures the risk that the overall costs could increase due to the selected acquisition strategy.

Likely Most likely assumes no change to baseline estimate.

Low Low assumes no change from the baseline estimate.

High High assumes up to 10% increase due to acquisition strategy, particularly with the likelihood that best value tradeoff process will be used.



Assumption: Acquisition Type

Percentile	Assumption values
0%	$287
10%	$245,444
20%	$498,558
30%	$744,669
40%	$984,467
50%	$1,241,549
60%	$1,479,030
70%	$1,715,965
80%	$1,963,074
90%	$2,211,113
100%	$2,459,162

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
EN-C-1	Production Estimates	($356,860)	$0	$513,046

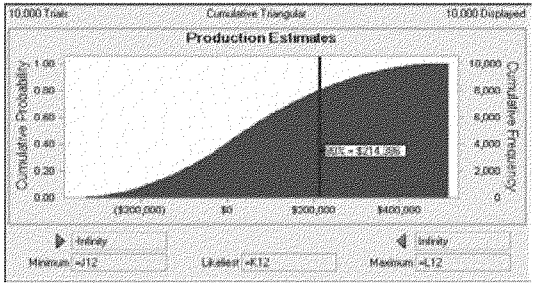
Notes: This item captures the risk that dredging productivity could affect the dredging costs due to the actual characterization of materials or the effective work time due to navigation traffic disruptions.

Likely Most likely assumes no changes to the baseline estimate.

Low Low assumes that the effective work time is up to 15% better than currently estimated.

High High assumes that the effective work time is up to 15% worse than currently estimated.

From Mll File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011
**Changed EWT in CEDEP and transferred cost changes to Mll to obtain values
**Used Contract Costs from Mll



Assumption: Production Estimates

Percentile	Assumption values
0%	($353,988)
10%	($181,541)
20%	($107,571)
30%	($47,847)
40%	$1,519
50%	$43,561
60%	$95,153
70%	$150,242
80%	$214,386
90%	$297,979
100%	$500,287

	Best	Worst	Likely	
16-inch LPP	88%	119%		
Excavation	$170,099	$229,390	$192,454	Construction Cost- Pipeline Dredging- Chicopit Bay Circ Channel Excavation & Disposal
16-inch	89%	116%		
Excavation	$2,725,578	$3,536,192	$3,060,082	Construction Cost- Pipeline Dredging- Little Jetty Training Wall Excavation & Disposal
Total	**$2,895,676**	**$3,765,582**	**$3,252,537**	
	88.38%	119.2%		
	89.07%	115.6%		

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

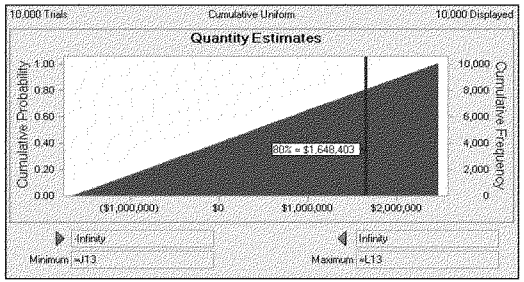
Risk Refer No.	Risk Event	Low	Most Likely	High
EN-C-2	Quantity Estimates	($1,642,931)	$0	$2,464,397

Notes: This item captures the risk that there will be a variation in quantity currently estimated (VEQ). This item captures the risk that there will be more quantity required due to dynamic changes over time of the confluence floor.

Likely Most likely assumes no change to the baseline estimate.

Low Low assumes that the the quantity of dredging and stone is up to 10% less than currently estimated.

High High assumes that the quantity of the dredging and stone is up to 15% more than currently estimated.



Assumption: Quantity Estimates

Percentile	Assumption values
0%	($1,642,291)
10%	($1,213,254)
20%	($810,730)
30%	($409,116)
40%	$10,188
50%	$406,692
60%	$814,274
70%	$1,225,612
80%	$1,648,403
90%	$2,063,398
100%	$2,464,077

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011

**Used Contract Costs from MII

	90.00%	115.00%		
	90.00%	115.00%		
	Best	**Worst**	**Likely**	
West Training Wall	$5,022,490	$6,417,626	$5,580,544	Construction Cost- Bank Stabilize, Dikes & Jetties- Western Training Wall Construction
East Training Wall	$6,836,607	$8,735,664	$7,596,230	Construction Cost- Bank Stabilize, Dikes & Jetties- Eastern Training Wall Realignment
Dredging 16-inch	$2,754,074	$3,519,095	$3,060,082	Construction Cost- Pipeline Dredging- Little Jetty Training Wall Excavation & Disposal
Dredging 16-inch LPP	$173,209	$221,323	$192,454	Construction Cost- Pipeline Dredging- Chicopit Bay Circ Channel Excavation & Disposal
Total	**$14,786,380**	**$18,893,707**	**$16,429,311**	
	90.00%	115.00%		
	90.00%	115.00%		

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
EN-C-8	Contract Mark-ups	($621,072)	$0	$786,962

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011

**Used Contract Costs from MII

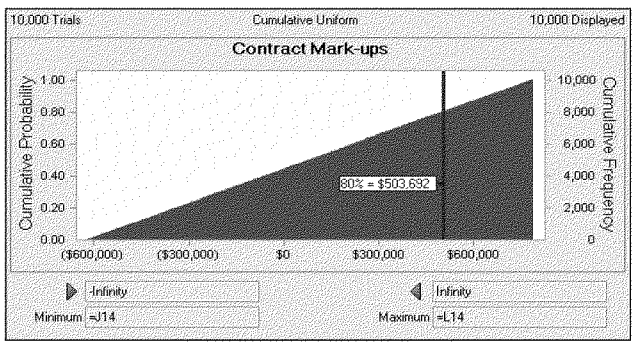
Construction Cost
$24,593,007.98

Notes: This item captures the risk that the contractor markups could significantly fluctuate, affecting total construction costs.

Likely Most likely is the contractor's markups cost from the baseline estimate.

Low Low assumes that FOOH could be as low as 4%, HOOH 5%, Profit 8%, and Bond 0.5%.

High High assumes that FOOH could be as high as 8%, HOOH 15%, Profit 12%, and Bond 2%.



Assumption: Contract Mark-ups

Percentile	Assumption values
0%	($620,872)
10%	($482,019)
20%	($337,993)
30%	($199,347)
40%	($56,670)
50%	$83,234
60%	$221,349
70%	$361,264
80%	$503,692
90%	$646,986
100%	$786,782

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No	Risk Event	Low	Most Likely	High
CT-4	Bidding Climate	($4,918,602)	$0	$3,688,951

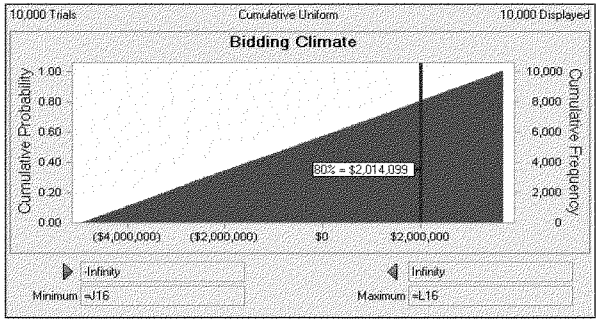
From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011
**Used Contract Costs from MII
Construction Cost
$24,593,007.98

Notes: This item captures the both the opportunity for considerable savings and the risk of considerably higher prices due to market conditions in the jetty and dredging construction industries.

Likely Most likely assumes no change from baseline estimate.

Low Low assumes that the use of an "industry day" could produce some savings (as it has on previous projects) by as much as 20%.

High High assumes that by the time the contract is let in 2013 (or later), market conditions could change (less favorable), increasing ultimate construction costs by up to 15%. Historical trends, per documentation received 6-28-10, is that high bids are coming in around 15% higher than the government estimates.



Assumption: Bidding Climate

Percentile	Assumption values
0%	($4,918,391)
10%	($4,054,611)
20%	($3,199,120)
30%	($2,380,493)
40%	($1,496,036)
50%	($581,619)
60%	$320,427
70%	$1,167,687
80%	$2,014,099
90%	$2,841,187
100%	$3,688,020

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

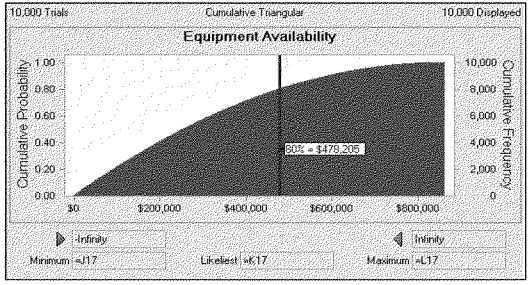
Risk Refer No.	Risk Event	Low	Most Likely	High
EN-C-3	Equipment Availability	$0	$0	$861,135

Notes: This item captures the risk that the dredging costs could increased based on the limited availability of equipment in the dredging industry and regional market.

Likely Most likely assumes no change to the current estimate (using 16" pipeline).

Low Low assumes no change from the most likely.

High High assumes that costs could increase up to as much as it would cost to mobilize and utilize a 24" pipeline.



Assumption: Equipment Availability

Percentile	Assumption values
0%	$63
10%	$44,669
20%	$93,098
30%	$143,031
40%	$197,544
50%	$257,128
60%	$322,175
70%	$393,342
80%	$478,205
90%	$595,296
100%	$856,654

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011
**Used Contract Costs from MII

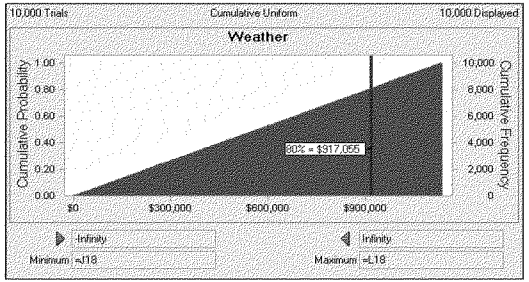
	16-inch	24-inch		
16-inch LPP				
Excavation	$192,454	$200,964	1.04421769	Construction Cost- Pipeline Dredging- Chicopit Bay Circ Channel Excavation & Disposal
16-inch				
Excavation	$3,060,082	$3,186,532	1.04132231	Construction Cost- Pipeline Dredging- Little Jetty Training Wall Excavation & Disposal
Mob	$1,409,992	$2,136,167	1.51502111	Construction Cost- Mob, Demob and Prep Work
Total	**$4,662,528**	**$5,523,663**		

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
EN-C-4	Weather	$0	$0	$1,136,875

Notes: This item captures the risk of damage due to a severe storm.
Likely Most likely assumes no changes to the baseline estimate.
Low Low assumes no impact due to weather.
High High assumes that a severe weather event occurs, creating a 7 day period of standby and causing rework of a 100' section of jetty.

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011
**Used Contract Costs from MII



Assumption: Weather

Percentile	Assumption values
0%	$423
10%	$113,346
20%	$225,207
30%	$343,245
40%	$455,358
50%	$574,435
60%	$692,411
70%	$798,936
80%	$917,055
90%	$1,022,755
100%	$1,136,796

Jetty Storm Damage		**Duration**	
West Training Wall	$5,580,544	9/11/2013	232 Construction Cost- Bank Stabilize, Dikes & Jetties- Western Training Wall Construction
East Training Wall	$7,596,230	5/1/2014	Construction Cost- Bank Stabilize, Dikes & Jetties- Eastern Training Wall Realignment
Total	$13,176,774		
100' of damage	**$878,452**		

Standby Costs	
Total Construction	$13,176,774
Daily Burn	$56,796
One Week of Burn	$397,575
Total Standby	**$258,424**

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
EN-C-6	Fuel	($409,067)	$0	$1,058,101

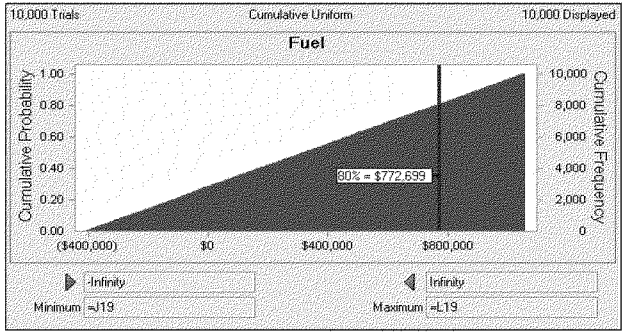
Notes:

This item captures the risk of fluctuations in fuel affecting the overall project cost.

Likely Most likely assumes no change to the baseline estimate.

Low Low assumes that the fuel price for off-road and marine diesel to be $2.30/gallon.

High High assumes that the fuel price for off-road and marine diesel to be $4.80/gallon.



Assumption: Fuel

Percentile	Assumption values
0%	($408,877)
10%	($265,629)
20%	($115,515)
30%	$23,773
40%	$171,858
50%	$320,549
60%	$469,718
70%	$613,805
80%	$772,699
90%	$912,368
100%	$1,057,950

From MII File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2
From CEDEP file: JHFMIPT 2011-1 6 INCH PORTABLE.xlsm dated 1/21/2011
From CEDEP file: JHFMIPT 2011-1 16 INCH CHICOPIT FC.xlsm dated 1/21/2011
From CEDEP file: JHFMIPT 2011-1 16 INCH PABLO CK FW.xlsm
**Used Equipment Costs from MII
**Used Equipment Operating Costs from CEDEP

Equipment Costs	Likely	Worst	Best	
MII	$1,808,094	$1,882,770	$1,744,677	Construction Cost
CEDEP Portable 6-Inch	$60,398	$91,466	$49,475	
CEDEP 16-Inch	$1,707,926	$2,660,283	$1,373,199	
Total	**$3,576,418**	**$4,634,519**	**$3,167,351**	

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No	Risk Event	Low	Most Likely	High
EN-G-1	Stone Material Quality	($782,791)	$0	$929,392

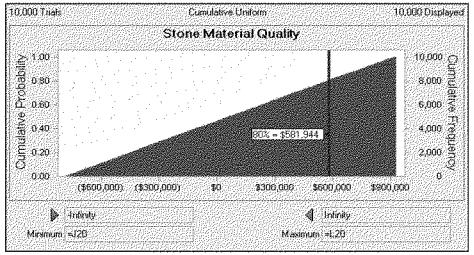
Notes:

This item captures the risk that the material planned on being salvaged and reused will not be suitable for placement in the jetty construction.

Likely Most likely assumes no change to the baseline estimate.

Low Low assumes that there is more recovered reusable stone than estimated, decreasing the amount of purchase stone by 15% and resulting in an overall cost savings of 2.83% (based on input from geotechnical design and analysis by EN-C).

High High assumes that there is approx 15% less recovered reusbale stone than estimated, increasing the amount of purchase stone and resulting in an increase in the project cost by up to 3.36% (based on input from geotechnical design and analysis by EN-C).



Assumption: Stone Material Quality

Percentile	Assumption values
0%	($782,673)
10%	($611,251)
20%	($445,472)
30%	($279,037)
40%	($109,732)
50%	$63,875
60%	$239,901
70%	$403,546
80%	$581,944
90%	$755,323
100%	$929,347

From Mil File: JHFMILEPT2011-3-Final NED Plan FY11 no contingency.mlp dated 3/1/2011
**Used Contract Costs from Mil

Per phone conversation with Steve Conger 2/22/2011 it is expected to recover approximately 14,600 CY of reusable armor stone, which is a conservative estimate. There may be more recovered reusable stone which would decrease the amount needed to be purchased.

Stone Material Quality:

High would be less reusable stone than what is considered in estimate, increasing the amount of stone to be purchased. VEQ clause limits to 15% variation in expected quantity.

Estimated Amt of Reusable Stone	% Not Suitable (as decimal)	CY Not Suitable	$/CY	Potential Cost Increase	% of Construction Costs
14,600	0.15	2190	$383	$837,806	3.36%

Low would be more reusable stone than what is considered in estimate, decreasing the amount of stone to be purchased. VEQ clause limits to 15% variation in estimated quantit

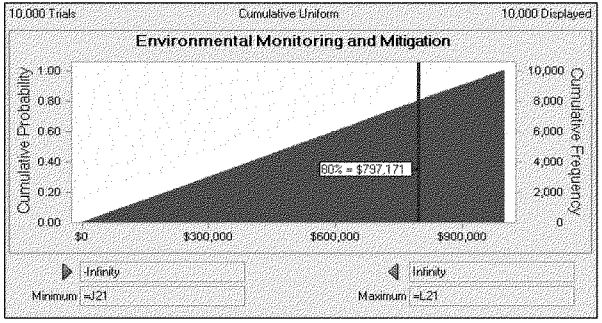
Estimated Amt of Purchased Stone	15% Variaition	CY Decrease	$/CY	Potential Cost Savings	% of Construction Costs
12,300	0.15	1,845	$383	$705,823	2.83%

If there is 15% less reusable stone (2190 CY less), the contractor would need to purchase the difference (2190 CY) which is more than a 15% increase (17.8%) to the estimated amount of stone to purchase. This quantity overrun would not be subject to the VEQ clause and the price of the additional stone over 15% would need to be negotiated.

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
PD-E-1	Environmental Monitoring and Mitigation	$0	$0	$1,000,000

Notes: This item captures the risk that there will be more moniotring and mitigation required due to changing conditions in the marsh elevations.
Likely Most likely assumes no change to the baseline estimate.
Low Low assumes no change to the baseline estimate.
High High assumes that monitoring and mitigation efforts could cost up to $1 Million more.



Assumption: Environmental Monitoring and Mitigation

Percentile	Assumption values
0%	$63
10%	$99,408
20%	$202,629
30%	$302,679
40%	$401,879
50%	$499,994
60%	$599,099
70%	$697,531
80%	$797,171
90%	$897,819
100%	$999,733

Crystal Ball Report - Full
Simulation started on 3/26/2011 at 4:28 PM
Simulation stopped on 3/26/2011 at 4:28 PM

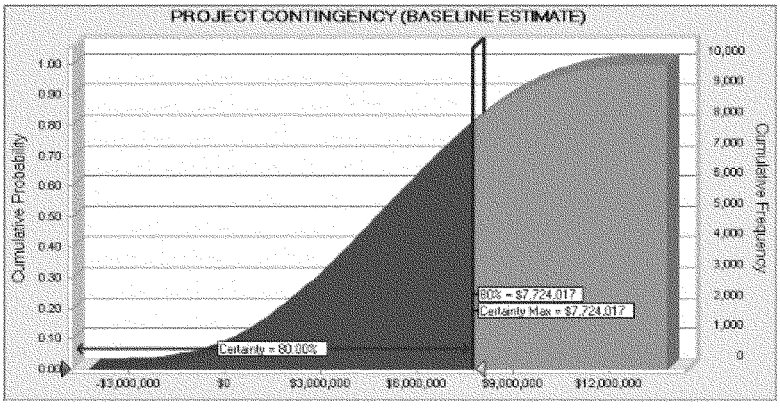
Run preferences:	
Number of trials run	10,000
Monte Carlo	
Seed	999
Precision control on	
Confidence level	95.00%
Run statistics:	
Total running time (sec)	11.30
Trials/second (average)	885
Random numbers per sec	11,505
Crystal Ball data:	
Assumptions	13
Correlations	2
Correlated groups	2
Decision variables	0
Forecasts	1

Forecasts

Worksheet: [Risk Analysis (Cost)-Milepoint_3-26-11 - GRM Review.xlsx]Cost Risk Model

Forecast: PROJECT CONTINGENCY (BASELINE ESTIMATE) **Cell: K23**

Summary:
Certainty level is 80.00%
Certainty range is from -Infinity to $7,724,017
Entire range is from -$4,991,799 to $14,469,369
Base case is $0
After 10,000 trials, the std. error of the mean is $32,453



Statistics:	Forecast values
Trials	10,000
Base Case	$0
Mean	$4,792,883
Median	$4,801,313
Mode	---
Standard Deviation	$3,245,338
Variance	$10,532,220,166,484
Skewness	0.0152
Kurtosis	2.44
Coeff. of Variability	0.6771
Minimum	-$4,991,799
Maximum	$14,469,369
Range Width	$19,461,168
Mean Std. Error	$32,453

Forecast: PROJECT CONTINGENCY (BASELINE ESTIMATE) (cont'd) Cell: K23

Percentiles:	Forecast values
0%	-$4,991,799
10%	$495,692
20%	$1,797,203
30%	$2,932,909
40%	$3,882,850
50%	$4,801,148
60%	$5,721,222
70%	$6,646,522
80%	$7,724,017
90%	$9,063,378
100%	$14,469,369

End of Forecasts

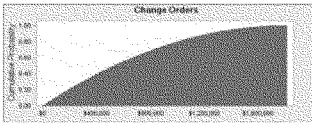
Assumptions

Worksheet: [Risk Analysis (Cost)-Milepoint_3-26-11 - GRM Review.xlsx]Cost Risk Model

Assumption: Change Orders **Cell: K8**

Triangular distribution with parameters:

Minimum	$0	(=J8)
Likeliest	$0	(=K8)
Maximum	$1,809,705	(=L8)

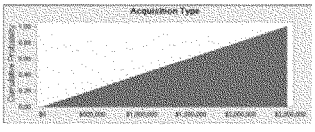


Correlated with:	Coefficient
Quantity Estimates (K13)	0.50

Assumption: Acquisition Type **Cell: K11**

Uniform distribution with parameters:

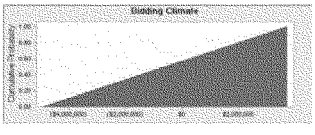
Minimum	$0	(=J11)
Maximum	$2,459,301	(=L11)



Assumption: Bidding Climate **Cell: K16**

Uniform distribution with parameters:

Minimum	($4,918,602)	(=J16)
Maximum	$3,688,951	(=L16)

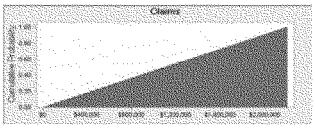


Correlated with:	Coefficient
Equipment Availability (K17)	0.50

Assumption: Claims **Cell: K10**

Uniform distribution with parameters:

Minimum	$0	(=J10)
Maximum	$2,201,872	(=L10)



Assumption: Contract Mark-ups **Cell: K14**

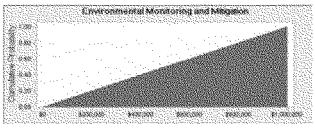
Uniform distribution with parameters:

Minimum	($621,072)	(=J14)
Maximum	$786,962	(=L14)

Assumption: Environmental Monitoring and Mitigation **Cell: K21**

Uniform distribution with parameters:

Minimum	$0	(=J21)
Maximum	$1,000,000	(=L21)

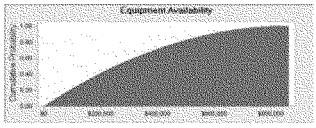


Assumption: Equipment Availability **Cell: K17**

Triangular distribution with parameters:

Minimum	$0	(=J17)
Likeliest	$0	(=K17)
Maximum	$861,135	(=L17)

Assumption: Equipment Availability (cont'd) **Cell: K17**

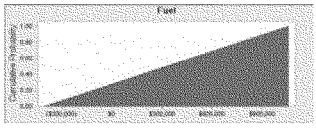


Correlated with:	Coefficient
Bidding Climate (K16)	0.50

Assumption: Fuel **Cell: K19**

Uniform distribution with parameters:

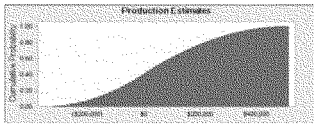
Minimum	($409,067)	(=J19)
Maximum	$1,058,101	(=L19)



Assumption: Production Estimates **Cell: K12**

Triangular distribution with parameters:

Minimum	($356,860)	(=J12)
Likeliest	$0	(=K12)
Maximum	$513,046	(=L12)

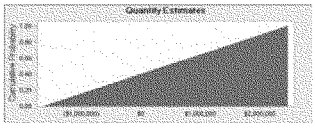


Assumption: Quantity Estimates **Cell: K13**

Uniform distribution with parameters:

Minimum	($1,642,931)	(=J13)
Maximum	$2,464,397	(=L13)

Assumption: Quantity Estimates (cont'd) **Cell: K13**

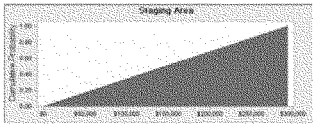


Correlated with:	Coefficient
Change Orders (K8)	0.50

Assumption: Staging Area **Cell: K9**

Uniform distribution with parameters:

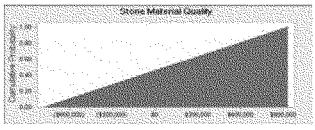
Minimum	$0	(=J9)
Maximum	$293,583	(=L9)



Assumption: Stone Material Quality **Cell: K20**

Uniform distribution with parameters:

Minimum	($782,791)	(=J20)
Maximum	$929,392	(=L20)

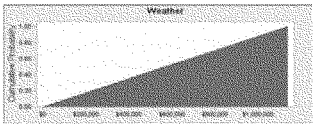


Assumption: Weather **Cell: K18**

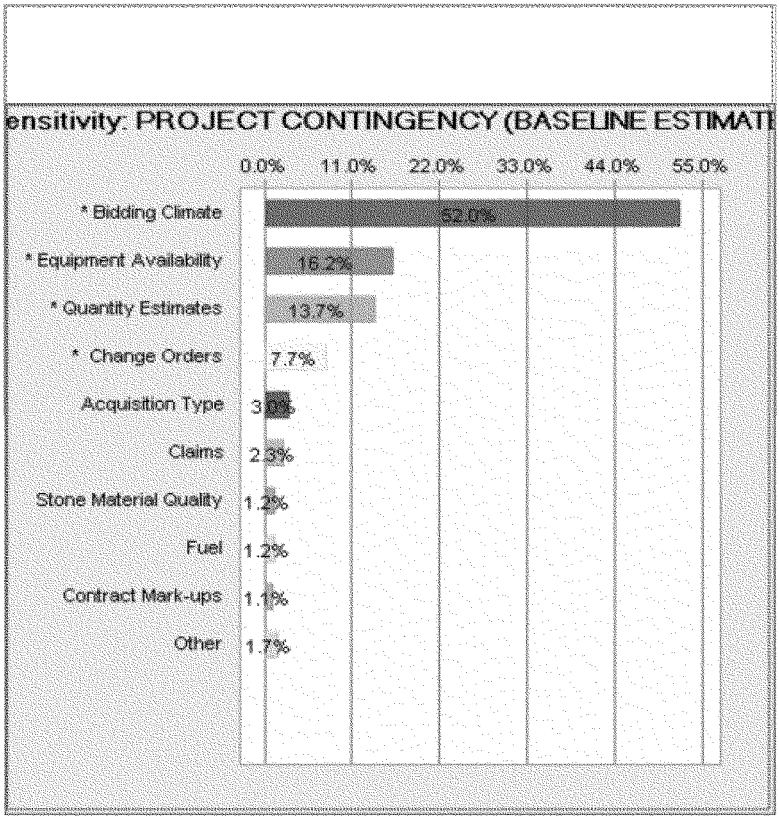
Uniform distribution with parameters:

Minimum	$0	(=J18)
Maximum	$1,136,875	(=L18)

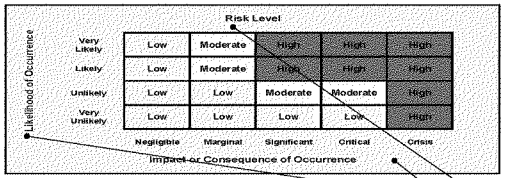
Assumption: Weather (cont'd) **Cell: K18**



End of Assumptions


ensitivity: PROJECT CONTINGENCY (BASELINE ESTIMATE
0.0%
11.0%
22.0%
33.0%
44.0%
55.0%
* Bidding Climate
52.0%
* Equipment Availability
16.2%
* Quantity Estimates
13.7%
* Change Orders
7.7%
Acquisition Type
3.0%
Claims
2.3%
Stone Material Quality
1.2%
Fuel
1.2%
Contract Mark-ups
1.1%
Other
1.7%

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - PDT Risk Register



Risk No.	Risk/Opportunity Event	Discussion and Concerns	Project Cost				Project Schedule				Correlation to Other(s)	Responsibility/POC	Affected Project Component	Project Implications	
			Likelihood*	Impact*	Risk Level*	Rough Order Impact ($)	Likelihood*	Impact*	Risk Level*	Rough Order Impact (mo)					
Internal Risks (Internal Risk items are those that are generated, caused, or controlled within the PDT's sphere of influence.)															
CD-1	Change Orders	Time and cost impacts vary greatly on individual issues. Changes near end of project don't impact schedule.	Very Likely	Significant	HIGH	5 - 10%	Very Likely	Significant	HIGH	3 mo.	EN-W-1	Construction Division	Construction Cost & Schedule	Cost & Schedule	
CD-2	Safety Issues	Don't usually shut project down	Likely	Negligible	LOW	Minimal	Likely	Negligible	LOW	< 15 days		Construction Division	Construction Cost & Schedule	Cost & Schedule	*Updated Schedule impact to reflect ROI.*
CD-3/ LS-2	Staging Area	Potential for problems with location; issues w/ runway lights needed for cranes @ certain ht; aircraft- impact ht. restriction, impacts contractor's operation	Unlikely	Significant	MODERATE	1 - 2%	Very Likely	Marginal	MODERATE	1 mo.		Construction Division	Project Cost & Schedule	Cost & Schedule	
CD-4	Claims	Claims are likely to occur, but not cause a drastic delay in project schedule	Likely	Significant	HIGH	5 - 15%	Very Likely	Negligible	LOW	0 mo.	DP-3	Construction Division	Project Cost & Schedule	Cost & Schedule	
CT-1	Acquisition Type	Impacts effort in award, some contract vehicles more conducive to lower cost; Prefer Best Value RFP w/ source selection plan; Increased cost/time to implement multiple awards	Unlikely	Significant	MODERATE	10%	Unlikely	Significant	MODERATE	2 mo		Acquisition Strategy Board	Construction Cost & Schedule	Cost & Schedule	*Combined CT-6 Acquisition Strategy cost info as it was determined to be duplicitated*
CT-3	Acquisition Delays	Delays in getting the contract solicited could impact the current schedule (1 month delay due to overwhelming response or other administrative procedures).	N/A	N/A	N/A	N/A	Unlikely	Significant	MODERATE	1 mo		Acquisition Strategy Board	Construction Cost & Schedule	Cost & Schedule	*Updated to reflect only schedule impact, no cost impact. Updated Likelihood, Impact and ROI based on input provided by Beau Corbett CT on 1/31/2011*
CT-5	Acquisition Plan	Could split into multiple contracts if small business can do dredging	Very Unlikely	Significant	LOW	< 1%	N/A	N/A	N/A	N/A		Acquisition Strategy Board	Construction Cost	Cost	
CT-6/ EN-D-4	Proprietary Materials Procurement	This item is added in support of the possible sole source of the concrete structures, since there were no responses to the sources sought solicitation. If it is determined that a Sole-Source Justification and Approval (J&A) is required, the schedule may need to be increased to accomodate this effort. It could take 2-8 months to get sole sources approved through HQ.	N/A	N/A	N/A	N/A	Likely	Critical	HIGH	6 mo		Contracting Division	Construction Cost	Cost & Schedule	*Added this risk item and assigned Likelihood, Impact and ROI based on input provided by Beau Corbett CT on 1/31/2011 and Steve Conger EN-D 2/4/2011. Removed from risk register 3/2/11 due to responses from sources sought solicitation*
CT-7/ DP-1	Project Component Sequencing	Subsequent proj. execution, if separate contracts for each phase/mult. contract (dredge/placement)	Unlikely	Marginal	LOW	$200,000	N/A	N/A	N/A	N/A		PM/Planner/Contracting	Project Schedule	Schedule	
DP-2	Funding Stream	In short term, delays based on $ amt. of contract are likely, delay in execution of proj. components	N/A	N/A	N/A	N/A	Likely	Marginal	MODERATE	Captured by DP-3	DP-3	PM	Project Schedule	Schedule	*Removed from Study. Captured by DP-3*
DP-3	Schedule Delays	Hard to fund if not in 2013 budget- automatic sched. delay, In short term, delays based on $ amt. of contract are likely, delay in execution of proj. components	Very Unlikely	Marginal	LOW	< 1%	Likely	Marginal	MODERATE	4 mo	CT-7, EN-C-3, CD-4, EN-C-4, EN-D-1, EN-D-2, PD-E-2, PD-E-3, PD-E-4, DP-2		Project Cost & Schedule	Cost & Schedule	*Updated Notes 2/9/2011 per input from Steve Ross DP-C*
DP-4/ EN-D-2	Scope Definition/Changes	Scope is well defined; little likelihood of scope increase or changes from current docs used for estimate development, Engineering pt. of view- if the project lingers, conditions may change	Very Unlikely	Critical	LOW	$3,000,000	Unlikely	Significant	MODERATE	3 mo.	EN-C-2, EN-D-3	PM/Planner	Construction Cost & Schedule	Cost & Schedule	*Updated ROI 2/9/2011 per input from Steve Ross DP-C and Steve Conger EN-DW*
EN-C-1	Production Estimates	Unit price per cubic yard	Likely	Marginal	MODERATE	$4 M	N/A	N/A	N/A	N/A		Cost Engineering	Equipment/Production Rates	Cost	
EN-C-2	Quantity Estimates	Quantity over/under runs	Likely	Significant	HIGH	15%	N/A	N/A	N/A	N/A	EN-D-1, DP-4/ EN-D-2	Cost Engineering/Design Branch	Construction Cost	Cost	
EN-C-5	Awardable Range Increase	An additional 15% above the approximate 10% profit	Likely	Significant	HIGH	Captured by CT-4	N/A	N/A	N/A	N/A		Cost Engineering	Funding	Cost	*Risk item covered by CT-4 Bidding Climate*
EN-C-6	Contract Mark-ups		Likely	Marginal	MODERATE	$1.7 M	N/A	N/A	N/A	N/A					
EN-D-1	Design Costs	Haven't fully calculated full PED, compared to 8%, unlikely to exceed 4 million in PED costs	Unlikely	Marginal	LOW	<10%	Unlikely	Marginal	LOW	minimal to none	EN-D-3, EN-C-2	Cost Engineering/Design Branch	Construction Cost & Schedule	Cost & Schedule	
EN-D-3	Quantity Changes	Depends on time lapse- future condition vs. current, area is dynamic & can change	Likely	Significant	HIGH	Captured by EN-C-2	N/A	N/A	N/A	N/A	EN-D-1, DP-4/ EN-D-2	Design Branch	Construction Cost	Cust	*Risk item covered by EN-C-2 Quantity Estimates*

EN-G-3	Investigation & Inspection Costs	I looked back at the JAX Harbor drilling completed in 2010. We had IGE est of ~$360,000 for the mobilization alone for the drilling jack up. We were fortunate to get a lower cost rig, but under duress of construction, we may have to take what we can find. Therefore, $300,000 isn't unreasonable. Cost per day for equipment is ~$8000 times 10 days max=$80,000, and $5,000 per day for crew times 10 days = $50,000. These are the big ticket items. Worst case would put total project costs for additional 10 holes would be less than $700,000 instead of the $1.3M shown. The risk of this happening is low.	Unlikely	Marginal	LOW	$700,000	Unlikely	Significant	MODERATE	6 mo.		Geotechnical Branch	Project Cost & Schedule	Cost & Schedule	*Updated Likelihood, impact and ROI based on new feedback from Steve Myers EN-OC in email dated 3/1/2011*
EN-W-1	Modeling Accuracy	Pretty heavily refined model- 3D model, high level of confidence	N/A	N/A	N/A	N/A	Very Unlikely	Critical	LOW	1 mo.	CD-1; EN-W-2	H&H Branch	Construction Schedule	Schedule	*Changed Schedule Impact to reflect ROI and feedback from from Cornwell EN-W*
EN-W-2	Erosion Estimates	Erosion of adjacent shorelines and resultant shoaling; risk is that model is not accurate and proj. does not reduce erosion on Mile Pt. area	N/A	N/A	N/A	N/A	Very Unlikely	Significant	LOW	1 mo.	EN-W-1	H&H Branch	Construction Schedule	Schedule	
LS-1	Site Access	Has loading facility to load stone on barges- not a prob. since we own to gate on Blount Island; have rail into Tallyrand to load there as well	Unlikely	Marginal	LOW	$0	Unlikely	Marginal	LOW	0 mo.		Sponsor	Project Cost & Schedule	Cost & Schedule	
LS-3	Highway Restrictions	Will probably truck in small aggregate; not expected to tear up road; stone by rail to terminal, then use barges	Very Unlikely	Significant	LOW	$0	Unlikely	Marginal	LOW	0 mo.		Sponsor	Project Cost & Schedule	Cost & Schedule	*Downgraded Schedule Likelihood due to research*
LS-4	Cost Sharing	Prepared for it; risk may be a factor when it is time to sign agreement	N/A	N/A	N/A	N/A	Very Likely	Negligible	LOW	1 mo.		Sponsor	Project Schedule	Schedule	
LS-5	Public Support and Involvement	Currently a high level of support for project; only foresee small amt. of people having problem; people vesting to Congress regularly	N/A	N/A	N/A	N/A	Likely	Negligible	LOW	1 mo.	DP-5/ PD-N-2	Sponsor	Project Schedule	Schedule	
OC-1	Project Partnership Agreement	Delay in project implementation	N/A	N/A	N/A	N/A	Very Unlikely	Critical	LOW	0.5-2 mo.		Counsel	Project Schedule	Schedule	
OD-1	Project Maintenance Requirements	50 yr. standpoint- not much maint. for training wall; dredging- area will naturally remain scoured	Very Unlikely	Marginal	LOW	1.0%	Very Unlikely	Marginal	LOW	1.0%		Operations Division	Project Cost & Schedule	Cost & Schedule	*Updated Cost and Schedule ROI 2/1/2011 per email input from John Bearce OD-N*
OD-2	Monitoring Surveys	Don't plan on monitoring anymore than what we already require	Unlikely	Marginal	LOW	1.0%	Likely	Negligible	LOW	1.5%		Operations Division	Project Cost & Schedule	Cost & Schedule	*Updated Cost and Schedule ROI 2/1/2011 per email input from John Bearce OD-N*
OD-3	O&M Funding	Already have funding for surveys, so unlikely to cause delays or additional costs to proj.	Unlikely	Negligible	LOW	1.0%	Unlikely	Negligible	LOW	1.0%		Operations Division	Project Cost & Schedule	Cost & Schedule	*Updated Cost and Schedule ROI 2/1/2011 per email input from John Bearce OD-N*
PD-N-1	Economic Changes to Benefits	Feasibilty level of study w/ high level of design; port level and administrative level; Any impacts to benefit analysis (ie, change in fleet, commodity growth rates) would affect study costs, not project construction costs. be Hanjin construction completion seems to be a moving target, and already changed from 2015 (what is says in the Millepoint draft report) to 2017 (what it will say in the Jax Harbor GRR2 report) and who knows what in the future (the original Hanjin completion was suppose to be by end of 2011). That's not to say that the traffic cannot be made up by another entity (such as MCL) -- but that would not likely occur until the MCL/TraPac terminal reaches capacity (it is less than a quarter of capacity right now).	Likely	Significant	HIGH	$0	N/A	N/A	N/A	0 mo.		Planning Economics	Project Cost	Cost	*Updated Cost Likelihood rating based on 2/22/2011 email input from Dan Abecassis*
PD-N-3	Project Approval	Already capturing cost growth. Project expected to gain approval so unlikely that it will not get approved, however if delays to project approval then significant impacts.	N/A	N/A	N/A	N/A	Unlikely	Marginal	LOW	3 mo.		Planning Economics	Project Schedule	Schedule	*Updated Schedule Impact rating 2/2/2011 per email input from Sam Borer PD-PN*
RE-1	Land Acquisition Delays	All lands belong to government entities	Very Unlikely	Negligible	LOW	< 1%	Very Unlikely	Negligible	LOW	0 mo.		Real Estate	Project Cost & Schedule	Cost & Schedule	

External Risks (External Risk items are those that are generated, caused, or controlled exclusively outside the PDT's sphere of influence.)															
CT-2	Protests	Delay in project execution; Sole source- can't get approved or if there is a protest it can kill contract- high risk	N/A	N/A	N/A	N/A	Likely	Significant	HIGH	9 mo	DP-3	Contracting Division	Project Schedule	Schedule	
CT-4	Bidding Climate	Severe economic swings can increase / decrease number of potential bidders.	Likely	Marginal	MODERATE	-20% to +15%	Likely	Marginal	MODERATE	1 mo.	EN-C-7, EN-C-3				*Updated Impact and ROI based on input provided by Beau Dufant CF on 1/31/2011*
DP-5/ PD-N-2	Project Review and Authorization Delays	Likely b/c of public comment, review policy to adhere to, not a huge sched impact. Delay in execution of project components. Uncertainties with IEPR may impact schedule.	N/A	N/A	N/A	N/A	Unlikely	Marginal	LOW	1 mo.	LS-5	PM/Planning	Project Schedule	Schedule	*Updated Schedule impact rating 2/2/2011 per email input from Sam Boyer PD-PN*
EN-C-3	Equipment Availability	Dredge may have to come from further away, increasing mobilization costs or size / type of equipment available	Likely	Significant	HIGH	$4.8 M	Likely	Marginal	MODERATE	1 mo	DP-3, CT-4	Cost Engineering	Equipment	Cost & Schedule	*Updated Schedule Likelihood and ROI*
EN-C-4	Weather	Severe weather causing damage to project during construction.	Likely	Marginal	MODERATE	$1.8 M	Likely	Negligible	LOW	1 mo.	DP-3	Cost Engineering	Labor/Production Rates	Cost & Schedule	*Updated Schedule Impact since weather days already accounted for.*
EN-C-6	Fuel	$/ce per gallon was used in the Sep 08 MR, increases will effect equipment operating costs	Very Likely	Significant	HIGH	$446,000	N/A	N/A	N/A	N/A		Cost Engineering	Equipment	Cost	
EN-C-7	Labor	Labor Prices are fixed by Davis Bacon wage rates. Labor availability is subject to bidding climate	Unlikely	Marginal	LOW	< 1%	N/A	N/A	N/A	N/A	CT-4	Cost Engineering	Labor/Production Rates	Cost	
EN-G-1	Stone Material Quality	Salvage stone- if quality of intended reusable stone is bad then need to purchase additional stone- slip in sched and increase to cost, EN-D feels the estimated 14,600CY of recoverable stone is conservative estimate of what is out there, don't know gradation of stone.	Unlikely	Significant	MODERATE	3.33%	Very Unlikely	Negligible	LOW	1 mo	DP-3	Geotechnical	Project Cost & Schedule	Cost & Schedule	*Updated ROI 2/2/2011 per email input from Seven Myers EN-OC: $850,000 from EN-OC changed to 3.33% (=$850,000 based on assumption that potentially as much as 20% of estimated quantity of reusable stone is not suitable- would increase current construction cost by about 3.33%*
EN-G-2	Stone Material Availability	Have lots of nearby sources readily available	Very Unlikely	Significant	LOW	5%	Unlikely	Marginal	LOW	1 mo.	DP-3	Geotechnical	Construction Cost & Schedule	Cost & Schedule	*Updated ROI 2/2/2011 per email input from Seven Myers EN-OC: $850,000 from EN-OC changed to 5% of Construction Cost since item listed as significant impact and quick analysis showed increase in shipping costs from $60 to $100/ton yields about 5% increase.*
OC-2	Court injunctions	If we should receive a court injunction, all work on the project will come to a complete halt, an external factor that we cannot control	N/A	N/A	N/A	N/A	Very Unlikely	Critical	LOW	Years		Counsel	Project Schedule	Schedule	
PD-E-1	Environmental Monitoring and Mitigation	Predicting final marsh elevations difficult, may require future funding for long term monitoring	Unlikely	Significant	MODERATE	$1,000,000	Unlikely	Critical	MODERATE	12 mo.		Planning Environmental	Project Cost & Schedule	Cost & Schedule	
PD-E-2	Endangered Species Impact	Manatee takes, although unlikely, could create a slip in schedule during construction	Unlikely	Negligible	LOW	$240,000	Unlikely	Negligible	LOW	3 days	DP-3	Planning Environmental	Project Cost & Schedule	Cost & Schedule	*Updated Cost impact rating to reflect $100,000 magnitude and Schedule Likelihood and impact based on 2/10/2011 email input from Grady Caulk PD-EP*
PD-E-3	Environmental Restrictions	A potentially significant submerged prehistoric site has been identified in the proposed Great Marsh Island restoration area. The preferred alternative (restore marsh in Great Marsh Island) will have a "no adverse effect" resulting in no mitigation cost. Other alternatives, which are very unlikely to be used, may result in an adverse effect determination requiring mitigation. If needed additional evaluation and mitigation activities may take at least 36 months.	Very Unlikely	Critical	LOW	$5,000,000+	Very Unlikely	Critical	LOW	36 mo.	DP-3	Planning Environmental	Project Schedule	Schedule	*Updated Cost and Schedule Likelihood & Impact rating to reflect feedback in 2/10/2011 email input from Grady Caulk PD-EP*
PD-E-4	Permit Delays	Anticipate time to get permit and meet that- not significant	Likely	Negligible	LOW	$20,000	Unlikely	Critical	MODERATE	12 mo	DP-3	Planning Environmental	Project Schedule	Schedule	*Updated Schedule Impact Rating based on 2/10/2011 email input from Grady Caulk PD-EP*
RE-2	Property Values	Administrative costs only	Very Unlikely	Negligible	LOW	< 1%	Very Unlikely	Negligible	LOW	0 mo.		Real Estate	Project Cost & Schedule	Cost & Schedule	

*Likelihood, Impact, and Risk Level to be verified through market research and analysis (conducted by cost engineer).

1. Risk/Opportunity identified with reference to the Risk Identification Checklist and through deliberation and study of the PDT.
2. Discussions and Concerns elaborates on Risk/Opportunity Events and includes any assumptions or findings (should contain information pertinent to eventual study and analysis of event's impact to project).
3. Likelihood is a measure of the probability of the event occurring -- **Very Unlikely**, **Unlikely**, **Moderately Likely**, **Likely**, **Very Likely.** The likelihood of the event will be the same for both Cost and Schedule, regardless of impact.
4. Impact is a measure of the event's effect on project objectives with relation to scope, cost, and/or schedule -- **Negligible**, **Marginal**, **Significant**, **Critical**, or **Crisis.** Impacts on Project Cost may vary in severity from impacts on Project Schedule.
5. **Risk Level is the resultant of Likelihood and Impact Low, Moderate, or High. Refer to the matrix located at top of page.**
6. **Variance Distribution refers to the behavior of the individual risk item with respect to its potential effects on Project Cost and Schedule. For example, an item with clearly defined parameters and a solid most likely scenario would probably follow a triangular or normal distribution. A risk item for which the PDT has little data or probability of modeling with respect to effects on cost or schedule (i.e. "anyone's guess") would probably follow a uniform or discrete uniform distribution.**
7. **The responsibility or POC is the entity responsible as the Subject Matter Expert (SME) for action, monitoring, or information on the PDT for the identified risk or opportunity.**
8. **Correlation recognizes those risk events that may be related to one another. Care should be given to ensure the risks are handled correctly without a "double counting."**
9. **Affected Project Component identifies the specific item of the project to which the risk directly or strongly correlates.**
10. **Project Implications identifies whether or not the risk item affects project cost, project schedule, or both. The PDT is responsible for conducting studies for both Project Cost and for Project Schedule.**
11. **Results of the risk identification process are studied and further developed by the Cost Engineer, then analyzed through the Monte Carlo Analysis Method for Cost (Contingency) and Schedule (Escalation) Growth.**

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Cost & Schedule Risk Analysis Model

Contingency on Base Estimate	80% Confidence Project Cost
Baseline Estimate Cost (Most Likely) ->	$27,660,467
Baseline Estimate Cost Contingency Amount ->	$7,724,017
Baseline Estimate Construction Cost (80% Confidence) ->	$35,384,484

Contingency on Schedule	80% Confidence Project Schedule
Project Schedule Duration (Most Likely) ->	68.2 Months
Schedule Contingency Duration ->	29.9 Months
Project Schedule Duration (80% Confidence) ->	98.1 Months
Project Schedule Contingency Amount (80% Confidence) ->	$419,968

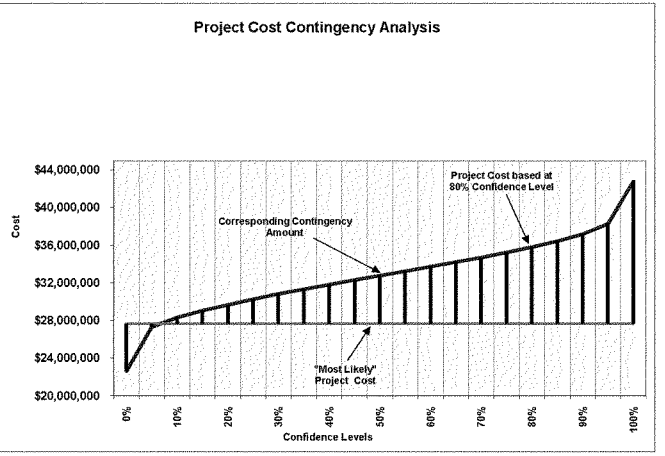
Project Contingency	80% Confidence Project Cost
Project Contingency Amount (80% Confidence) ->	$8,143,985
Project Contingency Percentage (80% Confidence) ->	29%

Project Cost (80% Confidence) ->	$35,804,452

- PROJECT CONTINGENCY DEVELOPMENT -

Contingency Analysis

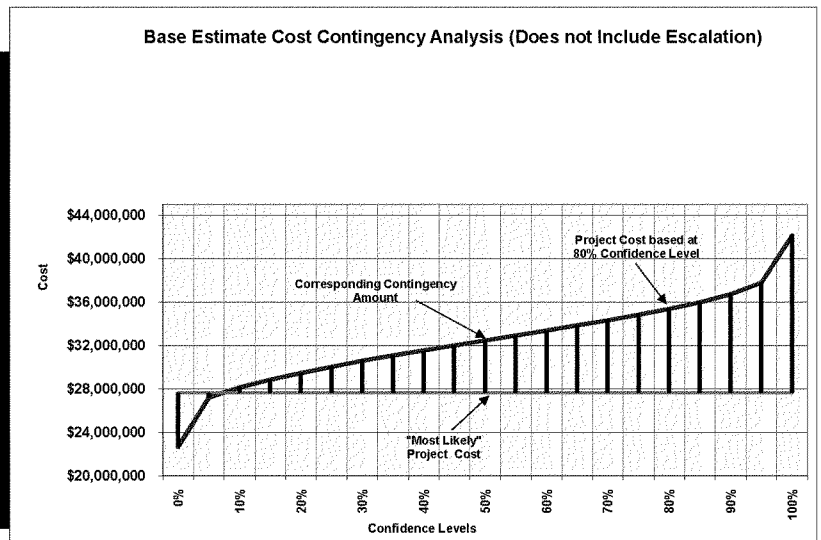
Most Likely Cost Estimate	$27,660,467		
Confidence Level	Project Cost	Contingency	Contingency %
0%	$22,656,136	($5,004,330)	-18.09%
5%	$27,319,884	($340,583)	-1.23%
10%	$28,323,970	$663,504	2.40%
15%	$29,061,427	$1,400,960	5.06%
20%	$29,672,679	$2,012,212	7.27%
25%	$30,270,680	$2,610,214	9.44%
30%	$30,843,997	$3,183,531	11.51%
35%	$31,341,319	$3,680,852	13.31%
40%	$31,826,234	$4,165,767	15.06%
45%	$32,311,775	$4,651,308	16.82%
50%	$32,776,924	$5,116,457	18.50%
55%	$33,240,512	$5,580,045	20.17%
60%	$33,728,730	$6,068,264	21.94%
65%	$34,216,760	$6,556,294	23.70%
70%	$34,689,217	$7,028,750	25.41%
75%	$35,237,230	$7,576,764	27.39%
80%	$35,804,452	$8,143,985	29.44%
85%	$36,427,500	$8,767,033	31.70%
90%	$37,189,845	$9,529,378	34.45%
95%	$38,270,714	$10,610,247	38.36%
100%	$42,766,335	$15,105,868	54.61%



- BASE CONTINGENCY DEVELOPMENT -

Contingency Analysis

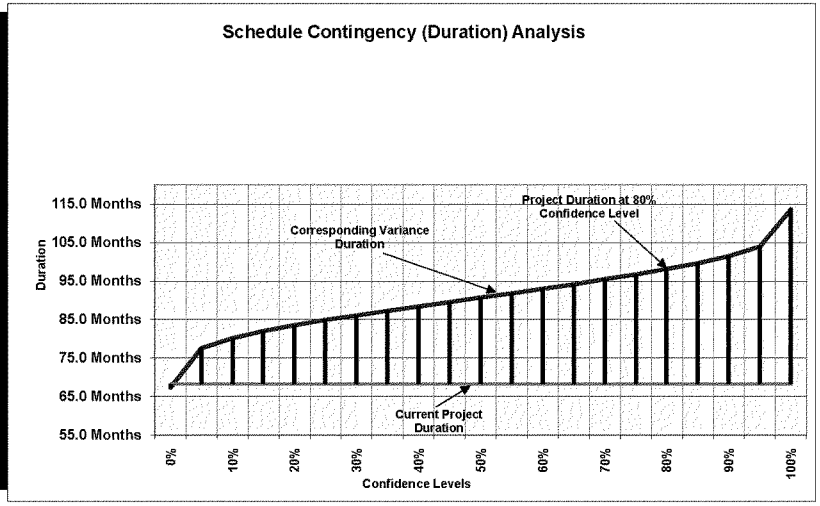
Most Likely Cost Estimate	$27,660,467		
Confidence Level	Project Cost	Contingency	Contingency %
0%	$22,668,667	($4,991,799.40)	-18.05%
5%	$27,188,411	($472,055.28)	-1.71%
10%	$28,156,158	$495,691.57	1.79%
15%	$28,868,149	$1,207,682.35	4.37%
20%	$29,457,670	$1,797,202.95	6.50%
25%	$30,036,870	$2,376,403.41	8.59%
30%	$30,593,376	$2,932,909.36	10.60%
35%	$31,074,521	$3,414,054.54	12.34%
40%	$31,543,316	$3,882,849.87	14.04%
45%	$32,013,001	$4,352,534.47	15.74%
50%	$32,461,615	$4,801,147.91	17.36%
55%	$32,909,844	$5,249,377.37	18.98%
60%	$33,381,688	$5,721,221.52	20.68%
65%	$33,853,108	$6,192,641.37	22.39%
70%	$34,306,988	$6,646,521.56	24.03%
75%	$34,837,110	$7,176,643.86	25.95%
80%	$35,384,484	$7,724,017.34	27.92%
85%	$35,986,877	$8,326,410.06	30.10%
90%	$36,723,845	$9,063,378.12	32.77%
95%	$37,769,640	$10,109,173.57	36.55%
100%	$42,129,836	$14,469,369.01	52.31%



- SCHEDULE CONTINGENCY (DURATION) DEVELOPMENT -

Contingency Analysis

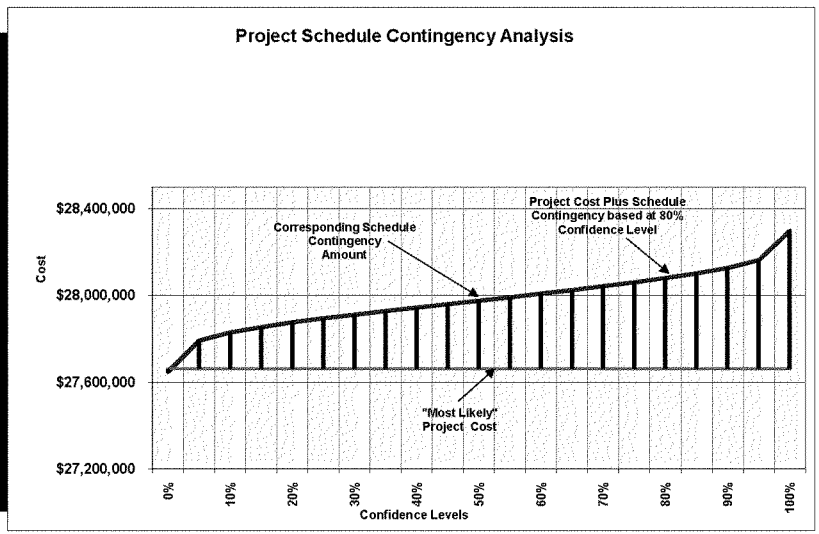
Most Likely Schedule Duration	68.2 Months		
Confidence Level	Project Duration	Contingency	Contingency %
0%	67.3 Months	-0.9 Months	-1.31%
5%	77.6 Months	9.4 Months	13.74%
10%	80.2 Months	12.0 Months	17.53%
15%	82.0 Months	13.8 Months	20.20%
20%	83.5 Months	15.3 Months	22.47%
25%	84.9 Months	16.7 Months	24.43%
30%	86.1 Months	17.9 Months	26.19%
35%	87.2 Months	19.0 Months	27.88%
40%	88.4 Months	20.2 Months	29.56%
45%	89.5 Months	21.3 Months	31.22%
50%	90.7 Months	22.5 Months	32.95%
55%	91.8 Months	23.6 Months	34.55%
60%	92.9 Months	24.7 Months	36.26%
65%	94.1 Months	25.9 Months	38.00%
70%	95.5 Months	27.2 Months	39.94%
75%	96.7 Months	28.5 Months	41.81%
80%	98.1 Months	29.9 Months	43.88%
85%	99.6 Months	31.4 Months	46.04%
90%	101.4 Months	33.2 Months	48.69%
95%	103.9 Months	35.7 Months	52.36%
100%	113.6 Months	45.4 Months	66.51%

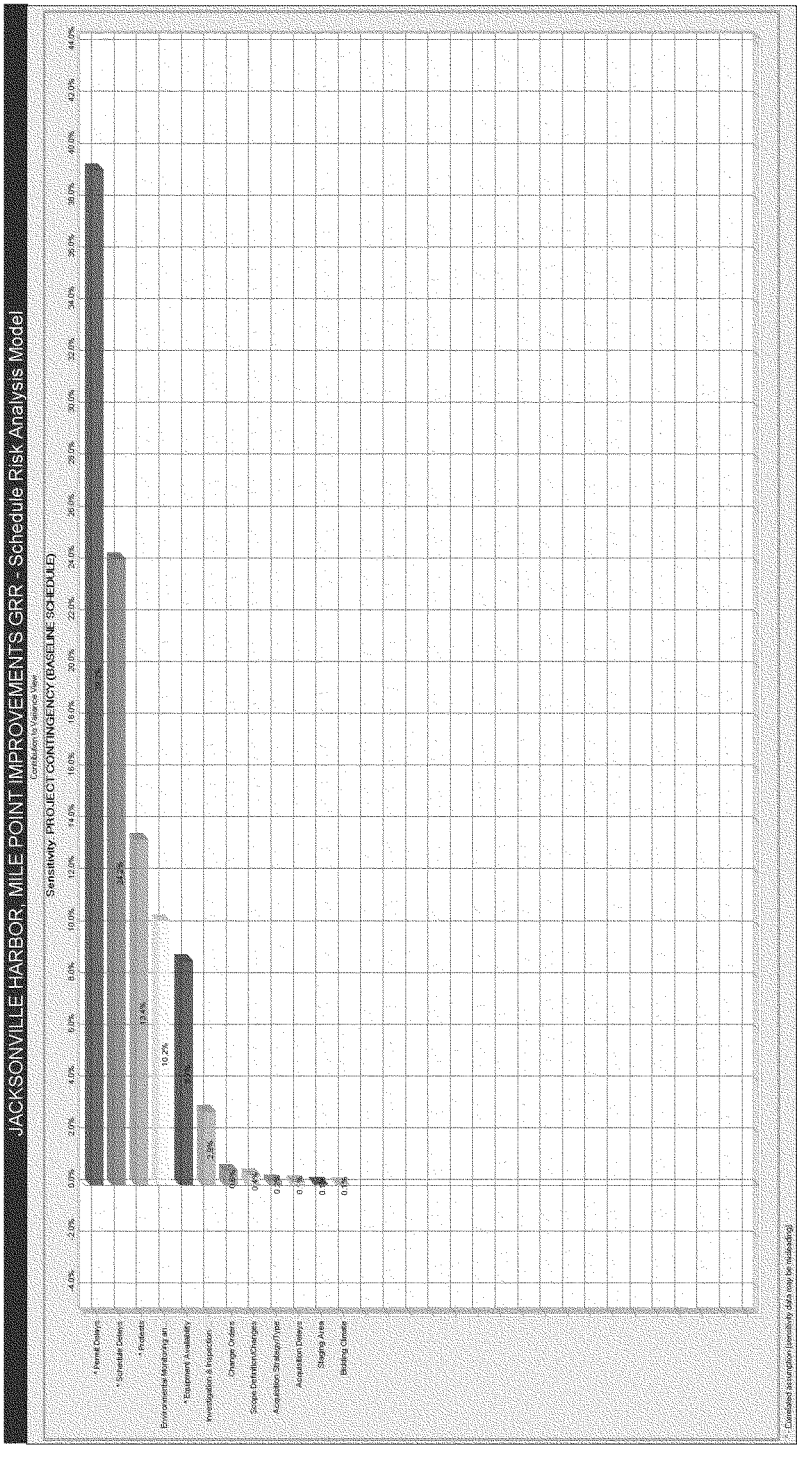


- SCHEDULE CONTINGENCY (AMOUNT) DEVELOPMENT -

Contingency Analysis

Most Likely Cost Estimate	$27,660,467		
Confidence Level	Project Cost	Contingency	Contingency %
0%	$27,647,936	($12,531)	-0.05%
5%	$27,791,939	$131,473	0.48%
10%	$27,828,279	$167,812	0.61%
15%	$27,853,744	$193,278	0.70%
20%	$27,875,476	$215,009	0.78%
25%	$27,894,277	$233,810	0.85%
30%	$27,911,088	$250,621	0.91%
35%	$27,927,264	$266,798	0.96%
40%	$27,943,384	$282,917	1.02%
45%	$27,959,240	$298,774	1.08%
50%	$27,975,776	$315,309	1.14%
55%	$27,991,134	$330,668	1.20%
60%	$28,007,509	$347,042	1.25%
65%	$28,024,119	$363,652	1.31%
70%	$28,042,695	$382,229	1.38%
75%	$28,060,586	$400,120	1.45%
80%	$28,080,434	$419,968	1.52%
85%	$28,101,090	$440,623	1.59%
90%	$28,126,466	$466,000	1.68%
95%	$28,161,541	$501,074	1.81%
100%	$28,296,966	$636,499	2.30%




JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model
Correlations to Variance View
Sensitivity: PROJECT CONTINGENCY (BASELINE SCHEDULE)
* Permit Delays
* Schedule Delays
* Pollutants
Environmental Monitoring an...
* Equipment Availability
Investigation & Inspection
Change Orders
Scope Definition Changes
Acquisition Strategy/Type
Acquisition Delays
Staging Area
Bidding Delays
-4.0%
-2.0%
0.0%
2.0%
4.0%
6.0%
8.0%
10.0%
12.0%
14.0%
16.0%
18.0%
20.0%
22.0%
24.0%
26.0%
28.0%
30.0%
32.0%
34.0%
36.0%
38.0%
40.0%
42.0%
44.0%
* Correlated assumption (sensitivity data may be misleading)

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

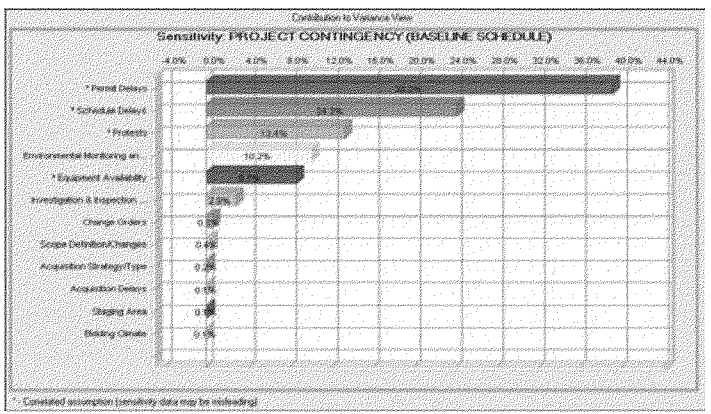
Risk No.	Risk/Opportunity Event	Discussion and Concerns	Project Cost Likelihood*	Project Cost Impact*	Project Cost Risk Level*	Variance Distribution	Correlation to Other(s)	Crystal Ball Simulation Expected Values ($$$) Low	Most Likely	High	Crystal Ball Simulation Expected Values (%s) Low	Most Likely	High
Internal Risks (Internal Risk Items are those that are generated, caused, or controlled within the PDT's sphere of influence.)													
CD-1	Change Orders	Time and cost impacts vary greatly on individual issues. Changes near end of project dont impact schedule.	Very Likely	Significant	HIGH	Uniform	ENVI-1	0.0 Months	0.0 Months	3.0 Months	0.0%	0.0%	4.4%
CD-3/ LS-2	Staging Area	Potential for problems with location, issues w/ runway, lights needed for cranes @ certain ht, aircraft- impact ht. restriction; Impacts contractor's operation	Very Likely	Marginal	MODERATE	Uniform		0.0 Months	0.0 Months	1.0 Months	0.0%	0.0%	1.5%
CT-1	Acquisition Strategy/Type	Impacts effort in award, some contract vehicles more conducive to lower cost; Prefer Best Value RFP w/ source selection plan; Increased cost/time to implement multiple awards	Unlikely	Significant	MODERATE	Uniform		0.0 Months	0.0 Months	2.0 Months	0.0%	0.0%	2.8%
CT-3	Acquisition Delays	If the Sole-Source e-J3A does not get approved, could impact the schedule by up to 12 months while the PDT comes up with another alternative	Unlikely	Significant	MODERATE	Uniform		0.0 Months	0.0 Months	1.0 Months	0.0%	0.0%	1.5%
DP-3	Schedule Delays	Hard to fund if not in 2013 budget -automatic sched. delay; In short term, delays based on 3 sent. of contract are likely; delay in execution of ind. components	Likely	Marginal	MODERATE	Uniform	CD-1, EN-C-3, EN-G-1, EN-G-2, PD-E-2, PD-E-3,	0.0 Months	0.0 Months	4.0 Months	0.0%	0.0%	5.9%
DP-4/ EN-D-2	Scope Definition/Changes	Scope is well defined; little likelihood of scope increase or changes from current docs used for estimate development; Engineering pt. of view, if the project lingers, conditions may change	Unlikely	Significant	MODERATE	Uniform		0.0 Months	0.0 Months	3.0 Months	0.0%	0.0%	4.4%
EN-G-3	Investigation & Inspection Costs	Good quality stone readily avail, won't need further investigation	Unlikely	Significant	MODERATE	Uniform		0.0 Months	0.0 Months	6.0 Months	0.0%	0.0%	8.9%
External Risks (External Risk Items are those that are generated, caused, or controlled exclusively outside the PDT's sphere of influence.)													
CT-2	Protests	Delay in project execution	Likely	Significant	HIGH	Uniform	DP-3	0.0 Months	0.0 Months	6.0 Months	0.0%	0.0%	8.9%
CT-4	Bidding Climate	Severe economic swings can increase / decrease number of potential bidders.	Likely	Marginal	MODERATE	Uniform		0.0 Months	0.0 Months	1.0 Months	0.0%	0.0%	1.5%
EN-C-3	Equipment Availability	Dredge may have to come from further away, increasing mobilization costs or size / type of equipment available	Likely	Marginal	MODERATE	Uniform	DP-3, CT-4	-1.0 Months	0.0 Months	1.0 Months	-1.5%	0.0%	1.5%
PD-E-1	Environmental Monitoring and Mitigation	Predicting final marsh elevations difficult, may require future funding for long term monitoring	Unlikely	Critical	MODERATE	Uniform		0.0 Months	0.0 Months	12.0 Months	0.0%	0.0%	17.8%
PD-E-4	Permit Delays	Anticipate time to get permit and meet that- not significant	Unlikely	Critical	MODERATE	Uniform	DP-3	-6.0 Months	0.0 Months	12.0 Months	-8.8%	0.0%	17.8%
									0.0 Months				

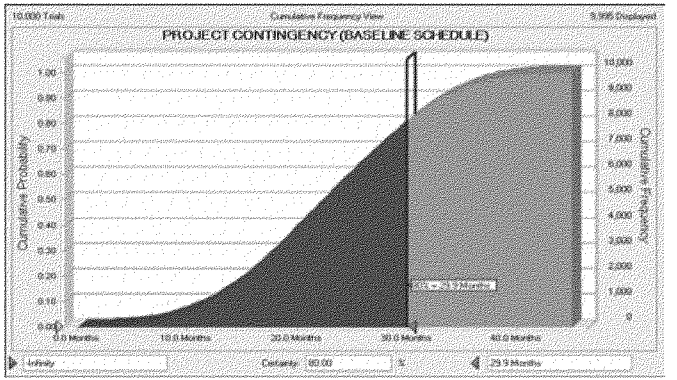
Not Part of Study - Placeholder for Project Summation Purposes Only

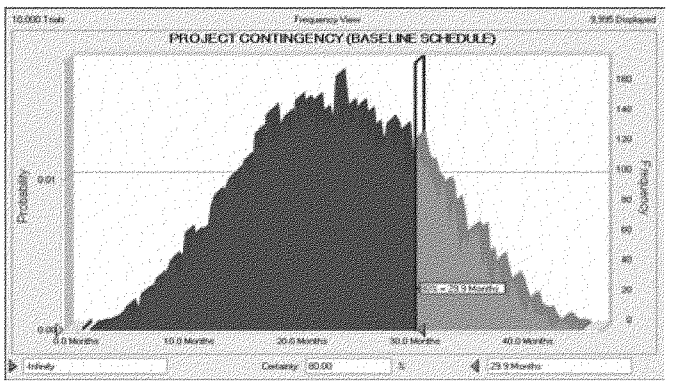
Percentages are calculated as the variance from the assumption value to facilitate iteration of the model should the cost values change throughout the project phases. Uniform distribution percentages reflect variation from the total project cost.

Contingency Summary Table - Schedule

PROJECT CONTINGENCY (BASELINE SCHEDULE)	Percentile	Baseline TPC	Contingency Amount	Baseline w/ Contingency	Contingency %
	0%	68.2 Months	-0.9 Months	**67.3 Months**	**-1.31%**
	5%	68.2 Months	9.4 Months	**77.6 Months**	**13.74%**
	10%	68.2 Months	12.0 Months	**80.2 Months**	**17.53%**
	15%	68.2 Months	13.8 Months	**82.0 Months**	**20.20%**
	20%	68.2 Months	15.3 Months	**83.5 Months**	**22.47%**
	25%	68.2 Months	16.7 Months	**84.9 Months**	**24.43%**
	30%	68.2 Months	17.9 Months	**86.1 Months**	**26.19%**
	35%	68.2 Months	19.0 Months	**87.2 Months**	**27.88%**
	40%	68.2 Months	20.2 Months	**88.4 Months**	**29.56%**
	45%	68.2 Months	21.3 Months	**89.5 Months**	**31.22%**
	50%	68.2 Months	22.5 Months	**90.7 Months**	**32.95%**
	55%	68.2 Months	23.6 Months	**91.8 Months**	**34.55%**
	60%	68.2 Months	24.7 Months	**92.9 Months**	**36.26%**
	65%	68.2 Months	25.8 Months	**94.1 Months**	**38.00%**
	70%	68.2 Months	27.2 Months	**95.5 Months**	**39.94%**
	75%	68.2 Months	28.5 Months	**96.7 Months**	**41.81%**
	80%	68.2 Months	29.9 Months	**98.1 Months**	**43.88%**
	85%	68.2 Months	31.4 Months	**99.6 Months**	**46.04%**
	90%	68.2 Months	33.2 Months	**101.4 Months**	**48.69%**
	95%	68.2 Months	35.7 Months	**103.9 Months**	**52.36%**
	100%	68.2 Months	45.4 Months	**113.6 Months**	**66.51%**







JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - SCHEDULE RISK ANALYSIS

Enter Estimated Total Project Cost (Price Level)	$27,660,467
Max. Anticipated Annual Amount	$4,868,909
Enter Current OMB Escalation Rate	1.80%
Enter Current Project Location Escalation Rate	1.80%
Enter Assumed Hotel Rate	3.46%

	Date	Escalation Delta Amount	Hotel Amount	Total Schedule Contingency
Enter Current Project Start	16-Mar-09			
Enter Baseline Project Completion	20-Nov-14			
Project Completion at 0% Confidence	23-Oct-14		($12,531.09)	($12,531.09)
Project Completion at 5% Confidence	1-Sep-15		$131,472.77	$131,472.77
Project Completion at 10% Confidence	18-Nov-15		$167,811.93	$167,811.93
Project Completion at 15% Confidence	13-Jan-16		$193,277.74	$193,277.74
Project Completion at 20% Confidence	29-Feb-16		$215,008.95	$215,008.95
Project Completion at 25% Confidence	9-Apr-16		$233,810.28	$233,810.28
Project Completion at 30% Confidence	16-May-16		$250,621.35	$250,621.35
Project Completion at 35% Confidence	20-Jun-16		$266,797.67	$266,797.67
Project Completion at 40% Confidence	25-Jul-16		$282,917.36	$282,917.36
Project Completion at 45% Confidence	28-Aug-16		$298,773.56	$298,773.56
Project Completion at 50% Confidence	3-Oct-16		$315,309.48	$315,309.48
Project Completion at 55% Confidence	5-Nov-16		$330,667.79	$330,667.79
Project Completion at 60% Confidence	11-Dec-16		$347,042.25	$347,042.25
Project Completion at 65% Confidence	16-Jan-17		$363,652.44	$363,652.44
Project Completion at 70% Confidence	25-Feb-17		$382,228.83	$382,228.83
Project Completion at 75% Confidence	5-Apr-17		$400,119.77	$400,119.77
Project Completion at 80% Confidence	18-May-17		$419,967.76	$419,967.76
Project Completion at 85% Confidence	2-Jul-17		$440,623.11	$440,623.11
Project Completion at 90% Confidence	26-Aug-17		$465,999.77	$465,999.77
Project Completion at 95% Confidence	10-Nov-17		$501,073.90	$501,073.90
Project Completion at 100% Confidence	31-Aug-18		$636,499.29	$636,499.29

Entry Required

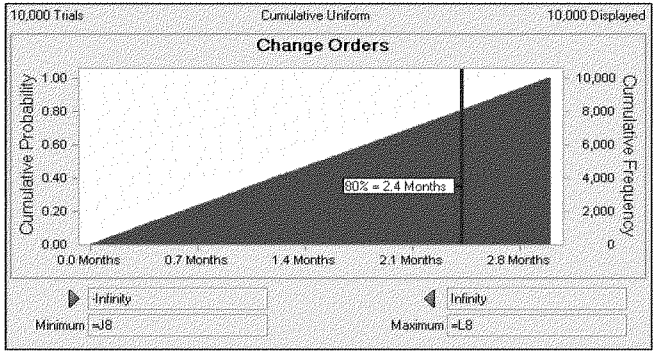
Do Not Overwrite

Summary Data -- Do Not Overwrite

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
CD-1	Change Orders	0.0 Months	0.0 Months	3.0 Months

Notes: This item captures the risk of schedule delay due to change orders.
Likely Most likely assumes no schedule growth due to change orders.
Low Low assumes no schedule growth due to change orders.
High High assumes up to 3 months delay, based on input from Construction Division.



Assumption: Change Orders

Percentile	Assumption values
0%	0.0 Months
10%	0.3 Months
20%	0.6 Months
30%	0.9 Months
40%	1.2 Months
50%	1.5 Months
60%	1.8 Months
70%	2.1 Months
80%	2.4 Months
90%	2.7 Months
100%	3.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

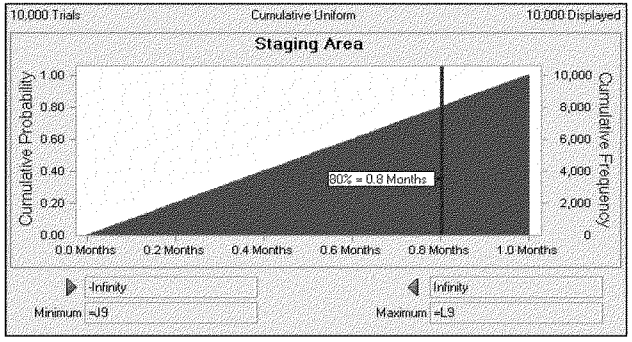
Risk Refer No.	Risk Event	Low	Most Likely	High
CD-3/ LS-2	Staging Area	0.0 Months	0.0 Months	1.0 Months

Notes: This item captures the risk that there will be schedule impact to the stone placement for the jetty work due to the unavailability of staging areas. The sponsor and the Corps is confident in the availability of the staging areas currently contemplated.

Likely Most likely assumes no change to the baseline schedule.

Low The baseline schedule was made on the most optimum conditions.

High High assumes that the availability of staging areas for cranes is less favorable, creating a total schedule impact of up to one month.



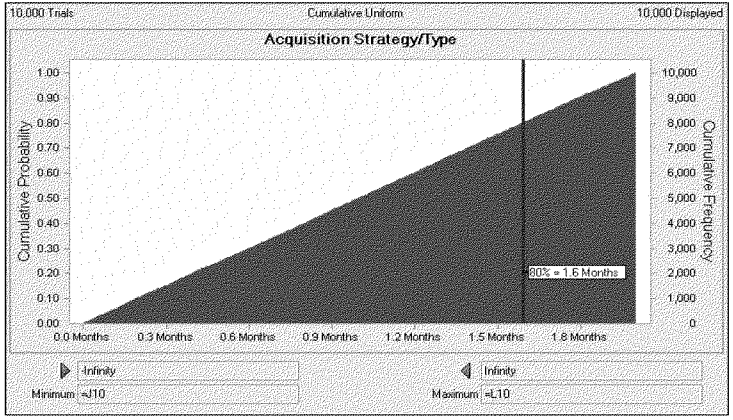
Assumption: Staging Area

Percentile	Assumption values
0%	0.0 Months
10%	0.1 Months
20%	0.2 Months
30%	0.3 Months
40%	0.4 Months
50%	0.5 Months
60%	0.6 Months
70%	0.7 Months
80%	0.8 Months
90%	0.9 Months
100%	1.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
CT-1	Acquisition Strategy/Type	0.0 Months	0.0 Months	2.0 Months

Notes: This item captures the risk of total project schedule delay due to the selected acquisition strategy.
Likely Most likely assumes no change to baseline schedule.
Low Low assumes no change to baseline schedule.
High High assumes that acquisition strategy could delay the schedule by up to 2 months.



Assumption: Acquisition Strategy/Type

Percentile	Assumption values
0%	0.0 Months
10%	0.2 Months
20%	0.4 Months
30%	0.6 Months
40%	0.8 Months
50%	1.0 Months
60%	1.2 Months
70%	1.4 Months
80%	1.6 Months
90%	1.8 Months
100%	2.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

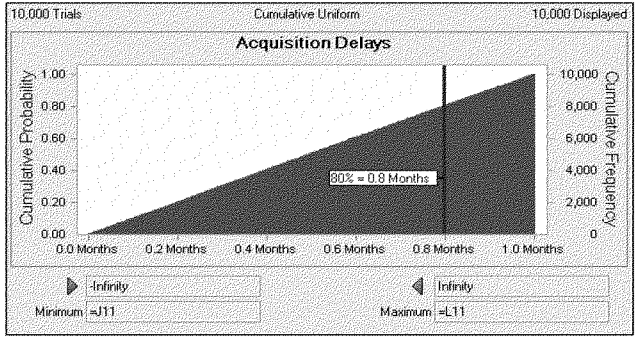
Risk Refer No.	Risk Event	Low	Most Likely	High
CT-3	Acquisition Delays	0.0 Months	0.0 Months	1.0 Months

Notes: This item captures the risk that delays in getting the contract solicited could impact the current schedule (1 month delay due to overwhelming response or other administrative procedures).

Likely Most likely assumes no change to the baseline schedule.

Low Low assumes no change to the baseline schedule.

High High assumes that delays in the soliciitation could delay the schedule by up to one month.



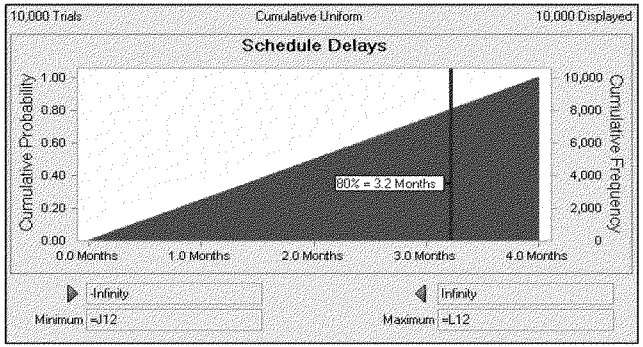
Assumption: Acquisition Delays

Percentile	Assumption values
0%	0.0 Months
10%	0.1 Months
20%	0.2 Months
30%	0.3 Months
40%	0.4 Months
50%	0.5 Months
60%	0.6 Months
70%	0.7 Months
80%	0.8 Months
90%	0.9 Months
100%	1.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
DP-3	Schedule Delays	0.0 Months	0.0 Months	4.0 Months

Notes: This item captures the risk that the project could experience delay if it is not in the 2010 budget.
Likely Most likely assumes no change to the baseline schedule.
Low Low assumes no change to the baseline schedule.
High High assumes that funding constraints could delay the project by up to 4 months.



Assumption: Schedule Delays

Percentile	Assumption values
0%	0.0 Months
10%	0.4 Months
20%	0.8 Months
30%	1.2 Months
40%	1.6 Months
50%	2.0 Months
60%	2.4 Months
70%	2.8 Months
80%	3.2 Months
90%	3.6 Months
100%	4.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

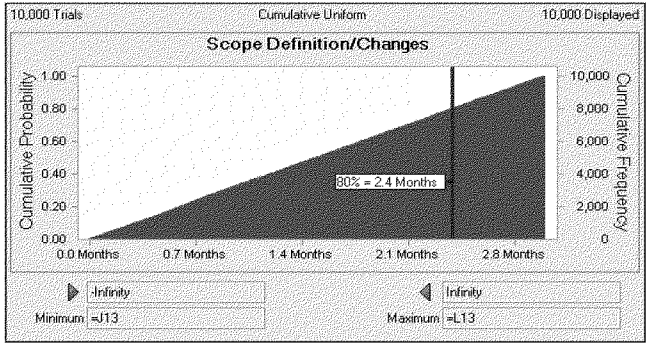
Risk Refer No.	Risk Event	Low	Most Likely	High
DP-4/ EN-D-2	Scope Definition/Changes	0.0 Months	0.0 Months	3.0 Months

Notes: This item captures the risk that there could be some conditions that changes that affect project scope, particularly if the project languishes.

Likely Most likely assumes no change to the baseline schedule.

Low Low assumes no change to the baseline schedule.

High High assumes that changes in site conditions could delay the project by up to 3 months.



Assumption: Scope Definition/Changes

Percentile	Assumption values
0%	0.0 Months
10%	0.3 Months
20%	0.6 Months
30%	0.9 Months
40%	1.2 Months
50%	1.5 Months
60%	1.8 Months
70%	2.1 Months
80%	2.4 Months
90%	2.7 Months
100%	3.0 Months

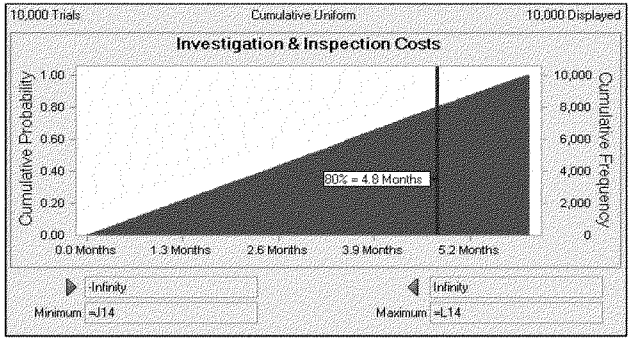
Risk Refer No.	Risk Event	Low	Most Likely	High
EN-G-3	Investigation & Inspection Costs	0.0 Months	0.0 Months	6.0 Months

Notes: This captures the risk that more investigation and inspection is actually required than currently contemplated.

Likely Most likely assumes no change to the baseline schedule.

Low Low assumes no change to the baseline schedule.

High High assumes that increased investigation and inspection could delay the schedule by up to 6 months.



Assumption: Investigation & Inspection Costs

Percentile	Assumption values
0%	0.0 Months
10%	0.6 Months
20%	1.2 Months
30%	1.8 Months
40%	2.4 Months
50%	3.0 Months
60%	3.6 Months
70%	4.2 Months
80%	4.8 Months
90%	5.4 Months
100%	6.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
CT-2	Protests	0.0 Months	0.0 Months	6.0 Months

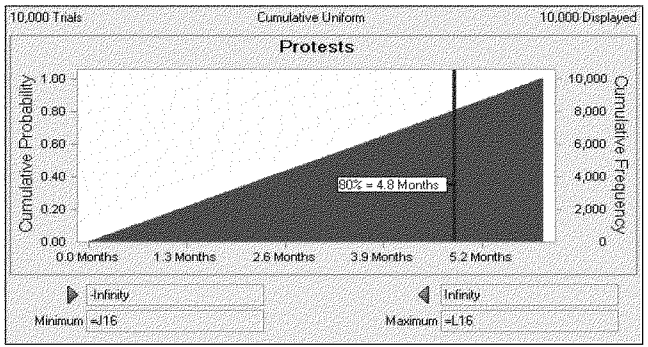
Notes:

This item captures the risk that there could be schedule delays due to contractor protests.

Likely Most likely assumes no change from the current schedule.

Low Low assumes no change from the current schedule.

High High assumes that contractor protests could cause up to 6 months of delay.



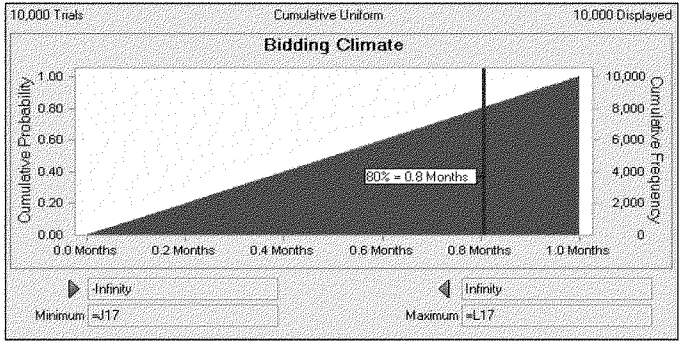
Assumption: Protests

Percentile	Assumption values
0%	0.0 Months
10%	0.6 Months
20%	1.2 Months
30%	1.8 Months
40%	2.4 Months
50%	3.0 Months
60%	3.6 Months
70%	4.2 Months
80%	4.8 Months
90%	5.4 Months
100%	6.0 Months

Risk Refer No	Risk Event	Low	Most Likely	High
CT-4	Bidding Climate	0.0 Months	0.0 Months	1.0 Months

Notes: This item captures the risk of total project schedule delay due to the selected acquisition strategy.

Likely Most likely assumes no change to baseline schedule.
Low Low assumes no change to baseline schedule.
High High assumes that acquisition strategy could delay the schedule by up to 1 month.



Assumption: Bidding Climate

Percentile	Assumption values
0%	0.0 Months
10%	0.1 Months
20%	0.2 Months
30%	0.3 Months
40%	0.4 Months
50%	0.5 Months
60%	0.6 Months
70%	0.7 Months
80%	0.8 Months
90%	0.9 Months
100%	1.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

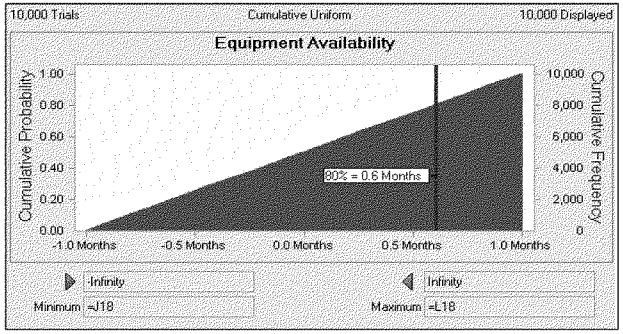
Risk Refer No	Risk Event	Low	Most Likely	High
EN-C-3	Equipment Availability	-1.0 Months	0.0 Months	1.0 Months

Notes: This item captures the risk that limited availability of equipment in the dredging industry and regional market could cause schedule delays.

Likely Most likely assumes no change to the current schedule (using 16" pipeline).

Low Low assumes that schedule could improve by up to 1 month if dredge mobilizes from local area.

High High assumes that limited equipment availability could create up to 1 month of delay.



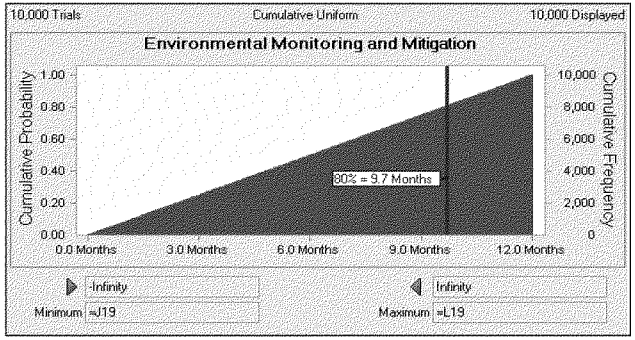
Assumption: Equipment Availability

Percentile	Assumption values
0%	'-1.0 Months
10%	'-0.8 Months
20%	'-0.6 Months
30%	'-0.4 Months
40%	'-0.2 Months
50%	0.0 Months
60%	0.2 Months
70%	0.4 Months
80%	0.6 Months
90%	0.8 Months
100%	1.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

Risk Refer No.	Risk Event	Low	Most Likely	High
PD-E-1	Environmental Monitoring and Mitigation	0.0 Months	0.0 Months	12.0 Months

Notes: This item captures the risk that there will be more moniotring and mitigation required due to changing conditions in the marsh elevations.
Likely Most likely assumes no change to the baseline schedule.
Low Low assumes no change to the baseline schedule.
High High assumes that monitoring and mitigation efforts could cause delays up to one year.



Assumption: Environmental Monitoring and Mitigation

Percentile	Assumption values
0%	0.0 Months
10%	1.2 Months
20%	2.4 Months
30%	3.6 Months
40%	4.8 Months
50%	6.1 Months
60%	7.3 Months
70%	8.5 Months
80%	9.7 Months
90%	10.8 Months
100%	12.0 Months

JACKSONVILLE HARBOR, MILE POINT IMPROVEMENTS GRR - Schedule Risk Analysis Model

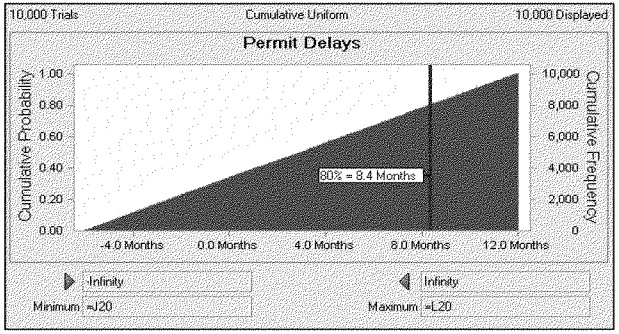
Risk Refer No.	Risk Event	Low	Most Likely	High
PD-E-4	Permit Delays	-6.0 Months	0.0 Months	12.0 Months

Notes: This item captures the risk that inability to obtain permits in a timely manner could significantly impact the project schedule.

Likely Most likely assumes no change to baseline schedule.

Low Low assumes that permits could be obtained much sooner than contemplated, allowing for up to 6 months of improvement on the total project schedule.

High High assumes that issues in obtaining permits could cause up to one year in delay.



Assumption: Permit Delays

Percentile	Assumption values
0%	'-6.0 Months
10%	'-4.2 Months
20%	'-2.5 Months
30%	'-0.7 Months
40%	1.2 Months
50%	3.1 Months
60%	4.8 Months
70%	6.6 Months
80%	8.4 Months
90%	10.2 Months
100%	12.0 Months

Crystal Ball Report - Full
Simulation started on 3/26/2011 at 5:28 PM
Simulation stopped on 3/26/2011 at 5:29 PM

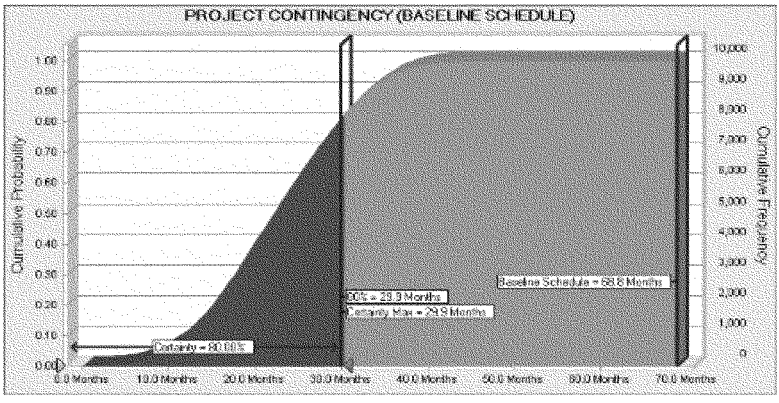
Run preferences:	
Number of trials run	10,000
Monte Carlo	
Seed	999
Precision control on	
Confidence level	95.00%
Run statistics:	
Total running time (sec)	12.16
Trials/second (average)	822
Random numbers per sec	9,868
Crystal Ball data:	
Assumptions	12
Correlations	3
Correlated groups	1
Decision variables	0
Forecasts	1

Forecasts

Worksheet: [Risk Analysis (Schedule)-Milepoint_3-2-11.xlsx]Schedule Risk Model

Forecast: PROJECT CONTINGENCY (BASELINE SCHEDULE) **Cell: K22**

Summary:
Certainty level is 80.00%
Certainty range is from -Infinity to 29.9 Months
Entire range is from -0.9 Months to 45.4 Months
Base case is 0.0 Months
After 10,000 trials, the std. error of the mean is 0.1 Months



Statistics:	Forecast values
Trials	10,000
Base Case	0.0 Months
Mean	22.5 Months
Median	22.5 Months
Mode	---
Standard Deviation	8.1 Months
Variance	65.0 Months
Skewness	0.0238
Kurtosis	2.44
Coeff. of Variability	0.3576
Minimum	-0.9 Months
Maximum	45.4 Months
Range Width	46.3 Months
Mean Std. Error	0.1 Months

Forecast: PROJECT CONTINGENCY (BASELINE SCHEDULE) (cont'd) Cell: K22

Percentiles:	Forecast values
0%	-0.9 Months
10%	12.0 Months
20%	15.3 Months
30%	17.9 Months
40%	20.2 Months
50%	22.5 Months
60%	24.7 Months
70%	27.2 Months
80%	29.9 Months
90%	33.2 Months
100%	45.4 Months

End of Forecasts

Risk Analysis (Schedule)-Milepoint - Final - Updated 3-26-11.xlsx

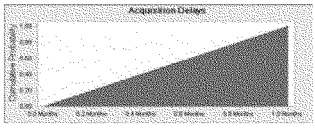
Assumptions

Worksheet: [Risk Analysis (Schedule)-Milepoint_3-2-11.xlsx]Schedule Risk Model

Assumption: Acquisition Delays **Cell: K11**

Uniform distribution with parameters:

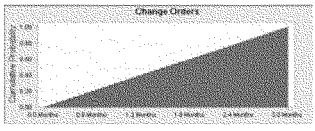
Minimum	0.0 Months	(=J11)
Maximum	1.0 Months	(=L11)



Assumption: Change Orders **Cell: K8**

Uniform distribution with parameters:

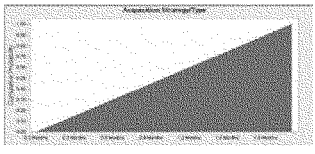
Minimum	0.0 Months	(=J8)
Maximum	3.0 Months	(=L8)



Assumption: Acquisition Strategy/Type **Cell: K10**

Uniform distribution with parameters:

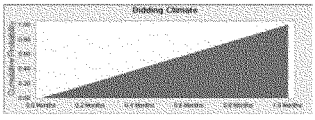
Minimum	0.0 Months	(=J10)
Maximum	2.0 Months	(=L10)



Assumption: Bidding Climate **Cell: K17**

Uniform distribution with parameters:

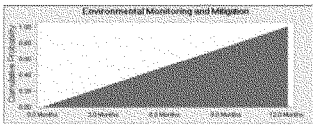
Minimum	0.0 Months	(=J17)
Maximum	1.0 Months	(=L17)



Assumption: Environmental Monitoring and Mitigation **Cell: K19**

Uniform distribution with parameters:

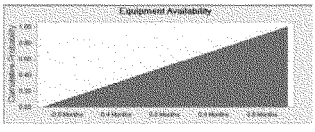
Minimum	0.0 Months	(=J19)
Maximum	12.0 Months	(=L19)



Assumption: Equipment Availability **Cell: K18**

Uniform distribution with parameters:

Minimum	-1.0 Months	(=J18)
Maximum	1.0 Months	(=L18)



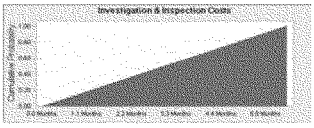
Correlated with:	Coefficient
Schedule Delays (K12)	0.50

Assumption: Investigation & Inspection Costs **Cell: K14**

Uniform distribution with parameters:

Minimum	0.0 Months	(=J14)
Maximum	6.0 Months	(=L14)

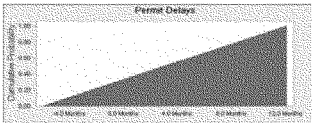
Assumption: Investigation & Inspection Costs (cont'd) **Cell: K14**



Assumption: Permit Delays **Cell: K20**

Uniform distribution with parameters:

Minimum	-6.0 Months	(=J20)
Maximum	12.0 Months	(=L20)

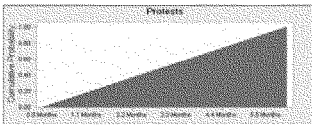


Correlated with:	Coefficient
Schedule Delays (K12)	0.50

Assumption: Protests **Cell: K16**

Uniform distribution with parameters:

Minimum	0.0 Months	(=J16)
Maximum	6.0 Months	(=L16)



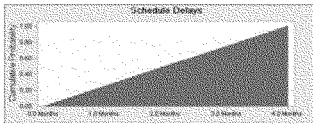
Correlated with:	Coefficient
Schedule Delays (K12)	0.50

Assumption: Schedule Delays **Cell: K12**

Uniform distribution with parameters:

Minimum	0.0 Months	(=J12)
Maximum	4.0 Months	(=L12)

Assumption: Schedule Delays (cont'd) **Cell: K12**

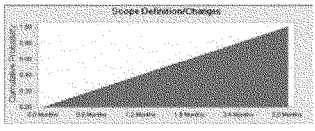


Correlated with:	Coefficient
Permit Delays (K20)	0.50
Equipment Availability (K18)	0.50
Protests (K16)	0.50

Assumption: Scope Definition/Changes **Cell: K13**

Uniform distribution with parameters:

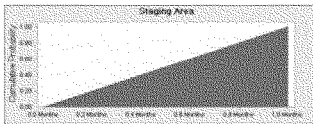
Minimum	0.0 Months	(=J13)
Maximum	3.0 Months	(=L13)



Assumption: Staging Area **Cell: K9**

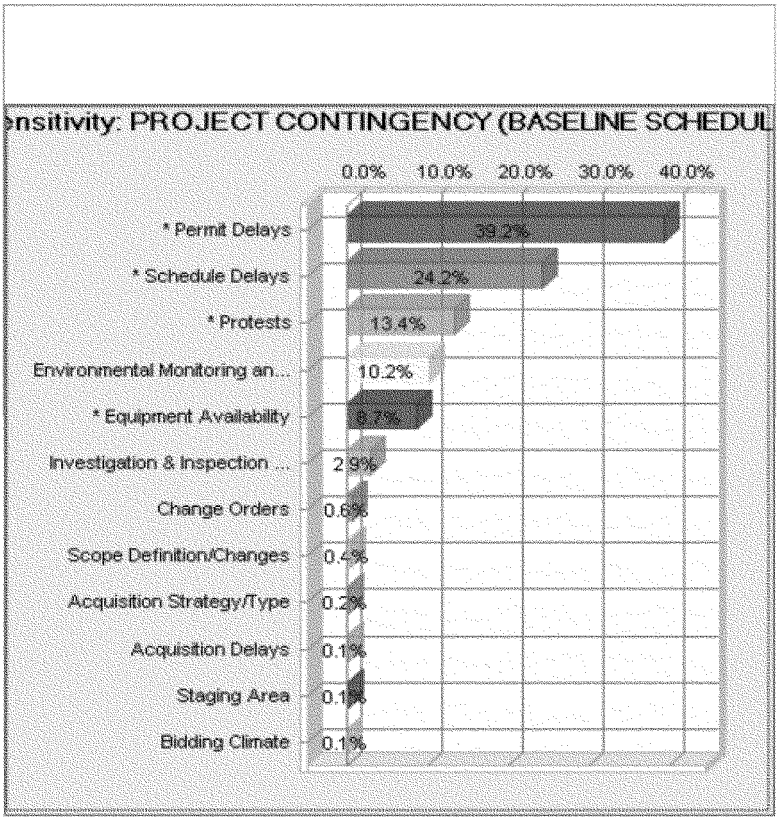
Uniform distribution with parameters:

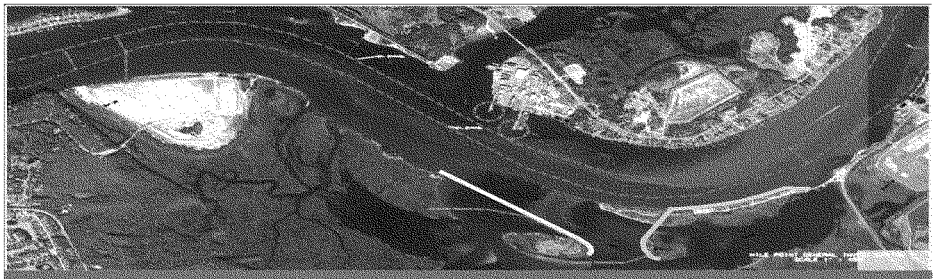
Minimum	0.0 Months	(=J9)
Maximum	1.0 Months	(=L9)



End of Assumptions

Risk Analysis (Schedule)-Milepoint - Final - Updated 3-26-11.xlsx





Final Report

JACKSONVILLE HARBOR
MILE POINT NAVIGATION STUDY,
ECONOMICS EVALUATION AND ECONOMIC APPENDIX

Submitted to

U.S. Army Corps of Engineers
Jacksonville District
Jacksonville, Florida

Submitted by

Baton Rouge, Louisiana

October 6, 2011
(Revised from June 8, 2011)

Final Report

JACKSONVILLE HARBOR MILE POINT NAVIGATION STUDY, ECONOMICS EVALUATION AND ECONOMIC APPENDIX

Contract No. W912P8-07-D-0008
GEC Project 22316CS01

Prepared by

Gulf Engineers & Consultants
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U.S. ARMY CORPS OF ENGINEERS
JACKSONVILLE DISTRICT
JACKSONVILLE, FLORIDA

Oct. 6, 2011

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Jacksonville Harbor Mile Point is located near the confluence of the Atlantic Intracoastal Waterway (AICW) and the St. Johns River. The confluence of north-south and east-west waterways is characterized by strong cross currents that make safe navigation of larger vessels a concern. The St. Johns Bar Pilot Association (Pilots) navigation rules restrict the passage of inbound vessels with sailing drafts exceeding 33 feet (with certain exceptions) and outbound vessels exceeding 36 feet to flood tide time frames. In addition, two-way navigation is restricted in this section of the channel.

The Jacksonville District provided a tide delay spreadsheet to compile the vessel delay hours attributable to Mile Point restrictions. The vessel delay hours are computed in the same manner as tide restricted vessels. Tide restricted vessels at Jacksonville Harbor would normally be for sailing drafts exceeding 38 feet for the existing minus 40 foot authorized project depth, assuming a two foot underkeel clearance. However, flood tide delayed vessels for Mile Point would exist for sailing drafts more than 33 feet inbound and more than 36 feet outbound.

A vessel call list of self-propelled vessels with sailing drafts 33 feet or more was compiled from vessel transits supplied by the Pilots for the period 2005 to 2009. The vessel call list was developed for bulk, tanker, container, and general cargo vessels, which constitute the majority of all vessels with sailing drafts 33 feet or more inbound calling Jacksonville Harbor. Vessel size specified in deadweight tonnes (DWT) and sailing draft distributions in one foot increments from 33 feet were compiled for each vessel category. The vessel call list was populated with the size and draft distributions. Vessel size (dwt) is used to specify hourly delay costs based on Corps FY 2008 guidance.

The vessel fleets were projected based on expected growth in commodities and trades. Jacksonville Harbor is expecting significant growth in the number and sizes of container vessels expected to call as a result of the completion of the TraPac container terminal and the subsequent development of the planned Hanjin container terminal. TraPac is currently served by major east-west global container services using Panamax and Post-Panamax container ships that are also calling other East Coast U.S. ports, including Savannah Harbor. After expansion of the Panama Canal, Far East services are expected to always be Mile Point sailing draft restricted for inbound and outbound movements. The shifts in the container fleet at Jacksonville Harbor have a major impact on delays associated with Mile Point. Container vessels are also the most expensive to operate on a time basis compared to bulk, tanker, and general cargo vessels.

The Jacksonville District provided one alternative to address the Mile Point flood tide vessel restrictions consisting of reconfiguration of the existing training wall. The reconfiguration alternative would remove all flood tide sailing restrictions for all categories of vessels.

The reconfiguration alternative present value of benefits using the FY 2011 water resources discount rate (4.125%) and Average Annual Equivalent (AAEQ) benefits are $91.153 and $4.334 million, respectively, for the full development of Dames Point container terminals to include Hanjin (Case 1). Excluding Hanjin, the present value and AAEQ benefits are $51.252 million and $2.437 million, respectively (Case 5). Truncation of growth at 2015 and 2020 would result in present values of $75.468 and $80.166 million, respectively, and AAEQ benefits of $3.589 and $3.812 million, respectively (cases 3 and 4). Case 5 was used for plan formulation.

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JACKSONVILLE HARBOR MILE POINT NAVIGATION FEASIBILITY STUDY

1.0 INTRODUCTION

1.1 DESCRIPTION

Mile Point in Jacksonville Harbor is located west of the intersection of the St. Johns River and the Atlantic Intracoastal Waterway (AIWW). A training wall, known locally as "Little Jetties," marks the confluence of the St. Johns River and the AIWW. Because of curvature of the river and strong prevailing crosscurrents from the AIWW, the St. Johns Bar Pilot Association (Pilots) restricts some vessels to ebb tide movements inbound and outbound to and from the upstream river terminals.

The Pilots' St. Johns River Navigational Guidelines (2010) stipulate ebb tide restrictions for inbound and outbound vessel movements that are attributable to the without-project Mile Point conditions as follows:[1]

Inbound Vessels

General: Vessels with draft over 33 feet (fresh water) but no more than 36 feet (fresh water) shall start in no sooner than 15 minutes before start of flood current on the bar. Vessels with greater than 36 feet of draft (fresh water) shall start in no sooner than 30 minutes after start of flood current on the bar. Stop taking in vessels with draft over 33 feet (fresh water) one hour before start of ebb current.[2]

Specific: **Vessels that have called at the port and have proven to have exceptional handling characteristics**, transiting to TraPac or Blount Island Terminals, with a fresh water draft of 34 feet or less, may start in at anytime and any stage of the tide (emphasis supplied). The same vessels with a fresh water draft of 35 feet or less shall start in no sooner than 30 minutes before flood on the bar. Stop taking in these vessels with a draft of 35 feet or less 30 minutes before start of ebb on the bar. Modifications or factors affecting any of these vessels' characteristics shall cause the vessel to notify the Pilot Office at least 24 hours prior to arrival for reconsideration of start-in time.[3]

Outbound Vessels

Down River of Buoy "59": Vessels sailing from berths down river of buoy "59" that are over 36 feet of draft (at their berth) shall sail no sooner that the start of flood current on the bar. Cut off time for these vessels is the beginning of ebb current on the bar. Therefore, vessels with a draft of **36 feet or less** sailing from anywhere downriver of buoy "59" may sail at any time of the tide/current (emphasis supplied).[4]

---

[1] St. Johns Bar Pilot Association, pages 8 and 9 (2010).
[2] St. Johns Bar Pilot Association, pages 8 and 9 (2008) and pages 8 and 9 (2010).
[3] This paragraph was added to the 2010 navigation guidelines, effectively relaxing the inbound Mile Point tidal restriction on vessels transiting to Blount Island and TraPac terminals by raising the threshold sailing draft tidal restriction from 33 feet to 34 feet for certain vessels, notably those applicable to the NWA that would call at TraPac Dames Point terminal.
[4] Down river of buoy "59" would include both Dames Point and Blount Island terminals. Other outbound sailing draft restrictions are assumed to be raised to Blount Island standards (36 feet) effective with the completion of the 40-foot channel and related improvements as authorized beyond Dames Point to Talleyrand Terminal.

Effectively, vessels entering the St. Johns River are restricted whenever their sailing drafts exceed 33 or 34 feet as noted (fresh water), and vessels departing the St. Johns River are restricted whenever their sailing drafts exceed 36 feet (fresh water). The Mile Point ebb tide restrictions effectively function as a tidal delay for vessels with sailing drafts within the authorized channel depth less normal underkeel clearance.[5]

1.2 ALTERNATIVES

The Mile Point ebb tide restriction can be removed by relocating the existing training wall (reconfiguration). The reconfiguration alternative would remove the ebb tide restriction for all vessels with sufficient underkeel clearance for the authorized channel depth without consideration of tidal cycles.

1.2.1 Objectives

The Jacksonville Harbor Mile Point Feasibility Study Draft Report was reviewed by higher authority and resulted in comments that require additional investigation and analyses. Based on Headquarters' review and comments on the Mile Point draft economic feasibility appendix (report date: February 12, 2009), there is concern on the increase in Mile Point constrained vessels transiting from the existing fleet to the base fleet envisioned for the Port as a result of new private marine container terminals (MOL and Hanjin), and the future fleet (at the authorized 40 ft depth). Consequently, Headquarters has requested that the growth of container vessels be demonstrated within the framework of the nine steps described in EC 1105-2-100, Appendix E.

The nine step process is to be explicitly followed in the report to a much greater level of supported detail, particularly with regard to specification of the economic study area. This typically requires a separate multiport analysis when it is determined that the justification of a project is contingent upon containerized cargo calling a specific port that shares overlapping hinterlands with nearby ports. Specifically, analyses need to demonstrate that the hinterland served is within a competitive advantage to the Port of study and is within the National Economic Development interest based on least cost of delivery of the cargo.

It is noted that the focus of the Mile Point Study training wall reconfiguration study is to alleviate or remove ebb tide restrictions that typically impact inbound vessels of 33 ft or greater and outbound vessel of 36 ft or greater. The focus of this scope is to establish a baseline without-project condition that includes the newly built terminal of TraPac/MOL and the soon to be built container terminal for Hanjin/Hanjin Alliance.

The Mile Point Feasibility report/economic analysis requires additional documentation in the determination of the economic study area (step 1) as supported by the least cost trucking of containerized cargo (Phase I) and total least cost delivery for containerized cargo (Phase II) with

[5] The authorized project depth for the channel at Mile Point is minus 40 feet. With a two-foot underkeel clearance allowance, vessels should be able to enter and exit the St. Johns River up to 38 foot drafts without any tidal delay. Effectively, Mile Point inbound restriction of 33 feet adds five feet of tidal delay (38-33 = 5) for inbound vessels and two feet of tidal delay for outbound vessels (38 – 36 = 2).

the inclusion of the recently built MOL terminal and as an added increment the Hanjin terminal to be constructed and operational by the end of 2013.

This report reflects the directive that the Mile Point economic appendix report dated February 12, 2009, should be revised to include the explicit documentation of the nine step planning process and satisfy documentation of Phase I analysis and benefits and Phase II analysis and benefits as applicable for the training wall reconfiguration alternative.[6]

1.2.2 Outline

This report will follow the nine study steps with respect to: (1) Determine Economic Study Area; (2) Identify Commodity Types, Volumes and Flows; (3) Project Waterborne Commerce; (4) Determine Vessel Fleet Composition and Cost; (5) Determine Current Commodity Movement Cost; (6) Determine Alternative Movement Cost; (7) Determine Future Commodity Movement Cost; (8) Determine Harbor Use With- and Without-Project; and (9) Compute NED Benefits.

Materials presented will be largely derived from the previous Mile Point Report (February 12, 2009) as updated, expanded, and/or amended by subsequent more detailed examination of the Port container hinterland as per Phase 1 and Phase 2 of the Jacksonville Harbor Container Hinterland Analyses conducted under the scope of work.[7]

2.0 DETERMINE ECONOMIC STUDY AREA

2.1 TRADITIONAL REGIONAL TRADE HINTERLAND

Jacksonville Harbor has long served as a regional port for Puerto Rico, other Caribbean trades, and South America for containers and general cargo and for a local distribution of imported bulk cargo. Table 1 displays the tonnage statistics for Jacksonville Port Authority (Jax Port) for the time period FY93/94 through FY08/09. Container tonnage has been dominated by Puerto Rico. Jacksonville is the principal domestic port for this trade, dominating with several services characterized by both self-propelled vessels and barges.[8] Container trades to other world areas other than Puerto Rico, the Caribbean, and South America have been relatively undeveloped until recently (Asia). The Port also handles refined petroleum imports for the local region (north Florida and south Georgia) as well as dry bulk (coal, cement, and aggregates). Finally, the Port is a regional distribution point for automobile imports into the southeast U.S.[9]

Table 2 shows the total TEUs of the top commodities for container imports and exports through Jacksonville and Savannah/Charleston for major world regions for the period October 2007

[6] Jacksonville Harbor Container Hinterland: Phase 1 Draft Report (July 7, 2010) and Jacksonville Harbor Container Hinterland Phase 2 Draft Report (September 8, 2010).
[7] Jacksonville Harbor Container Hinterland Documentation, Multiport Analysis and Vessel Call Update for Additional One Year.
[8] Jacksonville is the domestic hub niche port for Puerto Rican marine services similar to what the Port of Palm Beach was for the Cuban trade before the embargo extinguished this trade.
[9] Comparatively little attention will be given to the automobile trade. Although a major cargo volume, revenue provider, and user of port space, the pure car vessels are not Mile Point affected with respect to sailing draft.

Table 1. Jacksonville Port Authority, 10-Year Historical Data

Tonnage - Trading Partners / Top Markets																
Containers	**FY 93/94**	**FY 94/95**	**FY 95/96**	**FY 96/97**	**FY 97/98**	**FY 98/99**	**FY 99/00**	**FY 00/01**	**FY 01/02**	**FY 02/03**	**FY 03/04**	**FY 04/05**	**FY 05/06**	**FY 06/07**	**FY 07/08**	**FY 08/09**
Puerto Rico	1,545,862	1,596,670	2,085,360	2,308,367	2,545,941	2,847,663	2,733,797	2,746,647	2,673,056	2,527,085	2,587,943	2,658,448	2,477,327	2,363,772	2,346,463	2,298,012
South America	956,597	1,227,315	997,844	953,845	1,171,539	746,726	529,066	499,681	692,130	761,780	831,688	849,387	887,826	913,960	927,351	945,622
Europe	258,435	317,063	290,640	307,183	315,674	269,007	198,320	0	0	0	0	0	0	0	0	17,831
Australia/NZ	138,917	134,004	112,211	31,764	0	0	0	0	0	0	0	0	0	0	330	0
Asia						0	0	0	0	0	0	0	0	0	0	379,604
Mexico	0	33,018	115,229	119,352	84,709	121,393	124,581	81,129	64,848	54,060	47,442	25,985	10,960	0	0	0
Caribbean	48,485	52,354	47,649	32,487	107,509	139,707	197,541	203,000	182,372	167,776	196,356	351,693	393,094	166,723	152,685	169,831
Other	22,164	3,567	506	1,248	453	39,333	13,620	14,150	105,097	240,550	264,008	281,868	306,700	194,260	173,887	83,695
Container	**2,970,460**	**3,363,991**	**3,649,439**	**3,754,246**	**4,225,825**	**4,163,829**	**3,796,925**	**3,544,607**	**3,717,503**	**3,751,251**	**3,927,437**	**4,167,382**	**4,075,907**	**3,638,715**	**3,600,716**	**3,894,595**
Break Bulk																
Poultry	0	0	42,341	127,968	185,149	74,118	70,280	133,310	202,447	196,203	140,985	170,946	218,351	142,525	134,034	79,086
Steel	121,412	97,038	110,428	115,858	154,016	189,103	213,888	177,542	201,772	149,830	281,077	224,153	357,337	138,691	47,284	86,706
Paper	10,576	1,037	0	31,255	206,503	220,513	218,823	241,621	194,426	318,504	349,739	336,949	584,600	789,503	668,791	530,089
Aluminum	0	0	0	0	0	0	45,861	12,286	17,117	0	6,857	29,779	8,585	18,392	3,791	0
Lumber	59,943	52,199	43,546	10,683	6,455	11,610	18,874	48,198	47,729	24,553	13,500	1,999	6,150	8,718	1,108	5,310
HHG, Other	79,093	33,121	22,252	18,787	19,483	26,957	42,175	59,208	35,077	14,713	38,558	43,128	37,893	63,946	97,545	73,574
Breakbulk	**271,024**	**183,395**	**218,567**	**304,551**	**571,606**	**522,301**	**609,901**	**672,165**	**698,568**	**703,803**	**830,716**	**806,951**	**1,212,916**	**1,161,775**	**952,553**	**774,765**
Bulk																
Petroleum	766,739	590,322	386,724	319,318	287,524	289,161	17,364	0	0	0	0	0	0	0	0	0
Liquid	308,237	350,657	323,672	373,514	400,587	425,609	435,880	406,632	310,745	331,025	334,187	335,999	305,562	293,569	341,802	350,191
Dry	232,984	451,589	415,041	621,616	1,042,674	1,224,888	1,352,601	1,262,138	1,355,413	1,368,559	1,528,517	2,052,706	1,897,687	1,959,331	2,134,066	1,346,889
Bulk	**1,307,960**	**1,392,568**	**1,125,437**	**1,314,448**	**1,730,785**	**1,939,658**	**1,805,845**	**1,668,770**	**1,666,158**	**1,699,584**	**1,862,704**	**2,388,706**	**2,203,249**	**2,252,900**	**2,475,868**	**1,697,080**
Autos																
Autos	**648,470**	**751,486**	**713,411**	**720,863**	**849,214**	**898,483**	**901,412**	**971,357**	**1,036,892**	**1,146,378**	**1,067,411**	**1,085,616**	**1,204,471**	**1,255,811**	**1,366,373**	**915,523**
Total	**5,197,914**	**5,691,440**	**5,706,854**	**6,094,108**	**7,377,430**	**7,524,271**	**7,114,083**	**6,856,899**	**7,119,121**	**7,301,016**	**7,688,268**	**8,448,654**	**8,696,543**	**8,309,201**	**8,395,510**	**7,281,963**

Source: Jacksonville Port Authority.

Table 2. Jacksonville Port Authority Total TEUs of Top Commodities for Container Imports/Exports Through Jacksonville and Savannah/Charleston: October 2007-September 2008

Trade Route	Import/ Export	Jacksonville	Savannah/ Charleston	Total	Jacksonville Share	Savannah/ Charleston Share
Caribbean	Imports	82,841	1,365	84,206	98.4%	1.6%
Caribbean	Exports	388,770	3,821	392,591	99.0%	1.0%
Caribbean	Subtotal	471,611	5,186	476,797	98.9%	1.1%
ECSA	Imports	7,138	17,642	24,780	28.8%	71.2%
ECSA	Exports	49,302	17,916	67,218	73.3%	26.7%
ECSA	Subtotal	56,440	35,558	91,998	61.3%	38.7%
WCSA	Imports	3,327	3,362	6,689	49.7%	50.3%
WCSA	Exports	2,727	8,178	10,905	25.0%	75.0%
WCSA	Subtotal	6,054	11,540	17,594	34.4%	65.6%
Europe	Imports	1,451	36,373	37,824	3.8%	96.2%
Europe	Exports	432	60,690	61,122	0.7%	99.3%
Europe	Subtotal	1,883	97,063	98,946	1.9%	98.1%
Mediterranean	Imports	789	10,265	11,054	7.1%	92.9%
Mediterranean	Exports	666	18,961	19,627	3.4%	96.6%
Mediterranean	Subtotal	1,455	29,226	30,681	4.7%	95.3%
Central America	Imports	673	537	1,210	55.6%	44.4%
Central America	Exports	693	6,646	7,339	9.4%	90.6%
Central America	Subtotal	1,366	7,183	8,549	16.0%	84.0%
Africa	Imports	124	2,148	2,272	5.5%	94.5%
Africa	Exports	986	3,140	4,126	23.9%	76.1%
Africa	Subtotal	1,110	5,288	6,398	17.3%	82.7%
Asia	Imports	0	184,342	184,342	0.0%	100.0%
Asia	Exports	0	125,381	125,381	0.0%	100.0%
Asia	Subtotal	0	309,723	309,723	0.0%	100.0%
Subtotal	Imports	96,343	256,034	352,377	27.3%	72.7%
Subtotal	Exports	443,576	244,733	688,309	64.4%	35.6%
Subtotal	Subtotal	539,919	500,767	1,040,686	51.9%	48.1%

Notes: Caribbean includes Puerto Rico.
ECSA = East Coast South America.
WCSA = West Coast South America.

Source: Jacksonville Port Authority.

through September 2008.[10] Jacksonville clearly dominates the Caribbean (Puerto Rico) trade, with about a 95 percent share (top commodities) compared to Savannah and Charleston. Otherwise, Jacksonville has a much smaller market share in other major regional markets that it also serves such as East Coast South America (ECSA) about 34 percent (imports and exports)

[10] The "top commodities" should not be confused with all commodities. Thus, Table 2 is a subset of a larger more inclusive volume of all commodities. However, Table 2 is a representation that the total volumes (TEUs) of "top commodities" are effectively clustered in limited regional trading lanes for Jacksonville compared to Savannah/Charleston ports.

and West Coast South America (WCSA) about 14 percent (imports and exports). Outside of the regional markets, Jacksonville has a very small share of the global markets. Recently, Jacksonville has entered the Asia market and (re-entered) the European market with direct services, both arising from relatively new container services that initiated services to the Port at the TraPac Dames Point terminal in 2009.[11]

2.2 EMERGING GLOBAL TRADE HINTERLAND

As noted in Table 1, the Port has very recently (FY08/09) handled containers for world areas outside of the Americas hemisphere region that it has not handled (Asia) or served during the current decade (Europe). This is part of an emerging global container hinterland distinct from the traditional regional trade hinterland. The global hinterland is characterized by larger container vessels, Panamax (constrained by the existing Panama Canal dimensions) and Post-Panamax container vessels not otherwise constrained by the existing Panama Canal dimensions. Unlike the traditional regional container services that have predominantly not been affected by Mile Point sailing draft tidal constraints, the global services with the larger Panamax and Post-Panamax vessels are adversely affected by the Mile Point tidal constraints. The global hinterland is also characterized by new private investment in state-of-the-art semi-automated marine container terminals constructed at Dames Point (TraPac) or planned for development at Dames Point (Hanjin). These terminals are or would be served by the global alliances of New World Alliance (NWA) at TraPac and CKYH alliance at the planned Hanjin facility, respectively. Both of these alliances also have a major presence (services) at Savannah Harbor. Both alliances have indicated that as an outgrowth of Dames Point marine container terminals, they would call Jacksonville with the same or similar services as calling Savannah and shift containers to Jacksonville in addition to soliciting Florida business that is now moved to Savannah on account of the general absence of global east-west container services.

The emerging global container hinterland for domestic origins and destinations was defined from the perspective of a local hinterland in terms of least highway distances as commonly related to least total trucking transportation cost and an expanded regional hinterland that overlapped with other major global services at East Coast U.S. (ECUS) ports. The primary focus is on the shift of containers from Savannah to Jacksonville because of the container services that call Savannah are projected to call at new private marine container terminals either completed and operating (TraPac) or planned (Hanjin) at Dames Point, respectively. Florida has been an important market for Savannah Harbor extending down to the Interstate Highway 4 corridor in competition with the regional ports in south Florida (Miami and Port Everglades) for global container services such as Asia and Europe that traditionally have not called Jacksonville. New global services calling Jacksonville can save shippers substantial land trucking transportation costs because of the shorter distances to and from Jacksonville compared to Savannah, which provides a strong incentive to route their cargo through Jacksonville (other things being equal) such as comparable or overlapping marine services with other ECUS ports.[12] Consequently, the

[11] Historically, Jacksonville had a small European market share, but liner rationalization of services shifted this service (former Sea-Land) into a Savannah based Maersk Sea-Land conglomeration.

[12] Nearly all major container lines calling Savannah maintain off-port depots in Jacksonville through third parties, typically local trucking companies who perform container drayage for the purpose of tendering Florida containers to

domestic hinterland analyses will be examined from the perspectives of local trucking transportation cost savings and regional overlaps among competing ECUS ports with similar albeit longer trucking distances that provide more opportunity for competitive overlap of ports, services, lines, and shipper preferences beyond the context of "least total trucking cost" for shorter local distances.[13]

2.2.1 Least Total Trucking Cost Domestic Container Hinterland

The least total (trucking) cost container hinterland for the Savannah Harbor traffic projected to shift to Dames Point is commonly regarded to be all of Florida. The Florida hinterland should include small portions in south Georgia and south Alabama for which Jacksonville Harbor has a highway distance and truck cost advantage compared to Savannah Harbor at Garden City. Figure 1 shows the Florida least total cost trucking hinterland as augmented by zip codes in south Georgia and south Alabama. The south Georgia hinterland is particularly important because it encompasses some heavy loading pulp and paper mill containerized traffic related to production facilities near Brunswick, Georgia.

Table 3 shows the revised multi-state (Florida, south Georgia, and south Alabama) least total cost trucking hinterland. The hinterland consists of the three-digit zip codes whenever Jacksonville Harbor (Dames Point) has a highway map distance advantage compared to Savannah Harbor (Garden City).[14] The highway distance advantages for Jacksonville compared to Savannah for zip codes in south Georgia and south Alabama range from relatively small, 1.9 miles (zip code 315), to 132 miles (zip code 366). The south Georgia and south Alabama zip codes are generally west and contiguous to Savannah and Jacksonville, so the relative differences in highway distances are not as great.

Florida has substantial and sustained highway distance differences between Jacksonville and Savannah since the latter is always north of Jacksonville. Most of the Florida distance advantages for Jacksonville compared to Savannah are quite substantial, in the range of 132 to 145 miles for one-way movements.[15] Total Florida highway map one-way distances for all zip codes is 4,269 miles compared to 7,238 miles for Savannah (refer to Table 1, Florida subtotal).[16] The Florida highway map distance savings for all zip codes are 2,969 miles (7,238 miles - 4,269 miles = 2,969 miles). The inclusion of south Georgia and south Alabama zip codes does not materially change the picture. Jacksonville has an absolute advantage of 46 total miles for the zip codes in south Georgia compared to Savannah and an absolute advantage of 267 total miles for four zip codes in south Alabama compared to Savannah (refer to Table 1).

---

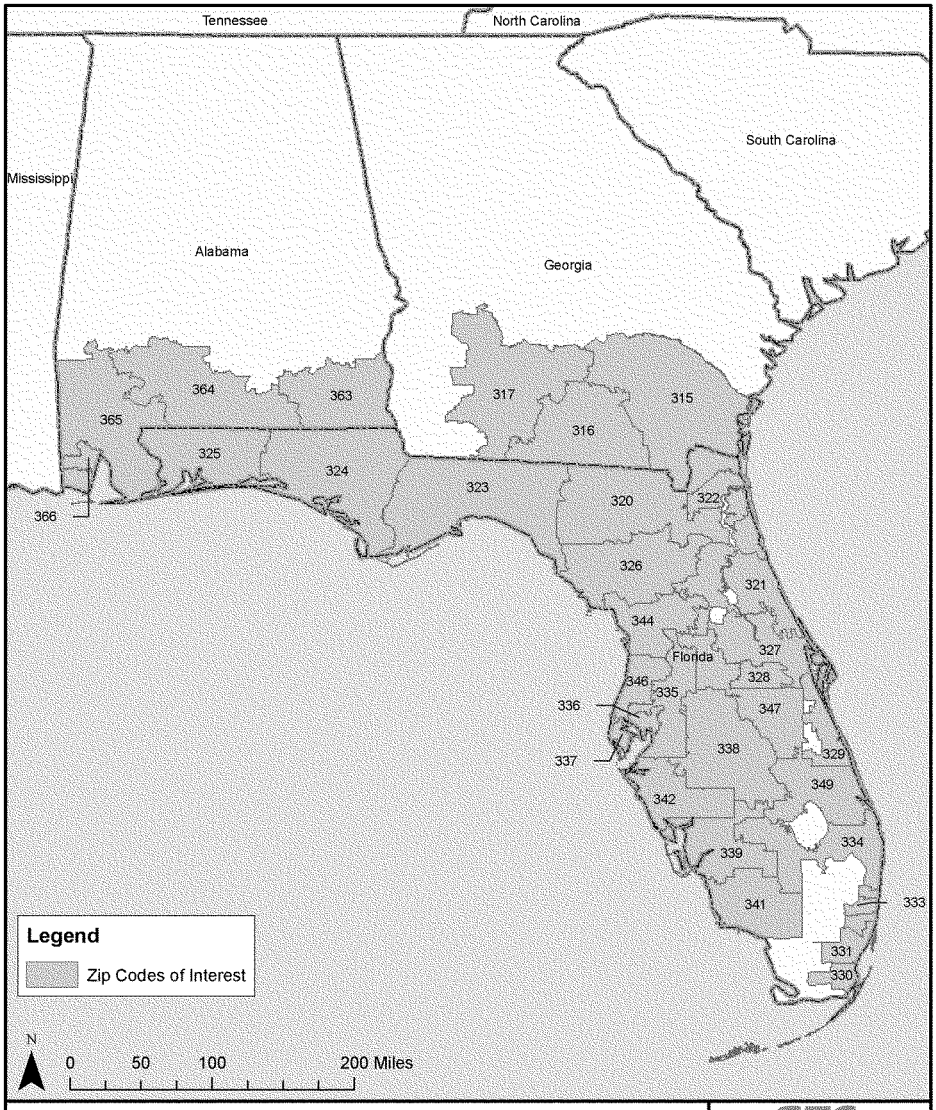
and from Savannah. This is evidence of the existence of a considerable volume of container freight trade in north and central Florida that is served by Savannah.

[13] Shorter highway and truck distances also are more cost sensitive to miles traveled due to the existence of fixed costs (time) associated with container pickup and delivery. Regional overlaps between ECUS ports with longer highway distances are less sensitive to changes in distance and truck related variable costs accordingly.

[14] All highway distances between zip codes are developed from PCMiler.

[15] All three-digit highway map distances are for one direction only. However, drayage costs will be for load/empty round trip movements, effectively doubling the highway distance advantages and disadvantages.

[16] Highway distances and related truck costs will be presented in the context of one way for clarification. However, container movements are round trip. Consequently, any one-way distance differentials would be doubled for round trip container movements.



Relevant Hinterland

States of Alabama, Florida, and Georgia

Figure: 1
Date: August 2010
Scale:1:5,500,000
Source: GEC/ESRI
Map ID:

Table 3. Jacksonville Harbor Container Hinterland Least Cost Trucking Based on Zip Code Distances with Savannah Harbor for NWA Boxes

State	ZIP	Box Dis	NWA Boxes	3 Digit Zip	JH Miles	SH Miles	JH-SH Miles	JH Box Miles	SH Box Miles	JH-SH Box Miles	% AD/DIS
GA	315	0.0%	34	315	91.9	93.8	-1.9	3,165	3,231	-65	-2.0%
GA	316	2.4%	1,847	316	135.9	162.7	-26.8	250,996	300,494	-49,497	-16.5%
GA	317	0.1%	43	317	193.2	210.4	-17.2	8,318	9,058	-740	-8.2%
Subtotal		**2.5%**	**1,924**	**948**	**421**	**467**	**-46**	**262,479**	**312,783**	**-50,303**	
Total			**77,242**								
AL	363	0.9%	33	363	278.9	318.2	-39.3	9,157	10,447	-1,290	-12.4%
AL	364	3.9%	141	364	374.2	413.3	-39.1	52,829	58,349	-5,520	-9.5%
AL	365	1.3%	46	365	419.3	475.6	-56.3	19,273	21,861	-2,588	-11.8%
AL	366	2.0%	74	366	410.3	542.4	-132.1	30,310	40,068	-9,759	-24.4%
Subtotal		**8.1%**	**294**	**1,458**	**1,483**	**1,750**	**-267**	**111,568**	**130,725**	**-19,157**	
Total			**3,617**								
FL	320	0.1%	5	320	33.7	165.7	-132	162	798	-636	-79.7%
FL	321	0.1%	5	321	83	228.4	-145.4	400	1,100	-700	-63.7%
FL	322	35.9%	2,938	322	0	143.1	-143.1	0	420,454	-420,454	-100.0%
FL	323	0.1%	10	323	178.4	310.5	-132.1	1,719	2,991	-1,273	-42.5%
FL	324	0.1%	6	324	271.4	403.4	-132	1,743	2,591	-848	-32.7%
FL	325	0.9%	77	325	341.3	473.3	-132	26,303	36,476	-10,173	-27.9%
FL	326	15.3%	1,249	326	86.2	218.2	-132	107,653	272,504	-164,851	-60.5%
FL	327	0.4%	32	327	119.5	265	-145.5	3,837	8,509	-4,672	-54.9%
FL	328	8.3%	676	328	140.7	286.1	-145.4	95,105	193,387	-98,282	-50.8%
FL	330	0.1%	8	330	371.4	516.8	-145.4	2,982	4,149	-1,167	-28.1%
FL	331	5.0%	409	331	347.9	493.4	-145.5	142,381	201,928	-59,547	-29.5%
FL	333	0.2%	14	333	323.3	468.7	-145.4	4,672	6,773	-2,101	-31.0%
FL	334	0.2%	13	334	277.3	422.8	-145.5	3,562	5,431	-1,869	-34.4%
FL	335	1.4%	117	335	220.1	365.5	-145.4	25,797	42,839	-17,042	-39.8%
FL	336	10.1%	830	336	218.4	363.8	-145.4	181,257	301,929	-120,672	-40.0%
FL	337	2.0%	165	337	239.5	385	-145.5	39,607	63,669	-24,062	-37.8%
FL	338	2.7%	220	338	191.2	336.7	-145.5	42,057	74,061	-32,005	-43.2%
FL	339	0.1%	6	339	283.7	429.1	-145.4	1,822	2,756	-934	-33.9%
FL	342	0.1%	8	342	264.1	409.5	-145.4	2,120	3,287	-1,167	-35.5%
FL	344	8.1%	660	344	124.7	253.9	-129.2	82,288	167,545	-85,257	-50.9%
FL	347	9.0%	734	347	153.2	298.7	-145.5	112,409	219,169	-106,760	-48.7%
Subtotal		**100.0%**	**8,183**	**6,962**	**4,269**	**7,238**	**-2,969**	**877,875**	**2,032,347**	**-1,154,471**	**-56.8%**
Total		**110.6%**	**10,401**	**9,368**	**6,173**	**9,454**	**-3,281**	**1,251,923**	**2,475,854**	**-1,223,931**	

Notes: ZIP = Three-digit zip code.
Box Dis = Percentage distribution of import and export boxes by zip code through Savannah Harbor by NWA for Georgia, Florida, and Alabama.
NWA boxes = New World Alliance boxes handled through Savannah Harbor in 2009 for the three-state region.
JH Miles = Highway mileage distances between Jacksonville Harbor (Dames Point) and zip codes.
SH Miles = Highway mileage distances between Savannah Harbor (Garden City Terminal) and zip codes.
JH-SH Miles = Difference between JH Miles and SH Miles between the same zip code.
JH Box Miles = NWA Boxes * JH Miles.
SH Box Miles = NWA Boxes * SH Miles.
JH - SH Box Miles = JH Box Miles - SH Box Miles.
% AD/DIS = Percentage of total three-digit zip miles advantage (saved) or disadvantage by JH Box Miles compared to SH Box Miles.

Source: G.E.C., Inc.

Total highway distance map miles for Jacksonville changes from 4,269 to 6,173 with the inclusion of the shorter distances for south Georgia and south Alabama. For Savannah, it changes from 7,238 (Florida only) to 9,454 (Florida and south Georgia and south Alabama). The overall map distance advantage for Jacksonville increases from 2,969 miles (Florida only) to 3,281 miles with the inclusion of the three zip codes in south Georgia and four zip codes in south Alabama.

Table 3 has been populated for the zip codes for the NWA 2009 boxes reported to have been handled through Savannah Harbor in 2009 as imports or exports for the states of Florida,

Georgia, and Alabama. The boxes when multiplied by the distances equal the one-way highway miles for the zip codes in which Jacksonville has a comparative map distance advantage compared to Savannah. For Florida boxes, Jacksonville total one-way map highway miles are 877,875 compared to 2,032,347 for Savannah. The distance savings of one-way map miles is 1,154,471 for Jacksonville compared to Savannah (2,032,347 – 877,875 = 1,154,471). For all three states that have favorable map distances for zip codes (including south Georgia and south Alabama), the map distance one-way box miles are 1,251,923 for Jacksonville and 2,475,854 for Savannah. The distance savings one-way map miles is 1,223,931 for Jacksonville compared to Savannah (2,475,854 – 1,251,923 = 1,223,931).

Table 4 has been populated for the zip codes for the CKYH 2009 boxes reported to have been handled through Savannah Harbor in 2009 as imports or exports for the states of Florida, Georgia, and Alabama. The boxes when multiplied by the distances equal the one-way highway miles for the zip codes in which Jacksonville has a map distance advantage compared to Savannah. For Florida boxes, Jacksonville total map highway miles are 1,843,613 compared to 4,268,102 for Savannah. The distance savings of one-way map miles is 2,424,488 for Jacksonville compared to Savannah (4,268,102 – 1,843,613 = 2,424,488). For all three states that have favorable map distances for zip codes (including south Georgia and south Alabama), the map distance one-way box miles are 2,629,091 for Jacksonville and 5,199,442 for Savannah. The distance savings in one-way map miles is 2,570,351 for Jacksonville compared to Savannah (5,199,442 – 2,629,091 = 2,570,351).

2.2.2 Broader Competitive ECUS Domestic Container Hinterland

The broader regional competitive hinterland wherein ECUS container ports overlap as substitutes for each other in competition between lines, services, ports, and shipper preferences are regarded to be outside of the least total trucking cost hinterland embraced by Florida and limited portions of south Georgia and south Alabama. Table 5 contains the incremental highway distances between the major South East marine container ports located at Jacksonville, Savannah, and Charleston and also Norfolk for major interior point urban areas east of the Mississippi River.[17] The shortest highway one-way map distances are expressed relative to the ports. Jacksonville has the shortest highway distances to New Orleans and Mobile. Savannah is second to Jacksonville for these places with 137 and 100 more miles to New Orleans and Mobile, respectively, compared to Jacksonville highway distances.

Savannah has the least highway distances to Memphis, St. Louis, Jackson, Birmingham, Atlanta, and Nashville. Charleston is relatively close to Savannah for most of these locations, with incremental distances of 44 miles for St. Louis, 66 miles for Jackson, 67 miles for Birmingham, 66 miles for Atlanta, and 44 miles for Nashville. Charleston has the least highway distances to Charlotte, Knoxville, Louisville, Cincinnati, and Indianapolis. Savannah is relatively close to Charleston for these locations with incremental distances of 52 miles for Charlotte, 51 miles for Knoxville, 52 miles for Louisville, 51 miles for Cincinnati, and 52 miles for Indianapolis.

[17] Other South Atlantic ports that handle containers such as Wilmington have been omitted due to the low volume of throughput and limited local hinterland.

Table 4. Jacksonville Harbor Container Hinterland Least Cost Trucking Based on Zip Code Distances with Savannah Harbor for CKYH Boxes

State	ZIP	Box Dis	CKYH Boxes	3 Digit Zip	JH Miles	SH Miles	JH-SH Miles	JH Box Miles	SH Box Miles	JH-SH Box Miles	% AD/DIS
GA	315	0.0%	72	315	91.9	93.8	-1.9	6,647	6,784	-137	-2.0%
GA	316	2.4%	3,879	316	135.9	162.7	-26.8	527,092	631,036	-103,945	-16.5%
GA	317	0.1%	90	317	193.2	210.4	-17.2	17,467	19,022	-1,555	-8.2%
Subtotal		**2.5%**	**4,041**	**948**	**421**	**467**	**-46**	**551,206**	**656,842**	**-105,637**	
Total			**162,208**								
AL	363	0.9%	69	363	278.9	318.2	-39.3	19,228	21,937	-2,709	-12.4%
AL	364	3.9%	296	364	374.2	413.3	-39.1	110,930	122,521	-11,591	-9.5%
AL	365	1.3%	97	365	419.3	475.6	-56.3	40,470	45,904	-5,434	-11.8%
AL	366	2.0%	155	366	410.3	542.4	-132.1	63,645	84,136	-20,491	-24.4%
Subtotal		**8.1%**	**617**	**1,458**	**1,483**	**1,750**	**-267**	**234,272**	**274,498**	**-40,225**	
Total			**7,595**								
FL	320	0.1%	10	320	33.7	165.7	-132	341	1,676	-1,335	-79.7%
FL	321	0.1%	10	321	83	228.4	-145.4	840	2,310	-1,471	-63.7%
FL	322	35.9%	6,170	322	0	143.1	-143.1	0	882,989	-882,989	-100.0%
FL	323	0.1%	20	323	178.4	310.5	-132.1	3,609	6,282	-2,673	-42.5%
FL	324	0.1%	13	324	271.4	403.4	-132	3,660	5,441	-1,780	-32.7%
FL	325	0.9%	162	325	341.3	473.3	-132	55,239	76,602	-21,364	-27.9%
FL	326	15.3%	2,623	326	86.2	218.2	-132	226,080	572,282	-346,201	-60.5%
FL	327	0.4%	67	327	119.5	265	-145.5	8,059	17,871	-9,812	-54.9%
FL	328	8.3%	1,420	328	140.7	286.1	-145.4	199,729	406,130	-206,401	-50.8%
FL	330	0.1%	17	330	371.4	516.8	-145.4	6,261	8,713	-2,451	-28.1%
FL	331	5.0%	859	331	347.9	493.4	-145.5	299,012	424,066	-125,054	-29.5%
FL	333	0.2%	30	333	323.3	468.7	-145.4	9,811	14,223	-4,412	-31.0%
FL	334	0.2%	27	334	277.3	422.8	-145.5	7,480	11,405	-3,925	-34.4%
FL	335	1.4%	246	335	220.1	365.5	-145.4	54,176	89,965	-35,789	-39.8%
FL	336	10.1%	1,743	336	218.4	363.8	-145.4	380,656	634,078	-253,422	-40.0%
FL	337	2.0%	347	337	239.5	385	-145.5	83,178	133,710	-50,532	-37.8%
FL	338	2.7%	462	338	191.2	336.7	-145.5	88,323	155,535	-67,212	-43.2%
FL	339	0.1%	13	339	283.7	429.1	-145.4	3,826	5,787	-1,961	-33.9%
FL	342	0.1%	17	342	264.1	409.5	-145.4	4,452	6,904	-2,451	-35.5%
FL	344	8.1%	1,386	344	124.7	253.9	-129.2	172,812	351,859	-179,048	-50.9%
FL	347	9.0%	1,541	347	153.2	298.7	-145.5	236,069	460,274	-224,204	-48.7%
Subtotal		**100.0%**	**17,185**	**6,962**	**4,269**	**7,238**	**-2,969**	**1,843,613**	**4,268,102**	**-2,424,488**	**-56.8%**
Total		**110.6%**	**21,843**	**9,368**	**6,173**	**9,454**	**-3,281**	**2,629,091**	**5,199,442**	**-2,570,351**	

Notes: ZIP = Three-digit zip code.

Box Dis = Percentage distribution of import and export boxes by zip code through Savannah Harbor by CHYK for Georgia, Florida, and Alabama.

CKYH boxes = CKYH boxes handled through Savannah Harbor in 2009 for the three-state region.

JH Miles = Highway mileage distances between Jacksonville Harbor (Dames Point) and zip codes.

SH Miles = Highway mileage distances between Savannah Harbor (Garden City Terminal) and zip codes.

JH-SH Miles = Difference between JH Miles and SH Miles between the same zip code.

JH Box Miles = CKYH Boxes * JH Miles.

SH Box Miles = CKYH Boxes * SH Miles.

JH - SH Box Miles = JH Box Miles - SH Box Miles.

% AD/DIS = Percentage of total three-digit zip miles advantage (saved) or disadvantage by JH Box Miles compared to SH Box Miles.

Source: G.E.C., Inc.

Table 5. Expanded Hinterland Incremental Highway Distances Between ECUS Container Ports: Least Total Highway Distances

City/Port	Jacksonville	Savannah	Charleston	Norfolk
New Orleans	0	137	232	488
Mobile	0	100	234	490
Memphis	96	0	141	279
St. Louis	97	0	44	110
Jackson	98	0	66	318
Birmingham	99	0	67	319
Atlanta	96	0	66	317
Charlotte	184	52	0	127
Nashville	97	0	44	208
Knoxville	184	51	0	155
Louisville	161	52	0	47
Cincinnati	183	51	0	86
Columbus	263	131	79	0
Indianapolis	161	52	0	47
Chicago	215	68	16	0
Detroit	348	216	166	0
Cleveland	339	206	155	0

Notes: "0" values indicate least total incremental highway distances between ports and hinterland.
Values other than "0" indicate incrementally higher distances between ports and hinterland.

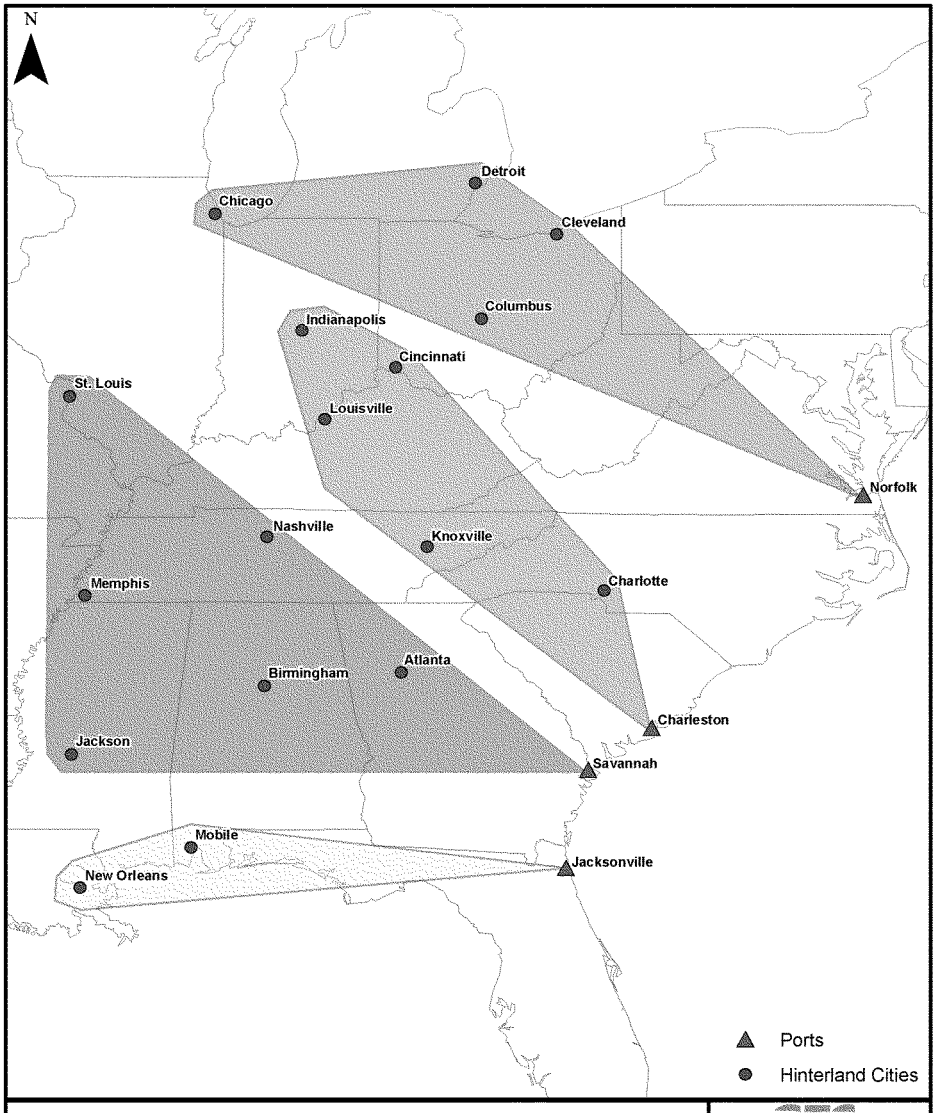
Source: G.E.C., Inc.

Norfolk is shown as the southern boundary for the North Atlantic port range. Norfolk has the least highway distances compared to the other South Atlantic ports for Columbus, Chicago, Detroit, and Cleveland. Both Charleston and Savannah are reasonably close to Chicago in terms of incremental highway distances compared to Norfolk. Savannah is 68 miles greater than Norfolk to Chicago and Charleston is 16 miles greater to Chicago than Norfolk.

Figure 2 shows the least total highway map distance hinterland for each port.

Table 6 contains the incremental highway distances between the ports and hinterland cities in Table 5 with regard to an extended hinterland for each port based on incremental highway distances less than 100 miles greater than other ports. The expanded hinterland for Jacksonville would include Memphis, St. Louis, Jackson, Birmingham, Atlanta, and Nashville. The expanded hinterland for Savannah would include Charlotte, Knoxville, Cincinnati, Indianapolis, and Chicago. The expanded hinterland for Charleston would include St. Louis, Jackson, Birmingham, Atlanta, Nashville, Columbus, and Chicago. The expanded hinterland for Norfolk would include Louisville, Cincinnati, and Indianapolis.

Figure 3 shows the expanded hinterland for each port based on incremental highway distances less than 100 miles. There would be some hinterland overlaps with the least total cost



Least Total Highway Map Distance for Port Hinterlands

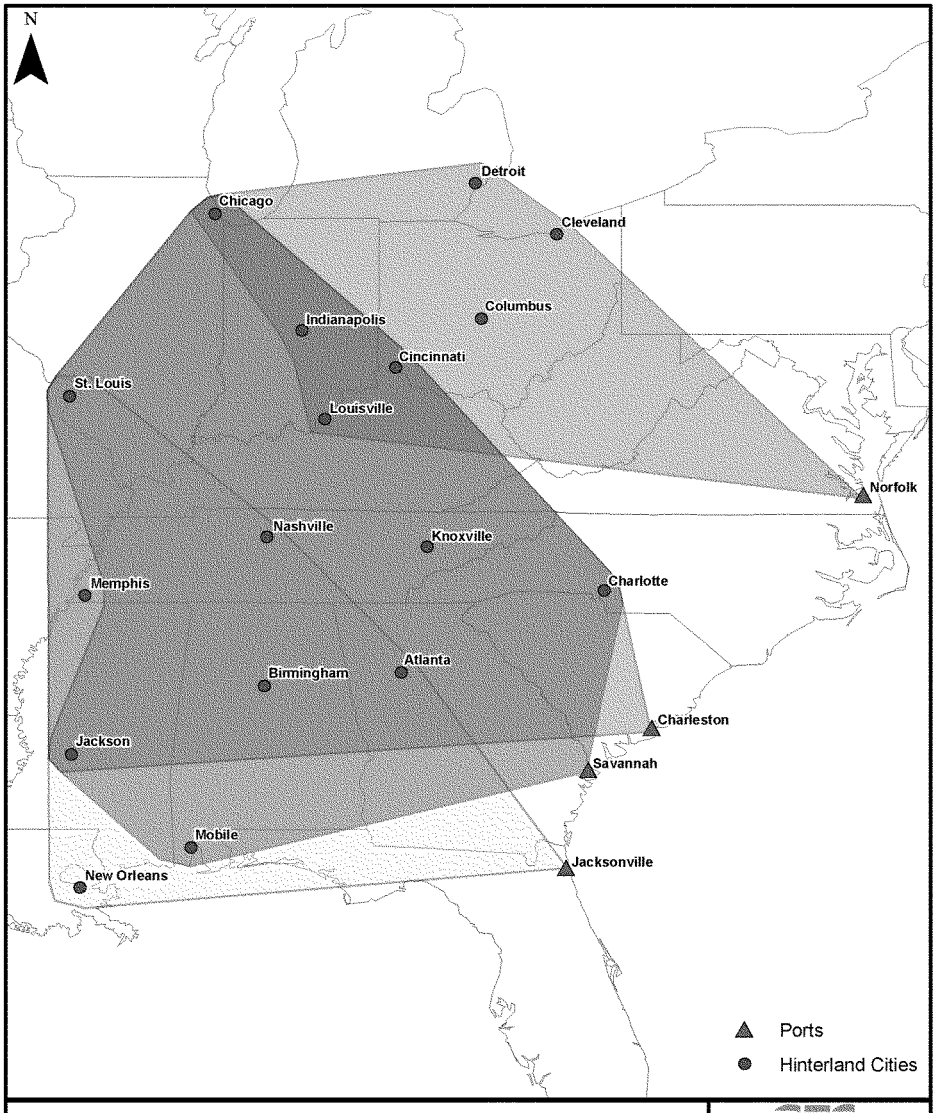
Figure: 2
Date: September 2010
Scale: 1 in = 150 miles
Source: GEC
Map ID: 223070713-2330

Table 6. Expanded Hinterland Incremental Highway Distances Between ECUS Container Ports: Competitive Overlapping Highway Distances

City/Port	Jacksonville	Savannah	Charleston	Norfolk
New Orleans	0	137	232	488
Mobile	0	100	234	490
Memphis	96	0	141	279
St. Louis	97	0	44	110
Jackson	98	0	66	318
Birmingham	99	0	67	319
Atlanta	96	0	66	317
Charlotte	184	52	0	127
Nashville	97	0	44	208
Knoxville	184	51	0	155
Louisville	161	52	0	47
Cincinnati	183	51	0	86
Columbus	263	131	79	0
Indianapolis	161	52	0	47
Chicago	215	68	16	0
Detroit	348	216	166	0
Cleveland	339	206	155	0

Notes: "0" values indicate least total incremental highway distances between ports and hinterland.
Values other than "0" indicate incrementally higher distances between ports and hinterland.
Values >0, <100 indicate competitive overlapping incremental highway distances between ports and hinterland.

Source: G.E.C., Inc.



Expanded Least Total Highway Map Distance for Port Hinterlands

Figure: 3
Date: September 2010
Scale: 1 in = 150 miles
Source: GEC
Map ID: 223070713-2331

port based on shortest highway map miles as follows (overlapping port(s) in parenthesis): New Orleans – Jacksonville; Mobile – Jacksonville (Savannah); Memphis – Savannah (Jacksonville); St. Louis – Savannah (Charleston and Jacksonville); Jackson – Savannah (Charleston and Jacksonville); Birmingham – Savannah (Charleston and Jacksonville); Atlanta – Savannah (Charleston and Jacksonville); Nashville – Savannah (Charleston and Jacksonville); Charlotte – Charleston (Savannah); Knoxville – Charleston (Savannah); Louisville – Charleston (Norfolk and Savannah); Cincinnati – Charleston (Savannah and Norfolk); Indianapolis – Charleston (Norfolk and Savannah); Chicago – Norfolk (Charleston and Savannah); Detroit – Norfolk; and Cleveland – Norfolk.[18]

Figure 3 suggests that most of the South Atlantic ports have overlapping container hinterlands stretching from the Midwest (Chicago) throughout the region. The largest geographic area of highway map mileage overlap based on 100 miles is between Charleston and Savannah. Norfolk to the north has more overlap with other North Atlantic ports (not shown) and interior points between these ports and Chicago. Jacksonville to the south has overlaps with Charleston for the Savannah southern gateways such as Memphis, St. Louis, Jackson, Birmingham, Atlanta, and Nashville.

2.2.3 Broader Competitive WCUS Domestic Container Hinterland

Little empirical data currently exists that would explicitly define an optimal least total cost paradigm shift in the all water Far East ECUS market relative to the existing WCUS market.[19] It appears that the forthcoming expansion of the Panama Canal to accommodate Post-Panamax container vessels would not likely lead to a loss of all water services between the FE ECUS. However, it is conjectural at this time whether and to what extent lines will shift FE WCUS cargo to an all water ECUS routing in response to an expanded Panama Canal with Post-Panamax container vessel capabilities (as opposed to allowing future increased FE WCUS cargoes to shift to the ECUS via an all-water routing). Several factors suggest that some shift will inevitably occur, including a plethora of container vessels (over capacity), less shipper sensitivity to shortest transit time compared to longer transit time as compared to less or similar variability of transit time regardless of length, and existence of ECUS port facilities such as TraPac at Dames Point with sunk capital and excess capacity compared to WCUS ports.[20] Other unknowns are the vessel tolling rate structure of the expanded Panama Canal with regard to sunk cost and debt associated with expansion and the goal of attracting more larger vessels through the expanded facilities to compete with U.S. intermodal rail services linking the west coast and Midwest, and the interplay between vessel operating costs (fuel) and steaming practices,

[18] New York and Baltimore would be suitable overlapping ports to the North Atlantic range covering Detroit, Cleveland, etc.

[19] The context of the FE US market is that about 75 percent of the total volume is FE WCUS and about 25 percent of the total volume is FE ECUS all water direct. While the ECUS all water service volumes are much smaller than the FE WCUS volumes, the ECUS volumes have grown appreciably notwithstanding existing Panama Canal constraints that limit the all water services to light loaded Panamax container vessels not exceeding 38 feet draft (fresh water). Consequently, when the Canal is enlarged it is envisioned that vessel costs for ECUS services will decline, which might lead to a shift of cargo (and vessels, particularly Post-Panamax vessels) to the ECUS.

[20] Arguably, MOL and its alliance partners, currently APL and Hyundai, will have an incentive to move containers through TraPac Dames Point given its development and excess capacity.

particularly slow steaming, which tends to mitigate fuel cost savings arguments for west coast ports compared to all water services to east coast ports.

It is likely to expect that lines with excess capacity for vessels and terminals such as TraPac will shift containers to the ECUS from the WCUS once Canal capacity and capability are enlarged (and priced to encourage shifts of Post-Panamax vessels from FE WCUS deployments to ECUS deployments). However, the timing and extent of such a shift is conjectural until the expanded Canal is in play with Post-Panamax services, tolling structures, etc.

2.2.4 Broader Competitive Regional Container Hinterland

Similar to the WCUS shift of containers to ECUS in conjunction with the expansion of the Panama Canal, it is envisioned that lines with marine container terminals such as TraPac will induce Caribbean transshipment cargo to shift to Jacksonville to fit into the existing well-developed niche that the Port has developed in this region centered on Puerto Rico. However, the timing and extent of such a shift of containerized transshipment cargo to Jacksonville remains conjectural at this time.[21]

3.0 IDENTIFY COMMODITY TYPES, VOLUMES AND FLOWS

3.1 WATERBORNE COMMERCE STATISTICS

Table 7 summarizes the total annual foreign trade commodity cargo tons for major categories for Jacksonville Harbor for the most recent 10-year period for which Waterborne Commerce Statistics are available, 1997-2008. The commodity tonnages encompass all facilities on the St. Johns River in the domain of Jacksonville Harbor that would be greater than Jacksonville Port Authority facilities and primarily oriented to bulk cargos.

Table 7. Jacksonville Harbor Waterborne Foreign Commerce Annual Commodity Tons (000), 1997-2008

	Total											
Commodity	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total All Commodities	8,890	10,246	9,191	9,520	8,943	9,677	10,831	11,429	12,509	13,975	13,606	13,665
Total Coal	1,332	1,645	1,361	1,467	1,773	1,293	1,959	2,257	1,535	1,907	3,153	4,426
Total Petroleum and Petroleum Products	2,785	3,313	3,365	2,645	1,652	2,982	3,174	2,789	3,601	4,650	4,036	3,023
Total Chemicals and Related Products	648	503	304	210	223	256	291	371	308	264	254	265
Total Crude Materials, Inedible, Except Fuels	1,596	1,965	1,913	2,897	2,861	2,935	3,054	3,213	3,698	3,891	3,277	3,043
Total Primary Manufactured Goods	941	1,039	912	958	926	573	785	1,024	1,116	1,296	929	739
Total Food and Farm Products	679	671	409	375	391	565	456	441	618	438	394	400
Total All Manufactured Equipment, Machinery and Products	900	1,099	914	907	1,035	948	902	1,044	1,395	1,454	1,492	1,698
Total Unknown or Not Elsewhere Classified	11	10	13	62	80	125	210	291	237	77	71	72

Source: Waterborne Commerce Statistics.

3.2 JACKSONVILLE PORT AUTHORITY STATISTICS

[21] Interviews with Puerto Rican vessel operators suggested that they were poised to take advantage of the close proximity of their existing terminals at Talleyrand and Blount Island to TraPac to facilitate the transfer of Caribbean (including Puerto Rico) containers for transshipment via Jacksonville.

Table 8 contains a time series of Jacksonville Port Authority (Jax Port) cargo statistics handled by its facilities between FR 93/94 and FY 08/09. The Jax Port has had a relatively stable traffic

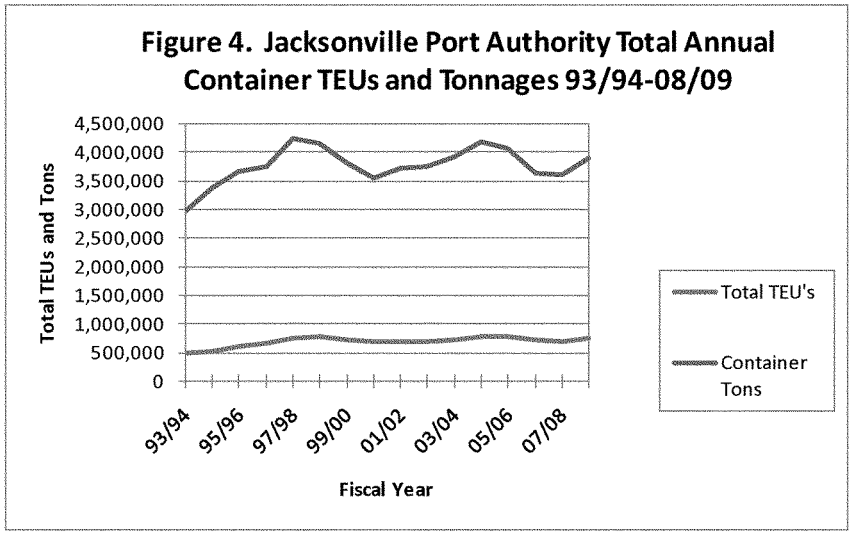
Table 8. Jacksonville Port Authority Tonnage - Trading Partners/Top Markets, 93/94-08/09

	FY 93/94	FY 94/95	FY 95/96	FY 96/97	FY 97/98	FY 98/99	FY 99/00	FY 00/01	FY 01/02	FY 02/03	FY 03/04	FY 04/05	FY 05/06	FY 06/07	FY 07/08	FY 08/09
								Vessels								
Auto	413	393	400	396	392	430	428	444	477	478	426	421	485	611	648	564
Container	740	759	780	767	1,002	991	888	875	865	828	850	840	824	765	786	833
Cruise	0	0	0	0	0	0	0	0	0	0	50	86	79	80	50	80
Liquid	71	83	78	86	102	113	107	100	92	73	83	92	90	89	102	73
Dry	6	16	13	20	30	35	39	28	32	35	31	51	42	44	51	33
Petroleum	74	63	42	36	23	26	2	0	0	0	0	0	0	0	0	0
Breakbulk	72	44	51	72	109	84	120	124	135	120	127	126	238	187	171	168
Idle	46	33	17	25	14	4	8	16	10	5	15	19	41	24	19	14
Vessel Total	**1,422**	**1,391**	**1,381**	**1,402**	**1,672**	**1,683**	**1,592**	**1,587**	**1,611**	**1,539**	**1,582**	**1,635**	**1,799**	**1,800**	**1,827**	**1,765**
Container Information																
Full Units	187,481	213,597	234,704	244,557	270,017	263,773	236,045	227,013	231,085	235,283	252,482	261,788	270,662	231,070	237,126	250,534
Empty Units	77,289	84,915	96,971	106,672	120,287	124,821	113,717	117,093	107,637	108,285	110,366	125,860	111,472	120,470	106,939	124,996
Land Transit	32	0	0	0	0	0	0	0	0	0	655	1,207	2,395	2,106	907	705
Total Units	**264,802**	**298,512**	**331,675**	**351,229**	**390,304**	**388,594**	**349,762**	**344,106**	**338,722**	**343,568**	**363,503**	**388,855**	**384,529**	**353,646**	**344,972**	**376,235**
TEU Information																
Import	215,527	222,689	257,972	303,838	320,477	324,598	330,707	332,849	364,758	317,720	337,402	367,920	345,708	325,819	317,279	394,129
Export	263,520	306,857	355,476	371,358	433,346	447,284	377,321	366,054	319,078	374,702	390,258	409,398	422,531	384,254	380,215	360,223
Total TEU's	**479,047**	**529,546**	**613,448**	**675,196**	**753,823**	**771,882**	**708,028**	**698,903**	**683,836**	**692,422**	**727,660**	**777,318**	**768,239**	**710,073**	**697,494**	**754,352**
Cruise Vessels							**0**	**0**	**0**	**0**	**51**	**87**	**77**	**78**	**46**	**78**
Cruise Passengers																
Embark							**0**	**0**	**0**	**0**	**85,382**	**136,834**	**128,602**	**129,978**	**75,937**	**185,434**
Embark + Debark							**0**	**0**	**0**	**0**	**170,927**	**275,375**	**257,065**	**259,816**	**152,411**	**370,621**
Auto Units																
Total Auto Units	**429,571**	**458,373**	**420,536**	**415,112**	**482,785**	**511,552**	**538,408**	**579,924**	**615,030**	**544,062**	**533,227**	**544,336**	**609,967**	**614,647**	**656,805**	**419,691**
								Tonnage								
Container																
Import	771,156	868,782	928,236	960,454	1,003,758	1,045,376	860,861	740,785	865,676	899,771	945,171	1,014,483	1,187,849	971,813	913,441	1,070,687
Export	2,199,304	2,495,209	2,721,203	2,793,792	3,222,067	3,118,453	2,936,063	2,803,822	2,851,827	2,851,480	2,982,266	3,152,898	2,888,058	2,666,902	2,687,275	2,823,908
Container	**2,970,460**	**3,363,991**	**3,649,439**	**3,754,246**	**4,225,825**	**4,163,829**	**3,796,924**	**3,544,607**	**3,717,503**	**3,751,251**	**3,927,437**	**4,167,382**	**4,075,907**	**3,638,715**	**3,600,716**	**3,894,595**
Break Bulk																
Import	173,273	156,291	149,898	147,391	364,128	428,836	512,837	528,451	534,025	513,482	654,253	611,918	957,127	974,849	768,698	655,180
Export	97,751	27,104	68,669	157,160	207,478	93,465	97,064	143,714	164,343	190,321	176,464	195,034	255,790	186,926	183,855	119,585
Breakbulk	**271,024**	**183,395**	**218,567**	**304,551**	**571,606**	**522,301**	**609,901**	**672,165**	**698,568**	**703,803**	**830,717**	**806,951**	**1,212,917**	**1,161,775**	**952,553**	**774,765**
Bulk																
Import	1,245,342	1,276,236	995,538	1,180,530	1,558,140	1,753,592	1,594,236	1,472,622	1,544,828	1,580,044	1,747,255	2,268,448	2,086,724	2,108,183	2,265,261	1,595,842
Export	62,618	116,332	129,899	133,918	172,645	186,066	211,609	196,148	121,330	119,540	115,448	120,258	116,525	144,717	210,607	101,238
Bulk	**1,307,960**	**1,392,568**	**1,125,437**	**1,314,448**	**1,730,785**	**1,939,658**	**1,805,845**	**1,668,770**	**1,666,158**	**1,699,584**	**1,862,703**	**2,388,706**	**2,203,249**	**2,252,900**	**2,475,868**	**1,697,080**
Auto																
Import	548,502	624,525	574,959	570,832	717,105	745,401	779,427	832,078	868,501	759,956	783,765	712,905	898,943	861,144	776,499	376,604
Export	99,968	126,961	138,452	150,031	132,109	153,082	121,986	139,279	168,391	386,422	283,646	372,710	305,527	394,667	589,874	538,919
Auto	**648,470**	**751,486**	**713,411**	**720,863**	**849,214**	**898,483**	**901,413**	**971,357**	**1,036,892**	**1,146,378**	**1,067,411**	**1,085,616**	**1,204,470**	**1,255,811**	**1,366,373**	**915,523**
								Total								
Import	2,738,273	2,925,834	2,648,631	2,859,207	3,643,131	3,973,205	3,747,361	3,573,936	3,813,030	3,753,253	4,130,444	4,607,754	5,130,643	4,915,989	4,723,899	3,698,313
Export	2,459,641	2,765,606	3,058,223	3,234,901	3,734,299	3,551,066	3,366,722	3,282,963	3,306,091	3,547,763	3,557,824	3,840,900	3,565,900	3,393,212	3,671,611	3,583,650
Total	**5,197,914**	**5,691,440**	**5,706,854**	**6,094,108**	**7,377,430**	**7,524,271**	**7,114,083**	**6,856,899**	**7,119,121**	**7,301,016**	**7,688,268**	**8,448,654**	**8,696,543**	**8,309,201**	**8,395,510**	**7,281,963**

Source: Jacksonville Port Authority.

base in terms of tonnage, which is an abstract of the larger overall tonnages reflected in Waterborne Commerce Statistics for foreign trade through Jacksonville Harbor (refer to Table 7). Jax Port cargo statistics are dominated by containers and then to a progressively less degree by bulk cargo imports and break bulk imports. Automobile units also play an important role in the Port's overall total cargo base.

The container trade that is handled by Jax Port facilities represents all of the container trade handled at Jacksonville Harbor. This regional foreign and domestic foreign trade has been previously described as oriented to the Caribbean, particularly Puerto Rico, which is considered domestic in terms of Jones Act (US flag) vessels. Most of the Puerto Rican trade is exports; consequently, there is a predominance of total container export tonnage compared to total container import tonnage because of the pivotal niche of Puerto Rican trade among the overall traditional Jacksonville container trades. Container TEUs and tons have displayed stability during the last decade. Figure 4 contains the annual total TEUs and container tonnages for the period 93/94 through 08/09.



4.0 PROJECT WATERBORNE COMMERCE

4.1 HISTORICAL GROWTH TRENDS

Table 9 expresses the changes in total annual foreign trade commodity tons for Jacksonville Harbor between 1997 and 2008 in terms of average annual compound growth rates (AACGR). There has been substantial growth in total annual tonnage for all commodities for Jacksonville Harbor since 1997. The AACGR for total annual tons ranges from relatively low values of 2.92 and 2.99 percent for the periods 1998-2008 and 2005-2008 to high values of 5.92 percent and

6.24 percent for the periods 2002-2008 and 2001-2008, respectively. Since 2001, the AACGR for total annual tons of cargo has been nearly five percent for all years and with the exception of the last three years nearly nine percent for the period 2004-2006.

Table 9. Jacksonville Harbor Waterborne Foreign Commerce Commodity Tons Average Annual Compound Growth Rates, 1997-2008

Commodity	Total										
	1997-2008	1998-2008	1999-2008	2000-2008	2001-2008	2002-2008	2003-2008	2004-2008	2005-2008	2006-2008	2007-2008
Total All Commodities	3.99%	2.92%	4.51%	4.62%	6.24%	5.92%	4.76%	4.57%	2.99%	-1.12%	0.43%
Total Coal	11.53%	10.40%	14.00%	14.80%	13.96%	22.76%	17.71%	18.34%	42.33%	52.35%	40.37%
Total Petroleum and Petroleum Products	0.75%	-0.91%	-1.18%	1.68%	9.02%	0.23%	-0.97%	2.03%	-5.67%	-19.37%	-25.10%
Total Chemicals and Related Products	-7.81%	-6.21%	-1.51%	2.95%	2.50%	0.58%	-1.85%	-8.07%	-4.89%	0.19%	4.33%
Total Crude Materials, Inedible Except Fuels	6.04%	4.47%	5.29%	0.62%	0.88%	0.60%	-0.07%	-1.35%	-6.29%	-11.57%	-7.14%
Total Primary Manufactured Goods	-2.17%	-3.35%	-2.31%	-3.19%	-3.17%	4.33%	-1.20%	-7.83%	-12.84%	-24.49%	-20.45%
Total Food and Farm Products	-4.70%	-5.04%	-0.25%	0.81%	0.33%	-5.59%	-2.59%	-2.41%	-13.50%	-4.44%	1.52%
Total All Manufactured Equipment, Machinery and Products	5.94%	4.45%	7.12%	8.15%	7.33%	10.20%	13.49%	12.93%	6.77%	8.07%	13.81%
Total Unknown or Not Elsewhere Classified	18.63%	21.82%	20.95%	1.89%	-1.49%	-8.78%	-19.27%	-29.47%	-32.78%	-3.30%	1.41%

Source: G.E.C., Inc.

The major foreign trade commodity groups by tonnage for Jacksonville Harbor are petroleum and related products, crude materials, coal, manufactured equipment, machinery and products, and primary manufactured goods. Total petroleum, coal, and crude materials in 2008, 10.492 million tons, was nearly 75 percent of total tonnage. The total for these four major groups (petroleum, crude materials, manufactured equipment, and primary manufactured goods) in 2006, 12.190 million tons, was nearly 90 percent of total foreign tonnage.

Petroleum and related products moving through Jacksonville Harbor have increased from 2.685 million tons in 1997 to 4.650 million tons in 2006, thereafter decreasing to 4.036 million tons in 2007 and 3.023 million tons in 2008 The AACGR was 0.75 percent for the 11-year period between 1997 and 2008. Petroleum grew modestly between 1997 and 2004 and then substantially for 2005 and 2006. However, the recent declines in 2007 and 2008 erase much of the overall growth in the time series. Moreover, interviews with the existing and prospective petroleum tank farms suggest that growth will likely be very low in the future, with the possibility of some declines of some products in response to shifts in domestic gasoline consumption that will likely be offset by increases in other petroleum products such as asphalt.

Crude materials tonnages, similar to petroleum tonnages, have increased substantially from 1.596 million tons in 1997 to 3.891 million tons in 2006 thereafter declining to 3.277 million tons in 2007 and 3.043 million tons in 2008. Crude materials tonnages have displayed a more even sustained growth rate than petroleum for the time series, 1997-2008. Crude materials tonnages had an AACGR of over 10 percent for the period 1997-2008, except for the last three years. Growth rates ranged from 6.04 percent in the period 1997-2008 to 0.60 percent and 0.62 percent for the periods 2002-2008 and 2000-2008, respectively. Crude material tonnages declined after 2003, primarily in the last two years, 2006-2008 and 2007-2008. Crude materials tonnages dominated by limestone and gypsum products associated with construction are expected to grow modestly in line with population projections for the local hinterland.

Coal tonnage is a mixed picture, ranging from 1.293 million tons in 2002 to 2.257 million tons in 2004, declining in 2005 to 1.535 million tons and thereafter rising to 4.426 million tons by 2008. The AACGR was 11.53 percent between 1997-2008 and ranged from 10.40 percent for the period 1998-2008 to 52.35 percent for the period 2006-2008. Coal is not expected to grow substantially more than the present plateau of nearly four million tons. Interviews with the Jacksonville Electric Authority (JEA) indicated a plateau of about four million tons annually for their receipts as the largest single existing coal commodity importer at Jacksonville.[22]

Manufactured products (both equipment, machinery and products and primary manufactured goods), the bulk of which is probably containerized, have grown substantially in recent years. For primary manufactured products, the AACGR has ranged from 4.45 percent for the period 1998-2008 to 13.49 percent and 13.81 percent for the periods 2003-2008 and 2007-2008, respectively. For manufactured equipment and machinery, the recent growth rates have ranged from 6.77 percent for the period 2005-2008 to 13.81 percent for the period 2007-2008. Containerized cargo is projected to grow substantially, with new services resulting from major global service providers securing private terminals at Jacksonville Harbor.

4.2 POPULATION PROJECTIONS USED FOR FORECASTING

Table 10 contains the population projections for the north Florida hinterland counties that are dominated by Duval County, contiguous with Jacksonville prepared by the University of Florida.[23] Total population in 2006 is 1.843 million. There are population projections for low, medium, and high growth for the periods 2010, 2015, 2020, 2025, and 2030. Figure 5 shows the population projections for low, medium, and high for the region for the period 2006 through 2030.

Table 11 contains the average annual compound growth rates (AACGR) for the north Florida hinterland counties in Table 10(4). For the region, the AACGR is 2.41 percent for the period 2010 to 2015. For Duval County (Jacksonville), the AACGR is 1.88 percent for the period 2010 to 2015. Some of the smaller populated counties outside but adjacent to Duval County (such as Nassau, St. Johns, and Clay counties) are projected to have much higher growth than Duval County. Overall, the region's medium population average annual growth rates are 1.61 percent for 2015 to 2020, 1.34 percent for 2020 to 2025, and 1.18 percent for 2025 to 2030. Figure 6 shows the population growth rates for the low, medium, and high for the region for the period 2010 to 2030.

4.2.1 Existing Cargo

Population growth rates were used as the basis for increasing the cargo volumes handled through Jacksonville Harbor except for liquid bulk cargo for which no growth was assumed because of the preponderance of automotive fuel imports which are not expected to grow.

[22] The historical commodity statistics for coal do not reflect that a major new coal terminal facility is planned for development at Jacksonville Harbor.

[23] The political boundaries of the City of Jacksonville are generally contiguous with Duval County with some exceptions related to beach communities that elected not to participate in a consolidated City-County government.

Table 10. North Florida Population Projections, 2010-2030

County	Estimate April 1, 2006	Projections, April 1 2010	2015	2020	2025	2030
DUVAL	879,235					
Low		906,000	938,000	960,100	973,300	980,300
Medium		944,500	1,017,700	1,084,400	1,143,900	1,199,900
High		981,500	1,101,100	1,221,900	1,344,100	1,470,400
NASSAU	68,188					
Low		71,900	76,300	79,400	81,400	82,500
Medium		75,800	84,500	92,700	100,000	106,900
High		79,500	93,200	107,500	122,100	137,500
ST. JOHNS	165,291					
Low		181,500	199,700	213,100	221,500	225,700
Medium		193,400	226,100	256,800	284,500	310,500
High		204,700	254,100	306,600	361,400	419,100
CLAY	176,901					
Low		190,800	207,000	219,500	227,900	233,100
Medium		201,100	229,400	255,600	279,100	300,900
High		210,900	253,100	296,900	341,900	388,600
BRADFORD	28,551					
Low		28,900	29,300	29,700	29,900	29,900
Medium		29,800	31,200	32,500	33,700	34,700
High		30,700	33,100	35,600	38,000	40,500
BAKER	25,004					
Low		25,800	26,700	27,400	27,700	27,900
Medium		26,900	29,000	30,900	32,600	34,100
High		28,000	31,400	34,800	38,300	41,800
COLUMBIA	63,538					
Low		66,000	68,400	70,100	71,100	71,500
Medium		68,800	74,200	79,200	83,500	87,600
High		71,500	80,300	89,200	98,200	107,300
UNION	15,028					
Low		15,200	15,000	14,700	14,200	13,600
Medium		16,200	17,000	17,800	18,500	19,100
High		17,200	19,100	21,100	23,100	25,300
FLAGLER	89,075					
Low		106,100	124,900	139,900	150,700	157,800
Medium		113,100	141,300	168,000	192,200	215,100
High		119,700	159,000	201,300	245,800	293,100
PUTNAM	74,416					
Low		74,600	75,200	75,500	75,500	75,300
Medium		77,000	79,900	82,700	85,200	87,500
High		79,300	84,800	90,500	96,100	101,900
ALACHUA	243,779					
Low		249,300	255,500	258,000	258,700	257,800
Medium		259,800	277,300	291,800	304,700	316,800
High		270,100	299,900	328,400	357,200	386,700
HAMILTON	14,517					
Low		14,400	14,200	14,100	13,800	13,600
Medium		15,000	15,500	16,000	16,400	16,800
High		15,600	16,700	17,900	19,100	20,300
Subtotal	1,843,523					
Low		1,930,500	2,030,200	2,101,500	2,145,700	2,169,000
Medium		2,021,400	2,223,100	2,408,400	2,574,300	2,729,900
High		2,108,700	2,425,800	2,751,700	3,085,300	3,432,500

Source: G.E.C., Inc.

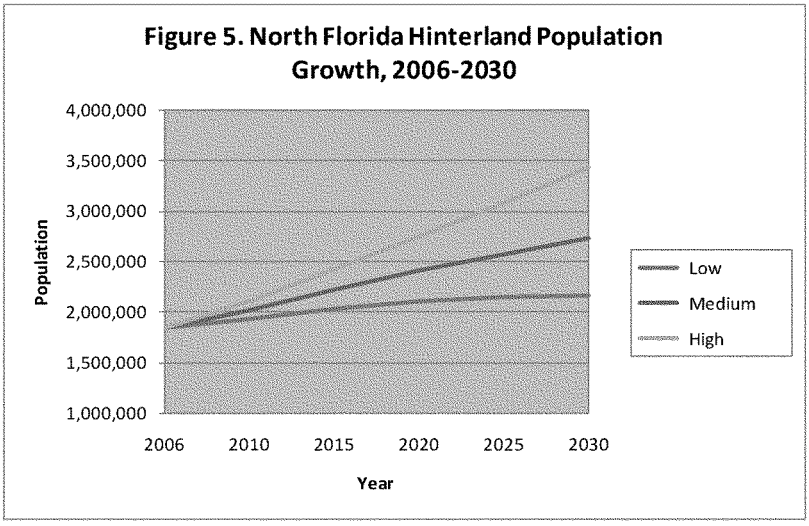
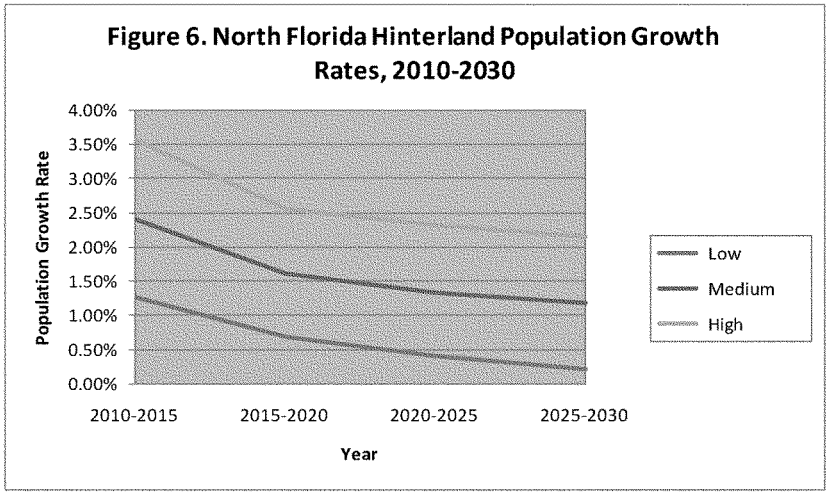


Figure 5. North Florida Hinterland Population Growth, 2006-2030
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
Population
2006
2010
2015
2020
2025
2030
Year
Low
Medium
High

Table 11. North Florida Population Projections Average Annual Compound Growth Rates, 2010-2030

County	2010-2015	2015-2020	2020-2025	2025-2030
DUVAL				
Low	0.87%	0.47%	0.27%	0.14%
Medium	1.88%	1.28%	1.07%	0.96%
High	2.92%	2.10%	1.92%	1.81%
NASSAU				
Low	1.50%	0.80%	0.50%	0.27%
Medium	2.75%	1.87%	1.53%	1.34%
High	4.05%	2.90%	2.58%	2.40%
ST. JOHNS				
Low	2.42%	1.31%	0.78%	0.38%
Medium	3.98%	2.58%	2.07%	1.76%
High	5.55%	3.83%	3.34%	3.01%
CLAY				
Low	2.06%	1.18%	0.75%	0.45%
Medium	3.35%	2.19%	1.77%	1.52%
High	4.67%	3.24%	2.86%	2.59%
BRADFORD				
Low	0.34%	0.27%	0.13%	0.00%
Medium	1.15%	0.82%	0.73%	0.59%
High	1.90%	1.47%	1.31%	1.28%
BAKER				
Low	0.86%	0.52%	0.22%	0.14%
Medium	1.90%	1.28%	1.08%	0.90%
High	2.91%	2.08%	1.94%	1.76%
COLUMBIA				
Low	0.90%	0.49%	0.28%	0.11%
Medium	1.91%	1.31%	1.06%	0.96%
High	2.94%	2.12%	1.94%	1.79%
UNION				
Low	-0.33%	-0.40%	-0.69%	-0.86%
Medium	1.21%	0.92%	0.77%	0.64%
High	2.65%	2.01%	1.83%	1.84%
FLAGLER				
Low	4.16%	2.29%	1.50%	0.92%
Medium	5.72%	3.52%	2.73%	2.28%
High	7.36%	4.83%	4.08%	3.58%
PUTNAM				
Low	0.20%	0.08%	0.00%	-0.05%
Medium	0.93%	0.69%	0.60%	0.53%
High	1.69%	1.31%	1.21%	1.18%
ALACHUA				
Low	0.62%	0.19%	0.05%	-0.07%
Medium	1.64%	1.02%	0.87%	0.78%
High	2.65%	1.83%	1.70%	1.60%
HAMILTON				
Low	-0.35%	-0.14%	-0.43%	-0.29%
Medium	0.82%	0.64%	0.50%	0.48%
High	1.72%	1.40%	1.31%	1.23%
Subtotal				
Low	1.27%	0.69%	0.42%	0.22%
Medium	2.41%	1.61%	1.34%	1.18%
High	3.56%	2.55%	2.31%	2.16%

Source: G.E.C., Inc.



4.2.2 Emerging Cargo

Discussions with TraPac indicated that during 2009 with two global container services calling weekly the terminal made a total of 38,000 moves.[24] Each move represents a container (box) transfer between shore and vessel. TraPac estimates that the inbound moves (imports) are all loaded and that 65 percent of the outbound moves (exports) are loaded. It would appear that the TraPac terminal in the 2009 calendar year handled a total of 31,350 loaded boxes (38,000/2 = 19,000 inbound [import] and 19,000 outbound [export] moves; 19,000 total loaded in + 0.65 * 19,000 total out = 31,350 loaded box moves). This volume, 31,350 loaded boxes, far exceeds the 10,401 boxes used from Phase 1 for the NWA Savannah Harbor boxes to and from the three-state hinterland where Jacksonville has a competitive truck hinterland cost advantage.

Discussions with TraPac in 2010 indicated that during June 2010 a third service began weekly calls augmenting the 2009 volumes from two services calling weekly. The terminal projects that the 2010 volume will increase to a total between 55,000 to 60,000 moves.[25] Each move represents a container (box) transfer between shore and vessel. TraPac estimates that the inbound moves (imports) are all loaded and that 65 percent of the outbound moves (exports) are loaded. It would appear that the TraPac terminal in the 2009 calendar year handled a total of 31,350 loaded boxes, and this will increase to 47,437 loaded boxes in 2010 (57,500/2 = 28,750 inbound [import] and 28,750 outbound [export] moves; 28,750 total loaded in + 0.65 * 28,750 total out = 47,437 loaded box moves). This volume, 47,437 loaded boxes, far exceeds the 10,401 boxes used from Phase 1 for the NWA Savannah Harbor boxes to and from the three-

[24] Terminal operations are conventionally depicted based on "moves," which is a ship to shore transfer of a loaded or empty container of any size or a shore to ship transfer of a loaded or empty container of any size.
[25] The new service is a Southeast Asia service with Post-Panamax vessels. Typically, there are about 500 moves per call for this service compared to about 350 moves per call for the two Asian Panama Canal services.

state hinterland where Jacksonville has a competitive truck hinterland cost advantage and is also substantially greater than the 2009 actual box volume (31,350 loaded boxes).

Table 12 indicates a compilation of the vessel calls at TraPac (Dames Point) from the inception of service at the new facility commencing in January 2009 to September 2010.[26] For most of 2009 there was one weekly service calling TraPac although originally it was conceived that two weekly services would call there. One FE ECUS service was eliminated that also called Savannah Harbor in response to the general decline in marine container trades during the recent recession. Subsequently, in the latter part of 2009 a second weekly service was initiated at TraPac.[27] An average of two Panamax container calls weekly persisted throughout 2010 until June when a third service, a weekly Post-Panamax South Asia Suez ECUS pendulum, was initiated.[28] Between June 16 and September 2 the TraPac facility averaged 2.55 calls per week by Panamax and Post-Panamax vessels. The number of vessel calls at the TraPac facility should be three weekly for 2011 based on two weekly calls for half of 2010 and three weekly calls on average for the second half of 2010.[29]

Table 12. Vessel Calls at TraPac (Dames Point) January 12, 2009 - September 2, 2010

Year	From	To	Weeks	Calls	Calls/Week
2009	1/12/2009	9/16/2009	35	25	0.71
2009	9/19/2009	12/26/2009	15	28	1.87
2010	1/1/2010	6/15/2010	24	48	2.00
2010	6/16/2010	9/2/2010	11	28	2.55

Source: G.E.C., Inc., from data furnished by Jacksonville Port Authority, September 2010.

4.3 COMMODITY PROJECTIONS

4.3.1. Introduction

Commodity projections were developed for the major groups with respect to the self-propelled deep draft vessel categories of dry bulk, liquid bulk, general cargo, and container (load on-load off). The commodity groups are aligned with the vessel categories to facilitate fleet projections in terms of numbers and sizes of vessel calls. The future without-project commodity projections will constitute the basis for the future with-project commodity and vessel fleet projections as these pertain to the Mile Point tidal constraint. Consequently, there will not be separate and distinct future with-project commodity projections that are different from the future without-

[26] MOL initiated direct service with a weekly call (subject to cancellations) at Blount Island in July 2008 as a precursor to calling its own facility when completed in January 2009.

[27] In December 2009, CMA-CGM container line obtained slots on this service and began service to TraPac.

[28] The new service marks the expansion of an existing K-Line service to include more ECUS ports (including Halifax) and MOL (owner of TraPac) and provides for K-Line (part of the CKYH alliance) to make direct vessel calls at Jacksonville Harbor, which it had not previously done.

[29] Cancellations of TraPac Dames Point calls occur due the schedule conflicts between the Mile Point tidal restraints and vessel operations. The lines will sometimes bypass Jacksonville and call Savannah and then call Jacksonville or skip Jacksonville based on the interaction between vessel schedule and Mile Point tidal time frames vis-à-vis existing delays.

project commodity projections. The same circumstances will pertain to the future vessel fleet projections wherein the future without-project fleet will be the same as the future with-project fleet owing to the same future commodity projections for without-project and with-project conditions. Commodity projections will be presented for the major groups in the following sections.

4.3.2 Dry Bulk

Dry bulk commodities, consisting of coal and crude materials (inedible except fuels), are shown in Table 13 for WCSC reported foreign commerce for the period 1997 through 2008 in short tons. The accompanying average annual compound growth rates are contained in Table 14. Overall, there has been substantial growth in dry bulk commodity tons, primarily consisting of imports, in the range of eight to 10 percent on an average annual basis between 1997 to 2008 and 2004 to 2008. After 2004, the total tonnage average annual growth rates accelerated, driven primarily by coal as growth within the crude materials sectors remained flat largely due to a decrease in tonnages in 2007 and 2008 accompanying a general decline in construction (cement and aggregates).

Table 15 contains a projection of dry bulk commodity tons and vessels for without-project conditions for the period 2008 through 2064. The dry bulk commodity tons are primarily consumed in the local area. Annual tons of dry bulk commodities increase based on the north Florida population hinterland projections (refer to Table 11).

The 2008 dry bulk metric tonnes, 6.776 million, are increased by the medium population projection growth rates for the periods 2009-2015, 2016-2020, 2021-2025, and 2026-2064. Dry bulk metric tonnes increase from 6.776 million tonnes (2008) to 14.644 million tonnes (2064).

Table 15 contains a history of dry bulk tonnes and vessel calls for without-project conditions for the years 2005-2006, 2006-2007, 2007-2008, and 2008-2009. The total annual dry bulk vessel calls (self-propelled vessels) are 188, 195, 156, and 154, respectfully. The associated dry bulk tonnages (from Table 13) are shown as 5.223 million short tons, 5.798 million short tons, 6.430 million short tons, and 7.469 million short tons, respectfully. The total dry bulk short tons are converted to metric tons as follows: 4.738 tonnes for 2005-2006, 5.260 tonnes for 2006-2007, 5.833 tonnes for 2007-2008, and 6.776 tonnes for 2008-2009.

The dry bulk fleet calling Jacksonville Harbor for these periods is shown stratified by deadweight tonnes (dwt) in the categories of >50,000, >40,000 <50,000, >30,000 <40,000, >20,000 <30,000, and <20,000. The number of calls for each vessel size category is calibrated to the dwt capacity of the dry bulk fleet calling Jacksonville Harbor during the period 2005-2009. The calibration factors used produced good fits between total vessel capacity (dwt) and total dry bulk commodity tonnes for the period 2007 (5.967 million tonnes dwt total capacity versus 5.833 million tonnes of total dry bulk cargo received) and 2008 (6.768 million tons dwt total vessel capacity versus 6.776 million tonnes of total dry bulk cargo received). The 2008 time frame was used as the basis for cargo and associated vessel projections.

Table 13. Jacksonville Harbor Waterborne Foreign Commerce
Annual Dry Bulk Cargo Tons (000), 1997-2008

Commodity	Total											
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Dry Bulk	2,928	3,610	3,274	4,364	4,634	4,228	5,013	5,470	5,233	5,798	6,430	7,469
Total Coal	1,332	1,645	1,361	1,467	1,773	1,293	1,959	2,257	1,535	1,907	3,153	4,426
Total Crude Materials, Inedible, Except Fuels	1,596	1,965	1,913	2,897	2,861	2,935	3,054	3,213	3,698	3,891	3,277	3,043

Source: Waterborne Commerce Statistics.

Table 14. Jacksonville Harbor Waterborne Foreign Commerce Commodity Tons
Average Annual Dry Bulk Cargo Compound Growth Rates, 1997-2008

Commodity	Total										
	1997-2008	1998-2008	1999-2008	2000-2008	2001-2008	2002-2008	2003-2008	2004-2008	2005-2008	2006-2008	2007-2008
Total Dry Bulk	8.89%	7.54%	9.60%	6.95%	7.06%	9.95%	8.30%	8.10%	12.59%	13.50%	16.16%
Total Coal	11.53%	10.40%	14.00%	14.80%	13.96%	22.76%	17.71%	18.34%	42.33%	52.35%	40.37%
Total Crude Materials, Inedible Except Fuels	6.04%	4.47%	5.29%	0.62%	0.88%	0.60%	-0.07%	-1.35%	-6.29%	-11.57%	-7.14%

Source: G.E.C., Inc.

Table 15. Jacksonville Harbor Dry Bulk Commodity Projections: Future Without-Project and Future With-Project

Total Annual Dry Bulk Vessel Calls and WCSC Commodity Tons				
Year	Calls	STons (000)	Average	Mtons (000)
2005-2006	188	5,223	27,782	4,738
2006-2007	195	5,798	29,733	5,260
2007-2008	156	6,430	41,218	5,833
2008-2009	154	7,469	48,500	6,776

Total Annual Dry Bulk Vessel Calls by Vessel Size (DWT)				
DWT	2005	2006	2007	2008
>50,000	55	69	75	89
>40,000	60	54	45	45
>30,000	46	42	24	14
>20,000	23	21	6	2
<20,000	4	9	6	4
Subtotal	188	195	156	154

Total Annual Dry Bulk Vessel Capacity (DWT) Calls by Vessel Size				
DWT	2005	2006	2007	2008
>50,000	2,475,000	3,105,000	3,375,000	4,405,500
>40,000	2,160,000	1,944,000	1,620,000	1,822,500
>30,000	1,242,000	1,134,000	756,000	441,000
>20,000	517,500	472,500	135,000	45,000
<20,000	54,000	121,500	81,000	54,000
Subtotal	6,448,500	6,777,000	5,967,000	6,768,000

					DWT	>50,000	>40,000	>30,000	>20,000	<20,000
	Dry Bulk		Growth Rates		DWT Share	65.09%	26.93%	6.52%	0.66%	0.80%
Year	Mtons (000)	Low	Medium	High	Shipment Size	49500	40500	31500	22500	13500
2008	6,776	1.27	2.41	3.56	154	89	45	14	2	4
2009	6,939	1.27	2.41	3.56	158	91	46	14	2	4
2010	7,107	1.27	2.41	3.56	162	93	47	15	2	4
2011	7,278	1.27	2.41	3.56	166	96	48	15	2	4
2012	7,453	1.27	2.41	3.56	170	98	50	15	2	4
2013	7,633	1.27	2.41	3.56	174	100	51	16	2	5
2014	7,817	1.27	2.41	3.56	178	103	52	16	2	5
2015	8,005	1.27	2.41	3.56	182	105	53	17	2	5
2016	8,134	0.69	1.61	2.55	185	107	54	17	2	5
2017	8,265	0.69	1.61	2.55	188	109	55	17	2	5
2018	8,398	0.69	1.61	2.55	191	110	56	17	2	5
2019	8,533	0.69	1.61	2.55	194	112	57	18	3	5
2020	8,671	0.69	1.61	2.55	197	114	58	18	3	5
2021	8,787	0.42	1.34	2.31	200	116	58	18	3	5
2022	8,905	0.42	1.34	2.31	203	117	59	18	3	5
2023	9,024	0.42	1.34	2.31	205	119	60	19	3	5
2024	9,145	0.42	1.34	2.31	208	120	61	19	3	5
2025	9,267	0.42	1.34	2.31	211	122	62	19	3	5
2026	9,377	0.22	1.18	2.16	213	123	62	19	3	6
2027	9,487	0.22	1.18	2.16	216	125	63	20	3	6
2028	9,599	0.22	1.18	2.16	218	126	64	20	3	6
2029	9,713	0.22	1.18	2.16	221	128	65	20	3	6
2030	9,827	0.22	1.18	2.16	224	129	65	20	3	6
2031	9,943	0.22	1.18	2.16	226	131	66	21	3	6
2032	10,060	0.22	1.18	2.16	229	132	67	21	3	6
2033	10,179	0.22	1.18	2.16	232	134	68	21	3	6
2034	10,299	0.22	1.18	2.16	234	135	68	21	3	6
2035	10,421	0.22	1.18	2.16	237	137	69	22	3	6
2036	10,544	0.22	1.18	2.16	240	139	70	22	3	6
2037	10,668	0.22	1.18	2.16	243	140	71	22	3	6
2038	10,794	0.22	1.18	2.16	246	142	72	22	3	6
2038	10,921	0.22	1.18	2.16	249	144	73	23	3	6
2040	11,050	0.22	1.18	2.16	251	145	73	23	3	7
2041	11,181	0.22	1.18	2.16	254	147	74	23	3	7
2042	11,313	0.22	1.18	2.16	257	149	75	23	3	7
2043	11,446	0.22	1.18	2.16	260	151	76	24	3	7
2044	11,581	0.22	1.18	2.16	264	152	77	24	3	7
2045	11,718	0.22	1.18	2.16	267	154	78	24	3	7
2046	11,856	0.22	1.18	2.16	270	156	79	25	4	7
2047	11,996	0.22	1.18	2.16	273	158	80	25	4	7
2048	12,138	0.22	1.18	2.16	276	160	81	25	4	7
2049	12,281	0.22	1.18	2.16	279	161	82	25	4	7
2050	12,426	0.22	1.18	2.16	283	163	83	26	4	7
2051	12,572	0.22	1.18	2.16	286	165	84	26	4	7
2052	12,721	0.22	1.18	2.16	289	167	85	26	4	8
2053	12,871	0.22	1.18	2.16	293	169	86	27	4	8
2054	13,023	0.22	1.18	2.16	296	171	87	27	4	8
2055	13,176	0.22	1.18	2.16	300	173	88	27	4	8
2056	13,332	0.22	1.18	2.16	303	175	89	28	4	8
2057	13,489	0.22	1.18	2.16	307	177	90	28	4	8
2058	13,648	0.22	1.18	2.16	311	179	91	28	4	8
2059	13,809	0.22	1.18	2.16	314	182	92	29	4	8
2060	13,972	0.22	1.18	2.16	318	184	93	29	4	8
2061	14,137	0.22	1.18	2.16	322	186	94	29	4	8
2062	14,304	0.22	1.18	2.16	325	188	95	30	4	8
2063	14,473	0.22	1.18	2.16	329	190	96	30	4	9
2064	14,644	0.22	1.18	2.16	333	193	97	30	4	9

Notes: Calls = total annual number of dry bulk vessel calls at Jacksonville Harbor.
STons = total calendar year WCSC foreign dry bulk short tons.
Average = average dry bulk short tons per vessel call.
Mtons = total calendar year WCSC foreign dry bulk metric tons.
DWT = deadweight cargo capacity of vessels.
Capacity = Total DWT applied to each vessel category and annual calls.
Growth Rates = Hinterland population projections.
DWT Share = Share of total annual commodity tons carried on each vessel size category.
Shipment Size = Estimated average shipment size for each vessel size category.

Source: GE.C., Inc.

The cargo vessel projections for without-project conditions are based on allocating a share of total dry bulk cargo tonnes to each vessel dwt category based on the relationship between capacity (dwt) and total tonnes of cargo. For the vessel categories the following capacity (dwt) shares of total cargo tonnes were computed: >50,000 - 65.09 percent; >40,000 - 26.93 percent; >30,000 - 6.52 percent; >20,000 - 0.66 percent; and <20,000 - 0.80 percent.

The average shipment size for each vessel size category is computed by dividing the total annual capacity (dwt) by the total annual number of calls. For example, the >50,000 size category capacity (dwt) was 4.405 million tonnes in 2008 that represented 89 calls for dry bulk vessels >50,000 dwt. The average shipment size would be 49,500 tonnes (4,405,400 capacity tonnes/89 calls = 49,500 tonnes).[30] The average shipment sizes for the other capacity (dwt) categories correspond to the typical range, such as 40,500 tonnes for the category >40,000 <50,000, 31,500 tonnes for the category >30,000 <40,000, 22,500 tonnes for the category >20,000 <30,000, and 13,500 tonnes for the category <20,000.

The base year dry bulk fleet that called Jacksonville Harbor (2008-2009) shown for 2008 is 89 calls >50,000 dwt, 45 calls >40,000 dwt, 14 calls >30,000 dwt, two calls >20,000 dwt, and four calls <20,000 dwt. These calls are projected based on the medium growth in population for the dry bulk tonnes for the period 2009 through 2064 for without-project conditions.

4.3.3 Liquid Bulk

Liquid bulk cargoes at Jacksonville Harbor are primarily related to refined petroleum products from foreign and domestic sources augmented by chemicals. Table 16 shows the WCSC liquid bulk ton receipts reported for the period 1997 through 2008 for foreign and domestic sources. The petroleum cargoes primarily represent refined products related to domestic transportation sector fuels such as gasoline and diesel fuel. These products are primarily consumed locally. Petroleum products imports increased until 2006 and then declined in 2007 and 2008. Domestic receipts of petroleum products have shown more fluctuation, likely in response to the availability of imports. Total liquid bulk tons reached 9.037 million in 2006 and then declined to 7.532 million tons in 2007 and 7.476 million tons in 2008.

Table 17 contains the average annual compound growth rates for the liquid bulk tons handled at Jacksonville Harbor between 1997 and 2008. Overall, for the entire time frame 1997-2008, there has been modest growth in foreign petroleum imports (0.75 percent) and modest decline in domestic petroleum receipts (-0.96 percent). Since the total volume (tons) of domestic petroleum receipts is nearly two times the total volume (tons) of foreign imports (refer to Table 16), overall petroleum receipts declined during the entire period 1997-2008. Similarly, chemicals, albeit of much smaller total volume (tons) than petroleum products, also declined during the time frame 1997-2008. Total liquid bulk receipts (tons) declined on an average annual basis of -0.86 percent for the period 1997-2008. The declines measured on an average annual basis (refer to Table 17) have been more evident in recent periods such as 2003-2008

[30] Typically, dry bulk vessel cargo capacities as a subset of total carrying capacity (dwt) will be about 90 percent for a fully loaded vessel. The >50,000 dwt dry bulk capacity category includes a number of larger vessels in the range of 70,000 to 80,000 dwt. Consequently, the 49,500 average shipment size is reflective of a larger fleet of vessels that are >50,000 dwt rather than at or near 50,000 dwt.

Table 16. Jacksonville Harbor Waterborne Liquid Bulk Receipts, Foreign and Domestic, Annual Commodity Tons (000), 1997-2008

Commodity	Total											
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Liquid Bulk Receipts	8,204	9,592	8,418	8,092	6,363	7,365	9,427	8,550	8,719	9,037	7,532	7,476
Total Foreign Petroleum and Petroleum Products	2,785	3,313	3,365	2,645	1,652	2,982	3,174	2,789	3,601	4,650	4,036	3,023
Total Foreign Chemicals and Related Products	648	503	304	210	223	256	291	371	308	264	254	265
Total Domestic Coastwise Petroleum and Petroleum Products	4,504	5,492	4,419	4,935	4,239	3,962	5,780	5,254	4,719	4,001	3,148	4,051
Total Domestic Coastwise Chemicals and Related Products	267	284	330	302	249	165	182	136	91	122	94	137

Source: Waterborne Commerce Statistics.

Table 17. Jacksonville Harbor Waterborne Liquid Bulk Receipts, Foreign and Domestic, Average Annual Compound Growth Rates, 1997-2008

Commodity	Total										
	1997-2008	1998-2008	1999-2008	2000-2008	2001-2008	2002-2008	2003-2008	2004-2008	2005-2008	2006-2008	2007-2008
Total Liquid Bulk Receipts	-0.84%	-2.46%	-1.31%	-0.98%	2.33%	0.25%	-4.53%	-3.30%	-5.00%	-9.05%	-0.74%
Total Foreign Petroleum and Petroleum Products	0.75%	-0.91%	-1.18%	1.68%	9.02%	0.23%	-0.97%	2.03%	-5.67%	-19.37%	-25.10%
Total Foreign Chemicals and Related Products	-7.81%	-6.21%	-1.51%	2.95%	2.50%	0.58%	-1.85%	-8.07%	-4.89%	0.19%	4.33%
Total Domestic Coastwise Petroleum and Petroleum Products	-0.96%	-2.73%	-0.79%	-1.78%	-0.41%	0.20%	-3.18%	-2.34%	-1.38%	0.11%	2.32%
Total Domestic Coastwise Chemicals and Related Products	-5.89%	-6.41%	-7.68%	-6.93%	-5.29%	-1.68%	-2.55%	0.07%	3.79%	1.06%	3.48%

Source: G.E.C., Inc.

(-4.53 percent), 2004-2008 (-3.30 percent), 2005-2008 (-5.00 percent), and 2006-2008 (-9.05 percent). The most recent decline between 2007-2008 for liquid bulk was -0.74 percent. It reflects that foreign imports have declined substantially in recent years, -19.37 percent from 2006-2008 and -25.10 percent from 2007-2008, while domestic receipts have increased only slightly, at 0.11 percent from 2006-2008 and 2.32 percent from 2007-2008. The phenomenon of declining foreign imports versus stable or rising domestic petroleum product receipts observed here is similar to other U.S. ports such as Port Everglades where the historic dependency on U.S. refined petroleum products is returning as consumption declines relative to past receipts and is reflected in reduced foreign imports.

Table 18 contains a projection of liquid bulk commodity tons and vessels for without-project conditions for the period 2008 through 2064. Annual tons of liquid bulk commodities are not projected to increase in deference to the increase of the north Florida population hinterland projections (refer to Table 11).

The 2008 liquid bulk metric tonnes (6.782 million) are maintained with zero growth rate for the periods corresponding to population growth rates during 2009-2015, 2016-2020, 2021-2025, and 2026-2064. Liquid metric tonnes remain at 6.782 million from 2008 to 2064.

Table 18 contains a history of liquid bulk tonnes and vessel calls for without-project conditions for the years 2005-2006, 2006-2007, 2007-2008, and 2008-2009. The total annual liquid bulk vessel calls (self-propelled vessels) are 300, 309, 293, and 280, respectfully. The associated liquid bulk tonnages (from Table 16) are shown as 8.719 million short tons, 9.037 million short tons, 7.532 million short tons, and 7.476 million short tons, respectfully. The total liquid bulk short tons are converted to metric tons as follows: 7.910 tonnes for 2005-2006, 8.198 tonnes for 2006-2007, 6.833 tonnes for 2007-2008, and 6.782 tonnes for 2008-2009.

The liquid bulk fleet calling Jacksonville Harbor for these periods is shown stratified by deadweight tonnes (dwt) in the categories of >60,000, >50,000 <60,000, >40,000 <50,000, >30,000 <40,000, >20,000 <30,000, >10,000 <20,000, and <10,000. The number of calls for each vessel size category is calibrated to the capacity of the dwt fleet capacity. The calibration factors used produced good fits between total vessel capacity and total liquid bulk tonnes for the periods 2005-2006 (7.805 million tonnes dwt total capacity versus 7.910 million tonnes of total liquid bulk cargo received), 2006-2007 (7.924 million tonnes dwt total capacity versus 8.98 million tonnes of total liquid bulk cargo received), 2007-2008 (6.876 million tonnes dwt total capacity versus 6.833 million tons of total liquid bulk cargo received), and 2008-2009 (6.798 million tons dwt total capacity versus 6.782 million tonnes of total liquid bulk cargo received).

The 2007-2008 time frame was used as the basis for cargo and associated vessel projections. The cargo vessel projections for without-project conditions are based on allocating a share of total liquid bulk cargo tonnes to each vessel dwt category based on the relationship between capacity (dwt) and total tonnes of cargo. For the vessel categories, the following capacity (dwt) shares of total cargo tonnes were computed: >60,000 - 24.1 percent; >50,000 - 9.71 percent;

Table 18. Jacksonville Harbor Liquid Bulk Commodity Projections: Future Without-Project and Future With-Project

Total Annual Liquid Bulk Vessel Calls and WCSC Commodity Tons				
Year	Calls	STons (000)	Average	Mtons (000)
2005-2006	300	8,719	29,063	7,910
2006-2007	309	9,037	29,246	8,198
2007-2008	293	7,532	25,706	6,833
2008-2009	280	7,476	26,700	6,782

Total Annual Liquid Bulk Vessel Calls by Vessel Size (DWT)				
DWT	2005	2006	2007	2008
>60000	27	39	30	39
>50,000	8	7	16	22
>40,000	179	183	184	151
>30,000	59	54	41	36
>20,000	11	12	5	6
>10,000	18	10	14	23
<10,000	7	4	3	3
Subtotal	300	309	293	280

Total Annual Liquid Bulk Vessel Capacity (DWT) Calls by Vessel Size				
DWT	2005	2006	2007	2008
>60000	1,134,000	1,521,000	1,080,000	1,638,000
>50,000	280,000	245,000	480,000	660,000
>40,000	5,012,000	4,758,000	4,416,000	3,624,000
>30,000	1,050,000	1,134,000	738,000	648,000
>20,000	154,000	168,000	60,000	72,000
>10,000	126,000	70,000	84,000	138,000
<10,000	49,000	28,000	18,000	18,000
Subtotal	7,805,000	7,924,000	6,876,000	6,798,000

					DWT	>60,000	>50,000	>40,000	>30,000	>20,000	>10,000	<10,000
					DWT Share	24.10%	9.71%	53.33%	9.53%	1.06%	2.03%	0.26%
	Liquid Bulk	Growth Rates			Shipment Size	42,000	30,000	24,000	18,000	12,000	6,000	6,000
Year	Mtons (000)	Low	Medium	High	Total Calls							
2008	6,782	0	0	0	279	39	22	151	36	6	23	3
2009	6,782	0	0	0	279	39	22	151	36	6	23	3
2010	6,782	0	0	0	279	39	22	151	36	6	23	3
2011	6,782	0	0	0	279	39	22	151	36	6	23	3
2012	6,782	0	0	0	279	39	22	151	36	6	23	3
2013	6,782	0	0	0	279	39	22	151	36	6	23	3
2014	6,782	0	0	0	279	39	22	151	36	6	23	3
2015	6,782	0	0	0	279	39	22	151	36	6	23	3
2016	6,782	0	0	0	279	39	22	151	36	6	23	3
2017	6,782	0	0	0	279	39	22	151	36	6	23	3
2018	6,782	0	0	0	279	39	22	151	36	6	23	3
2019	6,782	0	0	0	279	39	22	151	36	6	23	3
2020	6,782	0	0	0	279	39	22	151	36	6	23	3
2021	6,782	0	0	0	279	39	22	151	36	6	23	3
2022	6,782	0	0	0	279	39	22	151	36	6	23	3
2023	6,782	0	0	0	279	39	22	151	36	6	23	3
2024	6,782	0	0	0	279	39	22	151	36	6	23	3
2025	6,782	0	0	0	279	39	22	151	36	6	23	3
2026	6,782	0	0	0	279	39	22	151	36	6	23	3
2027	6,782	0	0	0	279	39	22	151	36	6	23	3
2028	6,782	0	0	0	279	39	22	151	36	6	23	3
2029	6,782	0	0	0	279	39	22	151	36	6	23	3
2030	6,782	0	0	0	279	39	22	151	36	6	23	3
2031	6,782	0	0	0	279	39	22	151	36	6	23	3
2032	6,782	0	0	0	279	39	22	151	36	6	23	3
2033	6,782	0	0	0	279	39	22	151	36	6	23	3
2034	6,782	0	0	0	279	39	22	151	36	6	23	3
2035	6,782	0	0	0	279	39	22	151	36	6	23	3
2036	6,782	0	0	0	279	39	22	151	36	6	23	3
2037	6,782	0	0	0	279	39	22	151	36	6	23	3
2038	6,782	0	0	0	279	39	22	151	36	6	23	3
2038	6,782	0	0	0	279	39	22	151	36	6	23	3
2040	6,782	0	0	0	279	39	22	151	36	6	23	3
2041	6,782	0	0	0	279	39	22	151	36	6	23	3
2042	6,782	0	0	0	279	39	22	151	36	6	23	3
2043	6,782	0	0	0	279	39	22	151	36	6	23	3
2044	6,782	0	0	0	279	39	22	151	36	6	23	3
2045	6,782	0	0	0	279	39	22	151	36	6	23	3
2046	6,782	0	0	0	279	39	22	151	36	6	23	3
2047	6,782	0	0	0	279	39	22	151	36	6	23	3
2048	6,782	0	0	0	279	39	22	151	36	6	23	3
2049	6,782	0	0	0	279	39	22	151	36	6	23	3
2050	6,782	0	0	0	279	39	22	151	36	6	23	3
2051	6,782	0	0	0	279	39	22	151	36	6	23	3
2052	6,782	0	0	0	279	39	22	151	36	6	23	3
2053	6,782	0	0	0	279	39	22	151	36	6	23	3
2054	6,782	0	0	0	279	39	22	151	36	6	23	3
2055	6,782	0	0	0	279	39	22	151	36	6	23	3
2056	6,782	0	0	0	279	39	22	151	36	6	23	3
2057	6,782	0	0	0	279	39	22	151	36	6	23	3
2058	6,782	0	0	0	279	39	22	151	36	6	23	3
2059	6,782	0	0	0	279	39	22	151	36	6	23	3
2060	6,782	0	0	0	279	39	22	151	36	6	23	3
2061	6,782	0	0	0	279	39	22	151	36	6	23	3
2062	6,782	0	0	0	279	39	22	151	36	6	23	3
2063	6,782	0	0	0	279	39	22	151	36	6	23	3
2064	6,782	0	0	0	279	39	22	151	36	6	23	3

Notes: Calls = total annual number of liquid bulk vessel calls at Jacksonville Harbor.
STons = total calendar year WCSC foreign and domestic liquid bulk short tons.
Average = average liquid bulk short tons per vessel call.
Mtons = total calendar year WCSC foreign and domestic liquid bulk metric tons.
DWT = deadweight cargo capacity of vessels.
Capacity = Total DWT applied to each vessel category and annual calls.
Growth Rates = Hinterland population projections.
DWT Share = Share of total annual commodity tons carried on each vessel size category.
Shipment Size = Estimated average shipment size for each vessel size category.

Source: GEC, Inc.

>40,000 - 53.31 percent; >30,000 - 9.53 percent; >20,000 - 1.06 percent; >10,000 - 2.03 percent; and <10,000 - 0.26 percent.[31]

The average shipment size for each vessel size category is computed by dividing the total annual capacity (dwt) by the total annual number of calls. For example, the >60,000 capacity (dwt) was 1.080 million tonnes in 2007 that represented 30 calls for liquid bulk vessels >60,000 dwt. The average shipment size would be 42,000 tonnes (1,080,000 capacity tonnes/30 calls = 42,000 tonnes).[32] The average shipment sizes for the other capacity (dwt) categories correspond to the typical range for (multiple) products carriers calling multiple ports on a designated product supply rotation. The average shipment size was 30,000 tonnes for the category >50,000 <60,000, 24,000 tonnes for the category >40,000 <50,000, 18,000 tonnes for the category >30,000 <40,000, 12,000 tonnes for the category >20,000 <30,000, 6,000 tonnes for the category >10,000 <20,000, and 6,000 tonnes for the category <10,000 tonnes dwt.

The base year liquid bulk fleet that called Jacksonville Harbor (2007-2008) shown for 2008 is 39 calls >60,000 dwt, 22 calls >50,000 dwt, 151 calls >40,000 dwt, 36 calls >30,000 dwt, six calls >20,000 dwt, 23 calls >10,000 dwt, and three calls <10,000 dwt. These calls are projected to remain unchanged with no growth in response to changes in population for liquid bulk tonnes for the period 2009 through 2064 for without-project conditions.

4.3.4 General Cargo

General cargo tons were based on Jax Port tonnages reported for the category "break bulk" (refer to Table 1 and Table 8).[33] Jax Port break bulk tonnages peaked in FY 2005-2006 at 1.212 million tons and then declined to 1.161 million tons (2006-2007), 0.952 million tons (2007-2008), and 0.774 million tons (2008-2009). Among the heavier break bulk tonnages affected by the business cycle have been poultry (exports), paper and related forest products, and iron and steel products (refer to Table 1).

Table 19 contains a projection of general cargo commodity tons and vessels for without-project conditions for the period 2008 through 2064. Annual tons of general cargo commodities increase based on the north Florida population hinterland projections (refer to Table 11). The 2008 general cargo metric tonnes (0.865 million) are increased by the medium population projection growth rates for the periods 2009-2015, 2016-2020, 2021-2025, and 2026-2064. General cargo metric tonnes increase from 0.865 million (2008) to 1.896 million (2064).

Table 19 contains a history of general cargo tonnes and vessel calls for without-project conditions for the years 2005-2006, 2006-2007, 2007-2008, and 2008-2009. The total annual general cargo vessel calls (self-propelled vessels) are 229, 230, 205, and 190, respectfully. The

[31] The relatively large percentage of total liquid bulk capacity calling Jacksonville Harbor for Handysize vessels >40,000 <50,000 reflects U.S. flag vessels engaged in domestic coastal trade.

[32] Typically, liquid bulk vessel cargo capacities as a subset of total carrying capacity (dwt) will be about 90 percent for a fully loaded vessel. The >60,000 dwt dry bulk capacity category represents primarily products carriers that often make multiple port calls for multiple products rather than discharge entirely one product at one port.

[33] The Jax Port break bulk cargo statistics used reflect that there are no competing public marine terminals other than Jax Port facilities in Jacksonville Harbor and no private commercial terminals capable of handling general cargo other than with special circumstances.

Table 19. Jacksonville Harbor General Cargo Commodity Projections: Future Without-Project and Future With-Project

Total Annual General Cargo Vessel Calls and JaxPort Break Bulk Commodity Tons				
Year	Calls	STons (000)	Average	Mtons (000)
2005-2006	229	1,213	5,297	1,100
2006-2007	230	1,162	5,052	1,054
2007-2008	205	953	4,649	865
2008-2009	190	775	4,079	703

Total Annual General Cargo Vessel Calls by Vessel Size (DWT)				
DWT	2005	2006	2007	2008
>40,000	5	17	21	0
>30,000	15	9	8	7
>20,000	46	55	51	40
>10,000	3	8	5	11
<10,000	160	141	120	132
Subtotal	229	230	205	190

Total Annual General Cargo Vessel Capacity (DWT) by Vessel Size				
DWT	2005	2006	2007	2008
>40,000	60,000	204,000	252,000	0
>30,000	135,000	81,000	60,000	63,000
>20,000	276,000	330,000	255,000	240,000
>10,000	9,000	24,000	12,500	33,000
<10,000	480,000	423,000	300,000	396,000
Subtotal	960,000	1,062,000	879,500	732,000

					DWT	>40,000	>30,000	>20,000	>10,000	<10,000
					DWT Share	28.65%	6.82%	28.99%	1.42%	34.11%
	Break Bulk	Growth Rates			Shipment Size	12,000	7,500	5,000	2,500	1,500
Year	Mtons (000)	Low	Medium	High	Total Calls					
2008	865	1.27	2.41	3.56	202	21	8	59	5	118
2009	886	1.27	2.41	3.56	206	21	8	51	5	121
2010	907	1.27	2.41	3.56	211	22	8	53	5	124
2011	929	1.27	2.41	3.56	217	22	8	54	5	127
2012	951	1.27	2.41	3.56	222	23	9	55	5	130
2013	974	1.27	2.41	3.56	227	23	9	57	6	133
2014	998	1.27	2.41	3.56	233	24	9	58	6	136
2015	1,022	1.27	2.41	3.56	238	24	9	59	6	139
2016	1,038	0.69	1.61	2.55	242	25	9	60	6	142
2017	1,055	0.69	1.61	2.55	246	25	10	61	6	144
2018	1,072	0.69	1.61	2.55	250	26	10	62	6	146
2019	1,089	0.69	1.61	2.55	254	26	10	63	6	149
2020	1,107	0.69	1.61	2.55	258	26	10	64	6	151
2021	1,122	0.42	1.34	2.31	261	27	10	65	6	153
2022	1,137	0.42	1.34	2.31	265	27	10	66	6	155
2023	1,152	0.42	1.34	2.31	269	28	10	67	7	157
2024	1,167	0.42	1.34	2.31	272	28	11	68	7	159
2025	1,183	0.42	1.34	2.31	276	28	11	69	7	161
2026	1,197	0.22	1.18	2.16	279	29	11	69	7	163
2027	1,211	0.22	1.18	2.16	282	29	11	70	7	165
2028	1,225	0.22	1.18	2.16	286	29	11	71	7	167
2029	1,240	0.22	1.18	2.16	289	30	11	72	7	169
2030	1,255	0.22	1.18	2.16	292	30	11	73	7	171
2031	1,269	0.22	1.18	2.16	296	30	12	74	7	173
2032	1,284	0.22	1.18	2.16	299	31	12	74	7	175
2033	1,299	0.22	1.18	2.16	303	31	12	75	7	177
2034	1,315	0.22	1.18	2.16	306	31	12	76	7	179
2035	1,330	0.22	1.18	2.16	310	32	12	77	8	182
2036	1,346	0.22	1.18	2.16	314	32	12	78	8	184
2037	1,362	0.22	1.18	2.16	317	33	12	79	8	186
2038	1,378	0.22	1.18	2.16	321	33	13	80	8	188
2038	1,394	0.22	1.18	2.16	325	33	13	81	8	190
2040	1,411	0.22	1.18	2.16	329	34	13	82	8	192
2041	1,427	0.22	1.18	2.16	333	34	13	83	8	195
2042	1,444	0.22	1.18	2.16	337	34	13	84	8	197
2043	1,461	0.22	1.18	2.16	341	35	13	85	8	199
2044	1,478	0.22	1.18	2.16	345	35	13	86	8	202
2045	1,496	0.22	1.18	2.16	349	36	14	87	9	204
2046	1,514	0.22	1.18	2.16	353	36	14	88	9	207
2047	1,531	0.22	1.18	2.16	357	37	14	89	9	209
2048	1,549	0.22	1.18	2.16	361	37	14	90	9	211
2049	1,568	0.22	1.18	2.16	365	37	14	91	9	214
2050	1,586	0.22	1.18	2.16	370	38	14	92	9	216
2051	1,605	0.22	1.18	2.16	374	38	15	93	9	219
2052	1,624	0.22	1.18	2.16	379	39	15	94	9	222
2053	1,643	0.22	1.18	2.16	383	39	15	95	9	224
2054	1,662	0.22	1.18	2.16	387	40	15	96	9	227
2055	1,682	0.22	1.18	2.16	392	40	15	98	10	230
2056	1,702	0.22	1.18	2.16	397	41	15	99	10	232
2057	1,722	0.22	1.18	2.16	401	41	16	100	10	235
2058	1,742	0.22	1.18	2.16	406	42	16	101	10	238
2059	1,763	0.22	1.18	2.16	411	42	16	102	10	241
2060	1,784	0.22	1.18	2.16	416	43	16	103	10	243
2061	1,805	0.22	1.18	2.16	421	43	16	105	10	246
2062	1,826	0.22	1.18	2.16	426	44	17	106	10	249
2063	1,848	0.22	1.18	2.16	431	44	17	107	11	252
2064	1,869	0.22	1.18	2.16	436	45	17	108	11	255

Notes: Calls = total annual number of general cargo vessel calls at Jacksonville Harbor .
STons = total calendar year JaxPort break bulk short tons.
Average = average break bulk short tons per vessel call.
Mtons = total calendar year JaxPort break bulk metric tons.
DWT = deadweight cargo capacity of vessels.
Capacity = Total DWT applied to each vessel category and annual calls.
Growth Rates = Hinterland population projections.
DWT Share = Share of total annual commodity tons carried on each vessel size category.
Shipment Size = Estimated average shipment size for each vessel size category.

Source: G.E.C., Inc.

associated general cargo tonnages (from Table 8) are shown as 1.213 million short tons, 1.162 million short tons, 0.953 million short tons, and 0.775 million short tons, respectfully. The total general cargo short tons are converted to metric tons as follows: 1.100 million tonnes for 2005-2006, 1.054 million tonnes for 2006-2007, 0.865 million tonnes for 2007-2008, and 0.703 million tonnes for 2008-2009.

The general cargo fleet calling Jacksonville Harbor for these periods is shown stratified by deadweight tonnes (dwt) in the categories of >40,000, >30,000 <40,000, >20,000 <30,000, >10,000 <20,000, and <10,000. The number of calls for each vessel size category is calibrated to the capacity of the dwt fleet capacity. The calibration factors used produced good fits between total vessel capacity and total general cargo tonnes for the periods 2006-2007 (1.062 million tonnes dwt total capacity versus 1.054 million tonnes of total general cargo) and 2007-2008 (0.732 million tons dwt total capacity versus 0.703 million tonnes of total general cargo). The 2007 time frame was used as the basis for cargo and associated vessel projections

The cargo vessel projections for without-project conditions are based on allocating a share of total general cargo tonnes to each vessel dwt category based on the relationship between capacity (dwt) and total tonnes of cargo. For the vessel categories, the following capacity (dwt) shares of total cargo tonnes were computed: >40,000 - 28.65 percent; >30,000 - 6.82 percent; >20,000 - 28.99 percent; >10,000 - 1.42 percent; and <10,000 - 34.11 percent.

The average shipment size for each vessel size category is computed by dividing the total annual capacity (dwt) by the total annual number of calls. For example, the >40,000 capacity (dwt) was 0.252 million tonnes in 2007 that represented 21 calls for general cargo vessels >40,000 dwt. The average shipment size would be 12,000 tons (252,000 capacity tonnes/21 calls = 12,000 tonnes).[34] The average shipment sizes for the other capacity (dwt) categories correspond to the typical range such as 7,500 tonnes for the category >30,000 <40,000, 5,000 tonnes for the category >20,000 <30,000, 2,500 tonnes for the category >10,000 <20,000, and 2,500 tonnes for the category <10,000.

The base year general cargo fleet that called Jacksonville Harbor (2007-2008) shown for 2008 is 21 calls >40,000 dwt, eight calls >30,000 dwt, 50 calls >20,000 dwt, five calls >10,000 dwt, and 118 calls <10,000 dwt. These calls are projected based on the medium growth in population for the general cargo tonnes for the period 2009 through 2064 for without-project conditions.

4.3.5 Containerized Cargo Excluding Dames Point

Jax Port has historically been a major containerized cargo port for the Caribbean region, primarily exports to Puerto Rico, and to a lesser degree trade with South America. Jax Port cargo statistics in Table 1 for the period FY 1993/1994 through FY 2008/2009 indicate that the major Jacksonville container markets have been Puerto Rico followed by South America. The Puerto Rico market represented 52 percent of total TEUs for FY 1993/1994

[34] Typically, general cargo vessel cargo capacities as a subset of total carrying capacity (dwt) will be about 65 percent for a fully loaded vessel. Moreover, general cargo vessels customarily make multiple port calls both on liner and induced schedules that are usually reflected in a relatively small portion of total vessel cargo capacity transferred at any one port.

(1,545,862/2,970,460 = 0.52) and 65 percent of total TEUs for FY 2007/2008 (2,346,463/3,600,716 = 0.65). The South American market represented 32 percent of total TEUs for FY 93/94 (956,597/2,970,460 = 0.32) and 26 percent of total TEUs for FY 2007/2008 (927,351/3,600,716 = 0.26). Together, the combined Puerto Rico and South American markets represented 84 percent of total TEUs for FY 1993/1994 and 91 percent of total TEUs for FY 2007/2008.[35]

Table 20 contains a listing of the major exports and imports for 12 months (October 2007 - September 2008) measured in TEU units for the PIERS commodity groups for the top commodities for the Caribbean market, which is primarily Puerto Rico. The total volumes for the top commodities indicate that exports, 388,770 TEUs, far outweigh imports, 82,832 TEUs (the Puerto Rican trade is characterized as heavily imbalanced). The top commodity exports for the PIERS commodity groups are Foodstuffs (30.2 percent), Miscellaneous (24.3 percent), Chemicals (10.8 percent), and Forest Products (9.2 percent), which collectively comprise nearly 75 percent of total top commodity export TEUs. The top commodity imports for the PIERS commodity groups are Chemicals (23.1 percent), Foodstuffs (17.3 percent), Miscellaneous (9.2 percent), and Forest Products (9.1 percent), which collectively comprise nearly 60 percent of total top commodity import TEUs.

Table 20. Jacksonville Harbor Top Caribbean Commodities Exported and Imported October 2007 - September 2008

Commodity	Exported TEUs	Exported TEUs %	Imported TEUs	Imported TEUs %
Foodstuffs	117,391	30.2%	14,331	17.3%
Miscellaneous	94,565	24.3%	7,625	9.2%
Chemicals	41,891	10.8%	19,101	23.1%
Forest Products	35,578	9.2%	7,552	9.1%
Machinery & Parts	14,356	3.7%	1,842	2.2%
Hardware	12,205	3.1%	4,387	5.3%
Electric Goods	12,174	3.1%	5,264	6.4%
Vehicles/Boats/Aircraft	10,595	2.7%	1,301	1.6%
Furniture/Toys/Sporting	8,671	2.2%	305	0.4%
Tires/Rubber	8,468	2.2%	4,999	6.0%
Instruments/Photo Goods	7,383	1.9%	6,629	8.0%
Minerals	6,727	1.7%	736	0.9%
Metals	6,458	1.7%	1,612	1.9%
Textiles	6,246	1.6%	2,226	2.7%
Footware/Gloves/Bags	3,098	0.8%	1,040	1.3%
Plastic Film/Sheets/Foam	1,893	0.5%	903	1.1%
Misc. Jewelry/Arts/Crafts	912	0.2%	164	0.2%
Ores	159	0.0%	2,815	3.4%
	388,770	100.0%	82,832	100.0%

Source: G.E.C., Inc., from PIERS data supplied by JaxPort.

[35] The period FY 2007/2008 was used rather than FY 2008/2009 because it did not include any of the new Asian services related to the NWA marine container facility development at Dames Point.

Table 21 contains the containerized cargo tonnages handled through Jax Port during the periods 2005-2006, 2006-2007, 2007-2008, and 2008-2009.[36] The period 2008-2009 will include some Asian cargo (refer to Table 1), reflecting container operations related to Dames Point development (TraPac). For preceding years before 2008-2009, the container cargo will exclude Dames Point developments and reflect the traditional Jax Port regional markets dominated by Caribbean (primarily Puerto Rico) and South America.[37]

Table 21 shows the total container calls at Jacksonville Harbor (refer to Table 8) for all services, including roll-on-roll-off (RoRo) and lift-on-lift-off (LoLo) for self-propelled vessels and barges.[38] The total containerized calls by all vessels were 824 for 2005-2006, 765 for 2006-2007, 786 for 2007-2008, and 833 for 2008-2009. The containerized cargo tons from Jax Port (refer to Table 8) were 4.075 million for 2005-2006, 3.638 million for 2006-2007, 3.600 million for 2007-2008, and 3.894 million for 2008-2009. These are converted to metric tonnes in Table 21 corresponding to 3.697 tonnes, 3.330 tonnes, 3.266, tones, and 3.533 tonnes, respectfully.

The container fleet calling Jacksonville Harbor for these periods is shown stratified by deadweight tonnes (dwt) in the categories of >50,000, >40,000 <50,000, >30,000 <40,000, >20,000 <30,000, and <20,000 for self-propelled vessels corresponding to a total of 358 calls in 2005, 330 total calls in 2006, 321 total calls in 2007, and 354 total calls in 2008. The total container tonnage for all vessels was apportioned between non-self-propelled and self-propelled in relation to the total number of annual calls by each. The resulting container tonnage for self-propelled vessels was calibrated to the dwt capacity of the container fleet. The calibration factors used produced good fits between vessel capacity and self-propelled container cargo apportioned from the total container cargo for the periods 2007 (1.318 million tonnes dwt total capacity versus 1.334 million tonnes of self-propelled container cargo tonnes) and 2008 (1.538 million tonnes dwt total capacity versus 1.501 million tonnes of self-propelled container cargo tonnes). The 2007 time frame was used as the basis for cargo and associated vessel projections other than Dames Point because it had no influence of Dames Point-related cargo developments after 2008.

The cargo vessel projections for without-project conditions are based on allocating a share of total self-propelled vessel container cargo to each vessel dwt category based on the relationship between capacity (dwt) and total tonnes of cargo. For the vessel categories, the following capacity (dwt) shares of total cargo tonnes were computed: >50,000 - 28.03 percent; >40,000 - 1.59 percent; >30,000 - 17.09 percent; >20,000 - 24.42 percent; and <20,000 - 28.97 percent.

The average shipment size for each vessel size category is computed by dividing the total annual capacity (dwt) by the total annual number of calls. For example, the >50,000 capacity (dwt) was 369,600 tonnes in 2007 that represented 44 calls for self-propelled container vessels

[36] Jax Port containerized cargo statistics used reflect that there are no competing public marine terminals other than Jax Port facilities in Jacksonville Harbor prior to 2009. Jax Port container cargo statistics after 2008 include the private terminal development at Dames Point (TraPac). There are no other private commercial marine terminals in Jacksonville Harbor capable of handling containerized cargo other than with special circumstances.

[37] MOL, the steamship line owner of TraPac, initiated weekly container service at Jax Port calling Blount Island in July 2008 as a precursor to calling the TraPac facility in January 2009.

[38] Domestic barge services characterize a large portion of the Puerto Rico traffic.

Table 21. Jacksonville Harbor Containerized Cargo Commodity Projections Excluding Dames Point: Future Without-Project and Future With-Project

Total Annual Containerized Calls by All Vessels and Jax Port Containerized Commodity Tons				
Year	Total Calls	STons (000)	Average	Mtons (000)
2005-2006	824	4,075	4,945	3,697
2006-2007	765	3,638	4,756	3,300
2007-2008	786	3,600	4,580	3,266
2008-2009	833	3,894	4,675	3,533

Total Annual Container Cargo Vessel Calls by Vessel Size (DWT)				
DWT	2005	2006	2007	2008
>50,000	42	42	44	72
>40,000	8	6	3	7
>30,000	20	26	46	83
>20,000	141	110	92	59
<20,000	147	146	136	133
Subtotal	358	330	321	354

Total Annual Container Cargo Self-Propelled Vessel Calls and Jax Port Containerized Commodity Tons				
Year	Total Calls	STons (000)	Average	Mtons (000)
2005-2006	358	1,770	4,945	1,606
2006-2007	330	1,569	4,756	1,424
2007-2008	321	1,470	4,580	1,334
2008-2009	354	1,655	4,675	1,501

Total Annual Container Cargo Vessel Capacity (DWT) Calls by Vessel Size				
DWT	2005	2006	2007	2008
>50,000	352,800	352,800	369,600	504,000
>40,000	56,000	42,000	21,000	49,000
>30,000	98,000	127,400	225,400	406,700
>20,000	493,500	385,000	322,000	206,500
<20,000	411,600	408,800	380,800	372,400
Subtotal	1,411,000	1,316,000	1,318,800	1,538,600

	Container Cargo	Growth Rates			DWT	>50,000	>40,000	>30,000	>20,000	<20,000
					DWT Share	28.03%	1.59%	17.09%	24.42%	28.87%
					Shipment Size	8,400	7,000	4,900	3,500	2,800
Year	Mtons (000)	Low	Medium	High	Total Calls					
2008	1,318	1.27	2.41	3.56	321	44	3	46	92	136
2009	1,350	1.27	2.41	3.56	329	45	3	47	94	139
2010	1,382	1.27	2.41	3.56	336	46	3	48	96	143
2011	1,416	1.27	2.41	3.56	345	47	3	49	99	146
2012	1,450	1.27	2.41	3.56	353	48	3	51	101	150
2013	1,485	1.27	2.41	3.56	361	50	3	52	104	153
2014	1,520	1.27	2.41	3.56	370	51	3	53	106	157
2015	1,557	1.27	2.41	3.56	379	52	4	54	109	161
2016	1,582	0.69	1.61	2.55	385	53	4	55	110	163
2017	1,608	0.69	1.61	2.55	391	54	4	56	112	166
2018	1,634	0.69	1.61	2.55	398	54	4	57	114	168
2019	1,660	0.69	1.61	2.55	404	55	4	58	116	171
2020	1,687	0.69	1.61	2.55	411	56	4	59	118	174
2021	1,709	0.42	1.34	2.31	416	57	4	60	119	176
2022	1,732	0.42	1.34	2.31	422	58	4	60	121	179
2023	1,755	0.42	1.34	2.31	427	59	4	61	122	181
2024	1,779	0.42	1.34	2.31	433	59	4	62	124	183
2025	1,803	0.42	1.34	2.31	439	60	4	63	126	186
2026	1,824	0.22	1.18	2.16	444	61	4	64	127	188
2027	1,845	0.22	1.18	2.16	449	62	4	64	129	190
2028	1,867	0.22	1.18	2.16	454	62	4	65	130	193
2029	1,889	0.22	1.18	2.16	460	63	4	66	132	195
2030	1,911	0.22	1.18	2.16	465	64	4	67	133	197
2031	1,934	0.22	1.18	2.16	471	65	4	67	135	199
2032	1,957	0.22	1.18	2.16	476	65	4	68	137	202
2033	1,980	0.22	1.18	2.16	482	66	5	69	138	204
2034	2,003	0.22	1.18	2.16	488	67	5	70	140	207
2035	2,027	0.22	1.18	2.16	493	68	5	71	141	209
2036	2,051	0.22	1.18	2.16	499	68	5	72	143	211
2037	2,075	0.22	1.18	2.16	505	69	5	72	145	214
2038	2,100	0.22	1.18	2.16	511	70	5	73	146	217
2039	2,124	0.22	1.18	2.16	517	71	5	74	148	219
2040	2,149	0.22	1.18	2.16	523	72	5	75	150	222
2041	2,175	0.22	1.18	2.16	529	73	5	76	152	224
2042	2,200	0.22	1.18	2.16	536	73	5	77	154	227
2043	2,226	0.22	1.18	2.16	542	74	5	78	155	230
2044	2,253	0.22	1.18	2.16	548	75	5	79	157	232
2045	2,279	0.22	1.18	2.16	555	76	5	80	159	235
2046	2,306	0.22	1.18	2.16	561	77	5	80	161	238
2047	2,333	0.22	1.18	2.16	568	78	5	81	163	241
2048	2,361	0.22	1.18	2.16	575	79	5	82	165	243
2049	2,389	0.22	1.18	2.16	581	80	5	83	167	246
2050	2,417	0.22	1.18	2.16	588	81	5	84	169	249
2051	2,445	0.22	1.18	2.16	595	82	6	85	171	252
2052	2,474	0.22	1.18	2.16	602	83	6	86	173	255
2053	2,504	0.22	1.18	2.16	609	84	6	87	175	258
2054	2,533	0.22	1.18	2.16	617	85	6	88	177	261
2055	2,563	0.22	1.18	2.16	624	86	6	89	179	264
2056	2,593	0.22	1.18	2.16	631	87	6	90	181	267
2057	2,624	0.22	1.18	2.16	639	88	6	92	183	271
2058	2,655	0.22	1.18	2.16	646	89	6	93	185	274
2059	2,686	0.22	1.18	2.16	654	90	6	94	187	277
2060	2,718	0.22	1.18	2.16	662	91	6	95	190	280
2061	2,750	0.22	1.18	2.16	669	92	6	96	192	284
2062	2,782	0.22	1.18	2.16	677	93	6	97	194	287
2063	2,815	0.22	1.18	2.16	685	94	6	98	196	290
2064	2,848	0.22	1.18	2.16	693	95	6	99	199	294

Notes: Calls = total annual number of vessels for containerized cargo at Jacksonville Harbor.
STons = total calendar year Jax Port containerized cargo short tons.
Average = average containerized cargo short tons per vessel call.
Mtons = total calendar year Jax Port containerized cargo metric tons.
DWT = deadweight cargo capacity of vessels.
Capacity = Total DWT applied to each vessel category and annual calls.
Growth Rates = Hinterland population projections.
DWT Share = Share of total annual commodity tons carried on each vessel size category.
Shipment Size = Estimated average shipment size for each vessel size category.

Source: GEC, Inc.

>50,000 dwt. The average shipment size would be 8,400 tonnes (369,600 capacity tonnes/44 calls = 8,400 tonnes).[39] The average shipment sizes for the other capacity (dwt) categories correspond to the typical range such as 7,000 tonnes for the category >40,000 <50,000, 4,900 tonnes for the category >30,000 <40,000, 3,500 tonnes for the category >20,000 <30,000, and 2,800 tonnes for the category <20,000.

The base year container fleet that called Jacksonville Harbor exclusive of Dames Point (2008-2009) shown for 2008 is 89 calls >50,000 dwt, 45 calls >40,000 dwt, 14 calls >30,000 dwt, two calls >20,000 dwt, and four calls <20,000 dwt. These calls are projected based on the medium growth in population for the container cargo tonnes for the period 2009 through 2064 for without-project conditions.

4.3.6 Dames Point Containerized Cargo

Dames Point containerized cargo is similar to the cargo base handled at Savannah Harbor as reported by the lines calling there who are now calling Dames Point (MOL/NWA) or expect to develop facilities at Dames Point and call there (Hanjin/CKYH). Table 22 identifies the share of the major commodity groups (PIERS) of the current (MOL/NWA) and prospective (Hanjin/CKYH) Dames Point carriers handled at Savannah Harbor that would be likely candidates for shifting to Jacksonville Harbor. The consumer goods orientation is noted for the dominance of the "Miscellaneous" category for imports, comprising 55 percent of total loaded import boxes. Together, the categories of Miscellaneous and Furnishings account for 75 percent of total import boxes. Exports are likewise centered on the two categories of Miscellaneous and Forest Products that together comprise two-thirds (66 percent) of total loaded export boxes.

Table 22. Dames Point Container Lines Hinterland Box Volume at Savannah Harbor by Commodity and Direction

Commodity Group (PIERS)	Total Loaded Import	Total Loaded Export
Foodstuffs	1%	5%
Forest Products	2%	18%
Textiles	8%	6%
Chemicals & Plastics	3%	10%
Non-Metallic Minerals	0%	1%
Ores & Metals	2%	3%
Metal Products & Machinery	6%	9%
Electronic & Instruments	3%	1%
Furnishings	20%	0%
Miscellaneous & Other	55%	48%
Total	100%	100%

Notes: Total Loaded Import = Total Loaded Import Boxes.
Total Loaded Export = Total Loaded Export Boxes.

Source: G.E.C., Inc.

[39] Typically, container vessels that are self-propelled make multiple port calls, particularly for the larger vessels transferring a portion of vessel capacity at each port.

Table 23 compiles the container volumes (loaded boxes) processed at the TraPac terminal in 2010 based on 47,437 loaded box moves. Loaded TEUs handled at TraPac for 2010 are estimated to be 85,387 by converting box moves to TEUs. TEUs are converted to containerized cargo tons using an average of 7.71 short cargo (net) tons per TEU at Jacksonville Harbor for FY 2008/2009. Jax Port reported that it handled a total of 376,235 containers in FY 2008/2009 of which 250,534 were loaded (refer to Table 8). The loaded proportion of total containers is two-thirds or 67 percent (250,534/376,235 = 0.67). During FY 2008/2009, Jax Port reported a total of 754,352 TEUs (refer to Table 8). Two-thirds (67 percent) of the total TEUs is 505,416 (754,352 * 0.67 = 505,416) TEUs. The average total cargo weight is estimated to be 7.71 short tons per loaded TEU (3,894,595 container cargo tons/505,416 loaded TEUs = 7.71 short tons per TEU). Loaded moves are expressed as total moves to include empty boxes that are assumed for only exports. For MOL/NWA, the TraPac facility in 2010 is projected to handle a total of 57,500 moves of both loaded and empty boxes.

Dames Point container cargo tons for 2010 are estimated to be 658,331 based on 85,387 loaded TEUs multiplied by an average of 7.71 short tons per TEU. The Dames Point containerized cargo tons for 2011 and ensuing years are increased by the projected growth in the north Florida hinterland population (refer to Table 11). Containerized cargo tons increase from 658,331 in 2010 to 1,340,727 in 2064.

Table 23 presents estimates of the containerized cargo tons for prospective Dames Point container terminal development by Hanjin and the associated CKYH alliance carriers. The CKYH estimated baseline volume is nearly double that of MOL/NWA, 99,617 loaded moves for the local hinterland that are not currently handled at Jacksonville Harbor. The base line 2010 loaded box moves are converted to TEUs and short tons similar to the MOL/NWA counterparts. The CKYH base line 2010 container TEUs and cargo tons are shown to be 179,311 and 1,382,488, respectively. Applying local area population growth rates increases the container tons to 2,815,514 by 2064. The CKYH terminal is presumed to be operational by year 2015, which would have 201,985 loaded TEUs and 1,557,303 containerized cargo tons.

Jacksonville Harbor has experienced continued commodity growth, which can be attributed in part to the expansion of distribution centers in Northeast Florida. Currently, there is approximately 69.4 million square feet of existing distribution space in Northeast Florida with an additional 15 million square feet of space planned for development. These distribution centers are being built because of the proximity to road, rail, and waterborne transportation infra-structure. These distribution centers are located throughout Northeast Florida but do extend as far south as Tampa and Orlando. The areas of greater Orlando (population >2.0 million) and greater Tampa Bay (population >4.0 million) are sufficiently large that distributors have local warehouses in close proximity to these areas. Jacksonville can serve these markets directly through the local distribution centers. The distribution centers at Jacksonville are being built primarily by large retailers to accommodate cargo being handled by new direct container ship service between Jacksonville and ports throughout Asia.

More than 150 companies currently have distribution centers in the Jacksonville area, and with the expected growth more than 24 million square feet of industrial space has recently opened or is planned to open in the short term. It is expected that the large retailers that do not currently

Table 23. Dames Point Global Marine Container Terminal Projected Container Cargo Throughput: Future Without-Project and Future With-Project

Year	TraPac/NWA Loaded Moves	TraPac/NWA Loaded TEU	TraPac/NWA Loaded Tons	TraPac/NWA Total Moves	Hanjin/CKYH Loaded Moves	Hanjin/CKYH Loaded TEU	Hanjin/CKYH Loaded Tons	Hanjin/CKYH Total Moves
2010	47,437	85,387	658,331	57,500	99,617	179,311	1,382,488	120,749
2011	48,580	87,444	674,196	58,886	102,018	183,632	1,415,806	123,660
2012	49,751	89,552	690,445	60,305	104,477	188,058	1,449,927	126,640
2013	50,950	91,710	707,084	61,758	106,995	192,590	1,484,870	129,692
2014	52,178	93,920	724,125	63,247	109,573	197,232	1,520,656	132,817
2015	53,435	96,184	741,576	64,771	112,214	201,985	1,557,303	136,018
2016	54,296	97,732	753,516	66,332	114,020	205,237	1,582,376	139,296
2017	55,170	99,306	765,647	67,930	115,856	208,541	1,607,852	142,653
2018	56,058	100,905	777,974	69,568	117,721	211,899	1,633,739	146,091
2019	56,961	102,529	790,500	71,244	119,617	215,310	1,660,042	149,612
2020	57,878	104,180	803,227	72,961	121,543	218,777	1,686,769	153,218
2021	58,653	105,576	813,990	74,719	123,171	221,708	1,709,371	156,910
2022	59,439	106,991	824,897	76,520	124,822	224,679	1,732,277	160,692
2023	60,236	108,424	835,951	78,364	126,494	227,690	1,755,489	164,564
2024	61,043	109,877	847,153	80,253	128,189	230,741	1,779,013	168,530
2025	61,861	111,350	858,505	82,187	129,907	233,833	1,802,852	172,592
2026	62,591	112,663	868,635	84,168	131,440	236,592	1,824,125	176,751
2027	63,329	113,993	878,885	86,196	132,991	239,384	1,845,650	181,011
2028	64,077	115,338	889,256	88,274	134,560	242,209	1,867,429	185,374
2029	64,833	116,699	899,749	90,401	136,148	245,067	1,889,464	189,841
2030	65,598	118,076	910,366	92,580	137,755	247,958	1,911,760	194,416
2031	66,372	119,469	921,108	94,811	139,380	250,884	1,934,319	199,102
2032	67,155	120,879	931,977	97,096	141,025	253,845	1,957,144	203,900
2034	67,947	122,305	942,975	99,436	142,689	256,840	1,980,238	208,814
2035	68,749	123,749	954,102	101,832	144,373	259,871	2,003,605	213,846
2036	69,560	125,209	965,360	104,286	146,076	262,937	2,027,247	219,000
2037	70,381	126,686	976,752	106,800	147,800	266,040	2,051,169	224,278
2038	71,212	128,181	988,277	109,373	149,544	269,179	2,075,373	229,683
2039	72,052	129,694	999,939	112,009	151,309	272,356	2,099,862	235,218
2040	72,902	131,224	1,011,738	114,709	153,094	275,569	2,124,640	240,887
2041	73,763	132,773	1,023,677	117,473	154,901	278,821	2,149,711	246,693
2042	74,633	134,339	1,035,756	120,304	156,728	282,111	2,175,078	252,638
2043	75,514	135,925	1,047,978	123,204	158,578	285,440	2,200,744	258,726
2044	76,405	137,528	1,060,344	126,173	160,449	288,808	2,226,712	264,962
2045	77,306	139,151	1,072,856	129,214	162,342	292,216	2,252,988	271,347
2046	78,218	140,793	1,085,516	132,328	164,258	295,664	2,279,573	277,887
2047	79,141	142,455	1,098,325	135,517	166,196	299,153	2,306,472	284,584
2048	80,075	144,136	1,111,285	138,783	168,157	302,683	2,333,688	291,442
2049	81,020	145,836	1,124,398	142,127	170,142	306,255	2,361,226	298,466
2050	81,976	147,557	1,137,666	145,553	172,149	309,869	2,389,088	305,659
2051	82,944	149,298	1,151,091	149,060	174,181	313,525	2,417,280	313,026
2052	83,922	151,060	1,164,674	152,653	176,236	317,225	2,445,803	320,569
2053	84,913	152,843	1,178,417	156,332	178,316	320,968	2,474,664	328,295
2054	85,915	154,646	1,192,322	160,099	180,420	324,756	2,503,865	336,207
2055	86,928	156,471	1,206,391	163,958	182,549	328,588	2,533,411	344,310
2056	87,954	158,317	1,220,627	167,909	184,703	332,465	2,563,305	352,608
2057	88,992	160,186	1,235,030	171,956	186,882	336,388	2,593,552	361,105
2058	90,042	162,076	1,249,604	176,100	189,087	340,357	2,624,156	369,808
2059	91,105	163,988	1,264,349	180,344	191,319	344,374	2,655,121	378,720
2060	92,180	165,923	1,279,268	184,690	193,576	348,437	2,686,451	387,848
2061	93,267	167,881	1,294,364	189,141	195,860	352,549	2,718,151	397,195
2062	94,368	169,862	1,309,637	193,700	198,172	356,709	2,750,225	406,767
2063	95,481	171,867	1,325,091	198,368	200,510	360,918	2,782,678	416,570
2064	96,608	173,895	1,340,727	203,148	202,876	365,177	2,815,514	426,610

Notes: Assumes average average annual projected population growth 2010-2030.
NWA = New World Alliance carriers.
CKYH = CKYH alliance carriers.
TraPac = Dames Point marine container terminal annual loaded boxes operated by TraPac for NWA.
Hanjin = Dames Point planned marine container terminal annual boxes operated by Hanjin for CKYH.
Loaded Moves = loaded box moves based on full imports and 2/3 full exports.
Loaded TEU = 80% of Loaded Moves * 2 + 20% of Loaded Moves * 1 to reflect preponderance of 40-ft. boxes.
Loaded Tons = 7.71 tons per TEU.
Total Moves = imports plus loaded and empty exports.
Dames Point Hanjin Marine Container Terminal assumed operational by 2015.

Source: G.E.C., Inc.

have distribution centers in Jacksonville will choose to in the future given the addition of Far East services calling Jacksonville Harbor.

5.0 DETERMINE VESSEL FLEET COMPOSITION AND COST

5.1 VESSEL ANALYSIS DATA

The basic input for the Jacksonville Harbor vessel fleet analysis pertinent to Mile Point is the vessel call information compiled by the Pilots and provided by Jax Port. The vessel call data identify the name and vessel identification number (VIN) for all vessels handled by the Pilots. The vessel call data exclude any vessels not handled by Pilots, such as U.S. flag tug barges that regularly call the Port and the Captain serves as pilot. Three years of information on Pilots vessels were received from the St. Johns Bar Pilot Association for the period March 2005 through April 2008, which was subsequently updated to include one additional year, April 2008 through March 2009, as part of the revision of the February 12, 2009, draft report analyses. The data were segmented into four 12-month periods from March 2005 to March 2006, March 2006 to March 2007, March 2007 to March 2008 and subsequently updated with data for the period March 2008 to March 2009.

The vessel names and/or VIN were used to match the Pilots data on vessel arrivals and departures with Lloyds Fairplay vessel characteristics (dwt, dimensions, etc.). A very small number of vessels could not be identified because of missing or incorrect VIN and vessel names that did not match with Lloyds. All vessel physical data other than operational characteristics relative to particular calls such as sailing draft are taken from Lloyds, such as Length Overall (Loa) and maximum draft (draught), as well as measures of capacity such as dwt.[40]

5.2 METHODOLOGY

The Pilots data were sorted for four 12-month periods beginning and ending in March for the years 2005-2006, 2006-2007, 2007-2008, and 2008-2009 (which was done because the Pilots data was originally received in April 2008 for the most recent month). The Mile Point draft impacted fleet was compiled by ship type. The ship types were aggregated into general vessel categories. Detailed analyses were made of the sailing drafts and dwt distributions of the general vessel categories for the four years to arrive at a base year vessel fleet affected by Mile Point tidal restrictions. The affected vessel fleet categories in terms of sizes (dwt) and sailing drafts were used to update the existing (2005) vessel call list in the Mile Point spreadsheet received from the District.

[40] All vessel dimensional units will be in feet other than deadweight tonnes (metric).

5.3 VESSELS

5.3.1 Vessel Calls and Mile Point Impacts

Table 24 lists the number of vessel calls (arrivals and departures) by ship type for the three years of Pilots data for Jacksonville Harbor.[41] Each vessel call generally represents an arrival and a departure, effectively counting the same vessel two times due to pilotage movements inbound and outbound. The same vessel is not counted twice within a particular time period when its arrival and departure occur in different periods. However, a reasonably complete record of vessel movements inbound and outbound should be relatively equal between the total numbers of arriving and departing vessels. The largest numbers of vessel calls by ship type in Table 24 are for bulk cargo (including self-unloading), tankers, container vessels, general cargo, passenger cruise, Ro-Ro vessels, and vehicle carriers.

During the three 12-month periods, the total numbers of piloted vessel movements remained relatively constant, at 4,125 in 2005-2006, 4,295 in 2006-2007, 4,188 in 2007-2008, and 4,370 in 2008-2009. There were generally small changes in the numbers of particular ship type movements with some modest growth such as container vessels since the 2008-2009 data will reflect the initiation of service by MOL at Blount Island in July 2008 and services calling TraPac commencing in January 2009 through March 2009.

Table 25 shows the inbound arrivals by vessel type for the three 12-month periods, as well as the number of calls that were Mile Point tidal constrained (sailing drafts >33 feet). During the four years, total inbound vessel arrivals reported by the Pilots logs ranged from 1,911 (2007-2008) to 1,986 (2008-2009). The Mile Point tidal delayed arrivals (>33 feet sailing draft) were 341 in 2005-2006, 358 in 2006-2007, 378 in 2007-2008, and 360 in 2008-2009. The Mile Point arrival tidal delays were concentrated in liquid and dry bulk vessels. During the period 2007-2008, for example, 68 bulk carriers, 65 chemical products tankers, 56 self-discharging bulk carriers, 48 products tankers, 42 general cargo, 25 container vessels, 22 crude oil/products tankers, and 20 open hatch cargo ships accounted for a total of 346 for the 378 Mile Point tidal delayed vessel calls.

Table 26 shows the outbound departures by vessel type for the three 12-month periods, as well as the number of calls that were Mile Point tidal constrained (sailing drafts >36 feet). During the four years, total outbound vessel departures reported by the Pilots logs ranged from 1,883 (2007-2008) to 1,975 (2006-2007). The Mile Point tidal delayed departures (>36 feet sailing draft) were 13 in 2005-2006, 22 in 2006-2007, 16 in 2007-2008, and 14 in 2008-2009. The Mile Point departure tidal delays were concentrated in container vessels (11), open hatch (general) cargo ships (three), and general cargo vessels (two) for 2007-2008 and in container vessels (five), for 2008-2009.

[41] Table 13 data are taken from all of the pilots' directed movements of vessels at Jacksonville Harbor, including internal harbor shifts. The all-inclusive data of pilot directed movements reflect inbound, outbound, and internal harbor shifts of vessels.

Table 24. Jacksonville Harbor Total Annual Vessel Calls by Vessel Type

Ship Type	Year			
	2005-2006	2006-2007	2007-2008	2008-2009
Anchor Handling Tug Supply	21	16	31	17
Asphalt/Bitumen Tanker	12	20	3	0
Bulk Cargo Carrier, self discharging	176	172	151	198
Bulk Carrier	204	245	176	129
Bulk/Oil Carrier (OBO)	0	6	2	0
Bulk Carrier (with Vehicle Decks)	2	0	0	0
Buoy & Lighthouse Tender	2	0	0	3
Cement Carrier	20	4	0	0
Chemical Tanker	26	25	11	18
Chemical/Products Tanker	314	307	302	323
Container Ship (Fully Cellular with Ro-Ro Facility	20	8	2	0
Container Ship (Fully Cellular)	707	668	648	723
Crude Oil Tanker	49	19	35	21
Crude Oil/Products Tanker	64	78	79	65
Deck Cargo Pontoon, semi submersible	35	32	24	7
Fish Carrier	47	23	10	4
Fishing Vessel	0	2	0	0
General Cargo Barge, non propelled	76	82	75	110
General Cargo Ship	441	429	382	392
General Cargo Ship (with Ro-Ro Facility)	20	9	0	2
Heavy Load Carrier	15	2	0	17
Hopper, Motor	25	44	68	0
Hopper/Suction Dredger	11	6	3	0
Landing Craft	0	2	16	3
LPG Tanker	0	0	0	11
Logistics Vessel (Naval Ro-Ro Cargo)	58	29	19	43
Offshore Tug/Supply Ship	4	4	0	2
Open Hatch Cargo Ship	10	43	54	37
Palletised Cargo Ship				4
Passenger Ship	4	8	3	0
Passenger Ship, Inland Waterways	1	0	0	0
Passenger/Cruise	160	160	164	96
Passenger/Ro-Ro Ship (Vehicles)	0	12	7	11
Pipe Layer Crane Vessel	0	0	2	8
Platform Supply Ship	22	37	14	41
Pollution Control Vessel	2	0	0	0
Products Tank Barge, non propelled	12	30	49	71
Products Tanker	183	205	225	161
Pusher Tug	89	50	59	108
Refrigerated Cargo Ship	14	23	29	35
Replenishment Tanker	18	27	27	27
Research Survey Vessel	3	3	2	2
Ro-Ro Cargo Ship	219	289	282	285
Sail Training Ship	0	2	0	0
Salvage Ship	0	4	0	0
Search & Rescue Vessel	0	0	2	0
Standby Safety Vessel	3	0	0	0
Tanker (unspecified)	3	6	6	4
Towing/Pushing, Inland Waterways	3	0	0	0
Tug	142	133	183	218
Vehicle Carrier	842	987	1,000	1,123
Yacht	46	44	43	51
Subtotal	4,125	4,295	4,188	4,370

Note: Total annual vessel calls include inbound, outbound, and internal movements within the harbor as reported by the Pilots' logs.

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008 and November 2009.

Table 25. Jacksonville Harbor Total Annual Vessel Calls by Vessel Type Inbound

Ship Type	March 2005-2006	March 2005-2006 Over 33 ft	March 2006-2007	March 2006-2007 Over 33 ft	March 2007-2008	March 2007-2008 Over 33 ft	March 2008-2009	March 2008-2009 Over 33 ft
Anchor Handling Tug Supply	9	1	8	1	14	6	8	3
Asphalt/Bitumen Tanker	5	2	10	3	1	0	0	0
Bulk Cargo Carrier, self discharging	87	71	83	64	73	56	93	81
Bulk Carrier	100	57	112	64	80	68	61	51
Bulk/Oil Carrier (OBO)	0	0	3	3	1	1	0	0
Bulk Carrier (with Vehicle Decks)	1	1	0	0	0	0	0	0
Buoy & Lighthouse Tender	1	0	0	0	0	0	1	0
Cement Carrier	10	0	2	0	0	0	0	0
Chemical Tanker	13	1	12	5	6	1	9	6
Chemical/Products Tanker	136	63	133	62	125	65	141	64
Container Ship (Fully Cellular with Ro-Ro Facility)	10	1	4	0	0	0	0	0
Container Ship (Fully Cellular)	350	18	326	15	321	25	354	43
Crude Oil Tanker	22	13	9	4	17	11	10	5
Crude Oil/Products Tanker	29	10	38	23	35	22	28	18
Deck Cargo Pontoon, semi submersible	0	0	0	0	0	0	0	0
Fish Carrier	23	0	11	0	5	0	2	0
Fishing Vessel	0	0	1	0	0	0	0	0
General Cargo Barge, non propelled	0	0	0	0	0	0	1	0
General Cargo Ship	217	35	205	37	182	42	190	25
General Cargo Ship (with Ro-Ro Facility)	9	0	4	0	0	0	1	0
Heavy Load Carrier	7	4	1	1	0	0	4	0
Hopper, Motor	12	0	22	0	31	0	0	0
Hopper/Suction Dredger	5	0	2	0	3	0	0	0
Landing Craft	0	0	1	0	3	0	2	0
Logistics Vessel (Naval Ro-Ro Cargo)	28	3	14	1	9	3	17	3
LPG Tanker	0	0	0	0	0	0	5	1
Offshore Tug/Supply Ship	1	0	0	0	0	0	1	0
Open Hatch Cargo Ship	5	0	20	17	26	20	17	15
Palletised Cargo Ship	0	0	0	0	0	0	1	0
Passenger Ship	2	0	2	0	1	0	0	0
Passenger Ship, Inland Waterways	0	0	0	0	0	0	0	0
Passenger/Cruise	80	0	80	0	80	0	48	0
Passenger/Ro-Ro Ship (Vehicles)	0	0	5	1	3	0	4	0
Pipe Layer Crane Vessel	0	0	0	0	0	0	0	0
Platform Supply Ship	11	0	14	0	7	0	15	0
Pollution Control Vessel	1	0	0	0	0	0	0	0
Products Tank Barge, non propelled	0	0	0	0	0	0	1	0
Products Tanker	83	48	88	39	92	48	72	33
Pusher Tug	42	4	23	2	30	2	52	1
Refrigerated Cargo Ship	7	1	12	1	14	0	17	0
Replenishment Tanker	9	7	13	9	13	7	13	7
Research Survey Vessel	2	0	0	0	1	0	1	0
Ro-Ro Cargo Ship	109	0	141	1	136	0	136	2
Sail Training Ship	0	0	1	0	0	0	0	0
Salvage Ship	1	0	2	0	0	0	0	0
Search & Rescue Vessel	0	0	0	0	1	0	0	0
Standby Safety Vessel	0	0	0	0	0	0	0	0
Tanker (unspecified)	1	1	3	2	3	0	2	1
Towing/Pushing, Inland Waterways	1	0	0	0	0	0	0	0
Tug	69	0	58	2	88	0	114	0
Vehicle Carrier	416	0	484	1	492	1	549	1
Yacht	18	0	16	0	18	0	16	0
Total	1,932	341	1,963	358	1,911	378	1,986	360

Note: The inbound movements exclude all outbound and internal movements as reported by the Pilots' Logs.

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008 and November 2009.

Table 26. Jacksonville Harbor Total Annual Vessel Calls by Vessel Type Outbound

Ship Type	March 2005-2006	March 2005-2006 Over 36 ft	March 2006-2007	March 2006-2007 Over 36 ft	March 2007-2008	March 2007-2008 Over 36 ft	March 2008-2009	March 2008-2009 Over 36 ft
Anchor Handling Tug Supply	9	0	8	1	13	0	9	0
Asphalt/Bitumen Tanker	6	1	10	1	1	0	0	0
Bulk Cargo Carrier, self discharging	85	0	85	0	72	0	93	0
Bulk Carrier	100	0	111	0	82	0	62	2
Bulk/Oil Carrier (OBO)	0	0	3	0	1	0	0	0
Bulk Carrier (with Vehicle Decks)	1	0	0	0	0	0	0	0
Buoy & Lighthouse Tender	1	0	0	0	0	0	1	0
Cement Carrier	10	0	2	0	0	0	0	0
Chemical Tanker	13	0	12	0	5	0	9	0
Chemical/Products Tanker	135	0	131	0	127	0	140	1
Container Ship (Fully Cellular with Ro-Ro Facility)	10	0	4	0	1	0	0	0
Container Ship (Fully Cellular)	348	9	328	13	322	11	353	5
Crude Oil Tanker	22	0	9	0	17	0	10	0
Crude Oil/Products Tanker	29	0	38	1	35	0	27	3
Deck Cargo Pontoon, semi submersible	0	0	0	0	0	0	0	0
Fish Carrier	22	0	12	0	5	0	2	0
Fishing Vessel	0	0	0	0	0	0	0	0
General Cargo Barge, non propelled	0	0	0	0	0	0	0	0
General Cargo Ship	216	3	207	4	179	2	191	2
General Cargo Ship (with Ro-Ro Facility)	9	0	4	0	0	0	1	0
Heavy Load Carrier	7	0	1	0	0	0	4	0
Hopper, Motor	12	0	22	0	31	0	0	0
Hopper/Suction Dredger	3	0	3	0	0	0	0	0
Landing Craft	0	0	1	0	6	0	1	0
Logistics Vessel (Naval Ro-Ro Cargo)	28	0	15	0	9	0	18	0
LPG Tanker	0	0	0	0	0	0	5	0
Offshore Tug/Supply Ship	1	0	0	0	0	0	1	0
Open Hatch Cargo Ship	5	0	20	1	25	3	18	1
Palletised Cargo Ship	0	0	0	0	0	0	1	0
Passenger Ship	0	0	2	0	1	0	0	0
Passenger Ship, Inland Waterways	0	0	0	0	0	0	0	0
Passenger/Cruise	0	0	80	0	80	0	47	0
Passenger/Ro-Ro Ship (Vehicles)	0	0	5	0	4	0	5	0
Pipe Layer Crane Vessel	0	0	0	0	0	0	0	0
Platform Supply Ship	0	0	16	0	6	0	18	0
Pollution Control Vessel	0	0	0	0	0	0	0	0
Products Tank Barge, non propelled	0	0	0	0	0	0	1	0
Products Tanker	0	0	90	1	92	0	71	0
Pusher Tug	0	0	24	0	28	0	52	0
Refrigerated Cargo Ship	0	0	11	0	15	0	17	0
Replenishment Tanker	0	0	13	0	13	0	13	0
Research Survey Vessel	0	0	0	0	1	0	1	0
Ro-Ro Cargo Ship	0	0	142	0	135	0	139	0
Sail Training Ship	0	0	1	0	0	0	0	0
Salvage Ship	0	0	2	0	0	0	0	0
Search & Rescue Vessel	0	0	0	0	1	0	0	0
Standby Safety Vessel	0	0	0	0	0	0	0	0
Tanker (unspecified)	0	0	3	0	3	0	2	0
Towing/Pushing, Inland Waterways	0	0	0	0	0	0	0	0
Tug	0	0	58	0	64	0	80	0
Vehicle Carrier	0	0	485	0	489	0	551	0
Yacht	0	0	17	0	20	0	19	0
Total	1,911	13	1,975	22	1,883	16	1,962	14

Note: The outbound movements exclude all inbound and internal movements as reported by the Pilots' Logs.

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008 and November 2009.

Table 27 compares the number of arrivals (inbound) and departures (outbound) for the vessel types for the four 12-month periods. In general, vessel arrivals and departures for any given time period should be similar. For 2005-2006, recorded total arrivals are 1,932 and recorded total departures are 1,911, with a difference of 21 movements. For 2006-2007, recorded total arrivals are 1,963 and recorded total departures are 1,975, with a difference of 12 movements. For 2007-2008, recorded total arrivals are 1,911 and recorded total departures are 1,883, with a difference of 28 movements. For 2008-2009, recorded total arrivals are 1,986 and recorded total departures

are 1,962, with a difference of 24 movements. Nearly all of the higher arrivals for 2007-2008 and 2008-2009 are recorded for tugs, which are not always reported for pilotage purposes. The comparative data for total arrivals and departures by vessel type suggest that the Pilots data are reasonably robust with respect to coverage of inbound and outbound vessel movements under their jurisdiction.

Table 27. Jacksonville Harbor Difference Between Annual Total Vessel Calls by Vessel Type Inbound and Outbound

Ship Type	Inbound March 2005-2006	Outbound March 2005-2006	Difference	Inbound March 2006-2007	Outbound March 2006-2007	Difference	Inbound March 2007-2008	Outbound March 2007-2008	Difference	Inbound March 2008-2009	Outbound March 2008-2009	Difference
Anchor Handling Tug Supply	9	9	0	8	8	0	14	13	1	8	9	-1
Asphalt/Bitumen Tanker	5	6	-1	10	10	0	1	1	0	0	0	0
Bulk Cargo Carrier, self discharging	87	85	2	83	85	-2	73	72	1	93	93	0
Bulk Carrier	100	100	0	112	111	1	80	82	-2	61	62	-1
Bulk/Oil Carrier (OBO)	0	0	0	3	3	0	1	1	0	0	0	0
Bulk Carrier (with Vehicle Decks)	1	1	0	0	0	0	0	0	0	0	0	0
Buoy & Lighthouse Tender	1	1	0	0	0	0	0	0	0	1	1	0
Cement Carrier	10	10	0	2	2	0	0	0	0	0	0	0
Chemical Tanker	13	13	0	12	12	0	6	5	1	9	9	0
Chemical/Products Tanker	136	135	1	133	131	2	125	127	-2	141	140	1
Container Ship (Fully Cellular with Ro-Ro	10	10	0	4	4	0	0	1	-1	0	0	0
Container Ship (Fully Cellular)	350	348	2	326	328	-2	321	322	-1	354	353	1
Crude Oil Tanker	22	22	0	9	9	0	17	17	0	10	10	0
Crude Oil/Products Tanker	29	29	0	38	38	0	35	35	0	28	27	1
Deck Cargo Pontoon, semi submersible	0	0	0	0	0	0	0	0	0	0	0	0
Fish Carrier	23	22	1	11	12	-1	5	5	0	2	2	0
Fishing Vessel	0	0	0	1	0	1	0	0	0	0	0	0
General Cargo Barge, non propelled	0	0	0	0	0	0	0	0	0	1	0	1
General Cargo Ship	217	216	1	205	207	-2	182	179	3	190	191	-1
General Cargo Ship (with Ro-Ro Facility)	9	9	0	4	4	0	0	0	0	1	1	0
Heavy Load Carrier	7	7	0	1	1	0	0	0	0	4	4	0
Hopper, Motor	12	12	0	22	22	0	31	31	0	0	0	0
Hopper/Suction Dredger	5	3	2	2	3	-1	3	0	3	0	0	0
Landing Craft	0	0	0	1	1	0	3	6	-3	2	1	1
Logistics Vessel (Naval Ro-Ro Cargo)	28	28	0	14	15	-1	9	9	0	17	18	-1
LPG Tanker			0	0	0	0	0	0	0	5	5	0
Offshore Tug/Supply Ship	1	1	0	0	0	0	0	0	0	1	1	0
Open Hatch Cargo Ship	5	5	0	20	20	0	26	25	1	17	18	-1
Palletised Cargo Ship			0	0	0	0	0	0	0	1	1	0
Passenger Ship	2	2	0	2	2	0	1	1	0	0	0	0
Passenger Ship, Inland Waterways	0	1	-1	0	0	0	0	0	0	0	0	0
Passenger/Cruise	80	80	0	80	80	0	80	80	0	48	47	1
Passenger/Ro-Ro Ship (Vehicles)	0	0	0	5	5	0	3	4	-1	4	5	-1
Pipe Layer Crane Vessel	0	0	0	0	0	0	0	0	0	0	0	0
Platform Supply Ship	11	11	0	14	16	-2	7	6	1	15	18	-3
Pollution Control Vessel	1	1	0	0	0	0	0	0	0	0	0	0
Products Tank Barge, non propelled	0	0	0	0	0	0	0	0	0	1	1	0
Products Tanker	83	81	2	88	90	-2	92	92	0	72	71	1
Pusher Tug	42	42	0	23	24	-1	30	28	2	52	52	0
Refrigerated Cargo Ship	7	7	0	12	11	1	14	15	-1	17	17	0
Replenishment Tanker	9	9	0	13	13	0	13	13	0	13	13	0
Research Survey Vessel	2	0	2	0	0	0	1	1	0	1	1	0
Ro-Ro Cargo Ship	109	108	1	141	142	-1	136	135	1	136	139	-3
Sail Training Ship	0	0	0	1	1	0	0	0	0	0	0	0
Salvage Ship	1	0	1	2	2	0	6	0	0	0	0	0
Search & Rescue Vessel	0	0	0	0	0	0	1	1	0	0	0	0
Standby Safety Vessel	0	1	-1	0	0	0	0	0	0	0	0	0
Tanker (unspecified)	1	1	0	3	3	0	3	3	0	2	2	0
Towing/Pushing, Inland Waterways	1	1	0	0	0	0	0	0	0	0	0	0
Tug	69	62	7	58	58	0	88	64	24	114	80	34
Vehicle Carrier	416	415	1	484	485	-1	492	489	3	549	551	-2
Yacht	18	17	1	16	17	-1	18	20	-2	16	19	-3
Total	1,932	1,911	21	1,963	1,975	-12	1,911	1,883	28	1,986	1,962	24

Source: GEC, Inc., from data supplied by St. Johns Bar Pilot Association, April 2008 and November 2009.

Tables 28, 29, 30 and 31 show the reported inbound sailing drafts for foreign and U.S. flag (domestic) vessels for the largest number of calls by vessel type (refer to Table 24 for bulk cargo self-unloading, bulk cargo, container ship, general cargo, passenger/cruise, Ro-Ro, tankers, and

Table 28. Jacksonville Harbor Total Annual Vessel Calls by Sailing Draft Inbound for Major Vessel Types, 2005-2006

FOREIGN/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	5	11	0	0	0	0	0	0	16
39	1	3	0	0	0	0	0	0	4
38	15	6	1	0	0	0	35	0	57
37	10	15	0	0	0	0	30	0	55
36	14	17	0	6	0	0	19	0	56
35	7	0	0	6	0	0	13	0	26
34	1	2	3	10	0	0	17	0	33
33	17	3	15	13	0	0	9	0	57
32	6	3	12	6	0	1	21	3	52
31	6	5	11	4	0	0	15	14	55
30	1	4	6	4	0	4	16	31	66
29	1	4	2	2	0	14	15	69	107
28	1	2	4	0	0	52	14	91	164
27	0	8	5	4	5	31	11	72	136
26	1	3	16	2	71	2	13	50	158
25	0	6	30	1	2	0	9	31	79
24	0	7	32	1	1	1	9	12	63
23	0	6	33	6	0	0	4	8	57
22	0	1	24	2	0	0	0	3	30
21	0	1	19	3	0	0	5	1	29
20	0	1	4	6	0	1	0	0	12
19	0	1	4	6	0	0	0	0	11
<18	0	1	8	143	1	3	2	0	158
Subtotal	86	110	229	225	80	109	257	385	
Grand Total	1,481								
>33	70	57	19	35	0	0	123	0	304
DOMESTIC/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	1	0	1
37	0	0	0	0	0	0	1	0	1
36	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	2	0	2
34	1	0	0	0	0	0	5	0	6
33	0	0	0	0	0	0	3	0	3
32	0	0	2	0	0	0	4	0	6
31	0	0	1	0	0	0	2	2	5
30	0	0	15	0	0	0	2	3	20
29	0	0	41	0	0	0	4	5	50
28	0	0	31	0	0	0	0	6	37
27	0	0	10	0	0	0	1	9	20
26	0	0	7	0	0	0	1	5	13
25	0	0	5	0	0	0	0	0	5
24	0	0	8	0	0	0	0	1	9
23	0	0	6	0	0	0	0	0	6
22	0	0	2	0	0	0	0	0	2
21	0	0	1	0	0	0	0	0	1
20	0	0	1	0	0	0	0	0	1
19	0	0	0	0	0	0	0	0	0
<18	0	0	1	1	0	0	0	0	2
Subtotal	1	0	131	1	0	0	26	31	
Grand Total	190								
Total Foreign and Domestic	87	110	360	226	80	109	283	416	
Foreign >36	1	0	0	0	0	0	12	0	13
Foreign and Domestic >36 total	71	57	19	35	0	0	135	0	317

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008.

Table 29. Jacksonville Harbor Total Annual Vessel Calls by Sailing Draft Inbound for Major Vessel Types, 2006-2007

FOREIGN/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	8	19	0	0	0	0	0	0	27
39	0	14	0	0	0	0	0	0	14
38	17	10	0	0	0	0	34	0	61
37	9	2	0	2	0	0	31	1	45
36	12	15	0	1	0	0	20	0	48
35	10	1	0	7	0	0	14	0	32
34	0	1	4	15	0	0	11	0	31
33	8	4	10	12	0	0	19	0	53
32	4	8	18	4	0	0	12	3	49
31	7	3	18	4	0	2	14	18	66
30	2	9	13	5	0	4	23	33	89
29	3	0	7	1	0	22	19	76	128
28	0	2	6	5	1	41	14	99	168
27	1	3	8	1	1	28	22	104	168
26	0	5	7	4	67	23	17	48	171
25	1	5	20	3	9	1	4	33	76
24	0	4	41	3	0	1	4	15	68
23	1	3	47	6	0	0	2	11	70
22	0	4	13	2	0	5	1	5	30
21	0	2	4	3	0	4	0	0	13
20	0	1	5	4	1	4	2	0	17
19	0	0	4	4	1	2	0	1	12
<18	0	1	1	122	0	1	3	1	129
Subtotal	83	116	226	208	80	138	266	448	
Grand Total	1,565								
>33	64	66	14	37	0	0	129	1	311
DOMESTIC/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	1	0	1
36	0	1	0	0	0	0	0	0	1
35	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	1	0	1
33	0	0	1	0	0	1	2	0	4
32	0	0	2	0	0	0	3	0	5
31	0	0	5	0	0	0	1	4	10
30	0	0	13	0	0	1	2	2	18
29	0	0	30	0	0	1	0	5	36
28	0	0	25	1	0	0	0	7	33
27	0	0	20	0	0	0	2	6	28
26	0	0	8	0	0	0	1	8	17
25	0	0	0	0	0	0	1	2	3
24	0	0	0	0	0	0	0	1	1
23	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
<18	0	0	0	0	0	0	0	1	1
Subtotal	0	1	104	1	0	3	14	36	
Grand Total	159								
Total Foreign and Domestic	83	117	330	209	80	141	280	484	
Foreign >36	0	1	1	0	0	1	4	0	7
Foreign and Domestic >36 total	64	67	15	37	0	1	133	1	318

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008.

Table 30. Jacksonville Harbor Total Annual Vessel Calls by Sailing Draft Inbound for Major Vessel Types, 2007-2008

FOREIGN/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	10	23	0	0	0	0	0	0	33
39	9	14	0	0	0	0	0	0	23
38	19	10	0	0	0	0	34	1	64
37	4	2	0	2	0	0	37	0	45
36	4	8	1	2	0	0	20	0	35
35	9	10	3	9	0	0	17	0	48
34	0	1	4	20	0	0	6	0	31
33	0	1	17	9	0	0	19	0	46
32	12	1	25	3	0	0	10	2	53
31	4	0	9	2	0	0	14	22	51
30	1	2	6	1	0	1	25	47	83
29	0	0	5	1	0	6	20	99	131
28	0	0	9	0	0	27	14	93	143
27	0	0	5	4	1	27	17	72	126
26	0	0	7	1	48	45	3	51	155
25	0	3	23	4	29	4	9	30	102
24	0	1	31	1	1	0	6	22	62
23	0	2	44	0	1	3	1	7	58
22	0	0	12	3	0	2	0	7	24
21	0	1	10	5	0	7	1	1	25
20	0	0	5	5	0	2	1	1	14
19	0	1	0	11	0	3	0	1	16
<18	0	1	2	95	0	3	1	0	102
Subtotal	72	81	218	178	80	130	255	456	
Grand Total	1,470								
>33	55	69	25	42	0	0	133	1	325
DOMESTIC/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	1	0	1
37	0	0	0	0	0	0	4	0	4
36	0	0	0	0	0	0	4	0	4
35	1	0	0	0	0	0	3	0	4
34	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	2	0	2
32	0	0	0	0	0	0	2	0	2
31	0	0	4	0	0	0	0	1	5
30	0	0	14	0	0	0	2	8	24
29	0	0	17	0	0	2	2	8	29
28	0	0	32	0	0	0	0	9	41
27	0	0	20	0	0	1	0	7	28
26	0	0	8	1	0	0	0	2	11
25	0	0	6	0	0	1	0	0	7
24	0	0	1	1	0	2	0	1	5
23	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
19	0	0	0	1	0	0	0	0	1
<18	0	0	1	1	0	0	0	0	2
Subtotal	1	0	103	4	0	6	20	36	
Grand Total	170								
Total Foreign and Domestic	73	81	321	182	80	136	275	492	
Foreign >36	1	0	0	0	0	0	14	0	15
Foreign and Domestic >36 total	56	69	25	42	0	0	147	1	340

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008.

Table 31. Jacksonville Harbor Total Annual Vessel Calls by Sailing Draft Inbound for Major Vessel Types, 2008-2009

FOREIGN/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	20	12	0	0	0	0	0	0	32
39	23	10	1	0	0	0	1	0	35
38	25	15	1	0	0	0	21	0	62
37	4	2	3	0	0	0	30	0	39
36	2	9	6	1	0	0	20	0	38
35	2	2	7	3	0	0	9	0	23
34	1	1	10	10	0	0	7	0	29
33	4	0	15	11	0	2	11	1	44
32	6	1	18	3	0	0	12	5	45
31	3	1	13	3	0	0	20	15	55
30	1	0	16	2	0	2	14	47	82
29	1	0	9	3	0	0	19	84	116
28	0	0	7	4	0	0	17	90	118
27	1	0	2	1	2	0	11	83	100
26	0	3	6	3	42	0	12	68	134
25	0	0	9	3	3	1	10	44	70
24	0	1	25	1	0	2	3	29	61
23	0	0	38	2	0	0	3	16	59
22	0	0	26	1	0	1	1	12	41
21	0	2	20	6	0	4	0	4	36
20	0	0	12	2	1	2	0	2	19
19	0	2	1	7	0	3	0	1	14
<18	0	0	2	123	0	10	4	0	139
Subtotal	93	61	247	189	48	27	225	501	1391
Grand Total	1,391								
>33	81	51	43	25	0	2	99	1	302

DOMESTIC/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	8	0	8
37	0	0	0	0	0	0	2	0	2
36	0	0	0	0	0	0	11	0	11
35	0	0	0	0	0	0	6	0	6
34	0	0	0	0	0	0	5	0	5
33	0	0	0	0	0	0	4	0	4
32	0	0	0	0	0	0	4	2	6
31	0	0	0	0	0	0	2	0	2
30	0	0	4	0	0	1	4	6	15
29	0	0	10	1	0	6	3	8	28
28	0	0	37	0	0	18	0	8	63
27	0	0	34	0	0	32	1	13	80
26	0	0	12	0	0	48	1	6	67
25	0	0	5	0	0	3	3	1	12
24	0	0	4	0	0	0	0	1	5
23	0	0	0	0	0	1	0	2	3
22	0	0	0	0	0	0	0	1	1
21	0	0	0	0	0	0	0	0	0
20	0	0	1	0	0	0	1	0	2
19	0	0	0	0	0	0	0	0	0
<18	0	0	0	0	0	0	0	0	0
Subtotal	0	0	107	1	0	109	55	48	320
Grand Total									
Total Foreign and Domestic									
Foreign >36	0	0	0	0	0	0	36	0	36
Foreign and Domestic >36 total	81	51	43	25	0	2	135	1	338

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, November 2009.

vehicle carriers. For 2005-2006 inbound calls, 304 foreign and 13 U.S. flag vessels were Mile Point tidal delayed for arrivals (>33 feet sailing drafts). [42]For 2006-2007 inbound calls, 311 foreign and seven U.S. flag vessels were Mile Point tidal delayed for arrivals (>33 feet sailing drafts). For 2007-2008 inbound calls, 325 foreign and 15 U.S. flag were Mile Point tidal delayed for arrivals (>33 feet sailing drafts). For 2008-2009 inbound calls, 315 foreign and 36 U.S. flag vessels were Mile Point tidal delayed for arrivals (>33 feet sailing drafts). The data indicate that passenger/cruise ships, Ro-Ro, and vehicle carriers are generally not Mile Point tidal delayed because sailing drafts are nearly always less than 33 feet. Moreover, for the traditional fleet of container vessels calling Jacksonville Harbor prior to 2008, Mile Point is generally not a serious issue with respect to tidal delays. However, the more recent data for the period 2008-2009 indicates that there is a larger number of Mile Point sailing draft impacted inbound vessels compared to prior years. There were 360 total inbound container calls in 2005-2006, of which 19 were Mile Point delayed (Table 5); 330 total inbound container calls in 2006-2007, of which 15 were Mile Point delayed (Table 6); 321 total inbound container calls in 2007-2008, of which 25 were Mile Point delayed; and 354 total inbound container calls in 2008-2009, of which 43 were Mile Point delayed.[43]

Tables 32, 33, 34 and 35 show the reported outbound sailing drafts for foreign and U.S. flag vessels for the largest number of calls by vessel type (refer to Table 1) for bulk cargo self-unloading, bulk cargo, container ship, general cargo, passenger/cruise, Ro-Ro, tankers and vehicle carriers. For 2005-2006 outbound calls, three foreign and nine U.S. flag vessels were Mile Point delayed for departures (>36 feet sailing drafts). For 2006-2007 outbound calls, eight foreign and 11 U.S. flag vessels were Mile Point delayed for departures (>36 feet sailing drafts). For 2007-2008 outbound calls, three foreign and 10 U.S. flag vessels were Mile Point delayed for departures (>36 feet sailing drafts). The data indicate that for the existing fleet calling Jacksonville Harbor, outbound sailing drafts greater than 36 feet and affected by Mile Point tidal delays are relatively infrequent. Most of the bulk vessels calling Jacksonville Harbor are for discharges of dry bulk and petroleum related products. Mile Point outbound tidal delays (>36 feet sailing draft) primarily affect a very small number of container vessels (nine in 2005-2006, 13 in 2006-2007, and 11 in 2007-2008) and a very small number of general cargo vessels (three in 2005-2006, four in 2006-2007, and two in 2007-2008).

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[42] Data provided for the number of dry bulk, liquid bulk, and general cargo do not match data provided in Table 7 for 2007-2008 vessels with 33 feet or more sailing draft. Table 7 is data for certain vessel categories as received from the Port. The data in Table 7 do not reflect all of the Mile Point draft impacted vessels; for example, open hatch vessels shown in Table 11 are not shown in Table 7. For the foreign flag vessels in the bulk categories in Table 7, there are totals of 55 self unloading and 69 bulk cargo with drafts 33 feet or more, and similarly for general cargo and tanker there are totals of 42 and 133, respectively Total bulk vessels in Table 7 with drafts >33 feet is 124 (55 + 69 = 124). In Table 19, the general cargo vessel category includes open hatch cargo ships (refer to Table 11), which are not separately delineated in Table 7. In 2007-2008, there was a total of 39 general cargo and 20 open hatch vessels with drafts >33 feet (Table 11). In Table 7, there is a total of 42 general cargo vessels with sailing drafts >33 feet, not including open hatch ships. The discrepancies between Table 7 for sailing drafts >33 feet having three less bulk vessels than tables 11 and 19 and three more general cargo vessels lies in the fact that there were three "general cargo" vessels misclassified in the Port data (Table 7), and they were subsequently moved to the "bulk" category. The total number of general cargo vessels in tables 11 and 19 declined by three and the total number of bulk vessels increased by three. The number of tanker vessels in Table 7 with sailings drafts >33 feet, 147 vessels (133 foreign flag and 14 U.S. flag), does not include all "tanker" vessels that are shown in Table 11 to be 155 calls with sailing drafts >33 feet, which is consistent with Table 19.

[43] As noted the 2008-2009 data would only reflect three months of the TraPac terminal operations.

For all practical purposes, for the existing fleet Mile Point has traditionally been an inbound tidal delay constraint for vessels greater than 33 feet sailing draft such a bulkers (dry and liquid) and regional container vessels. Traditionally, Jacksonville Harbor does not have a preponderance of deep sailing draft outbound vessels. Tables 32, 33, 34, and 35 indicate very few outbound vessels are sailing greater than 36 feet. However, with the advent of TraPac and deeper loading Panamax and Post-Panamax vessel calls there will be Mile Point tidal delays for outbound vessels with sailing drafts >36 feet (refer to section 5.3.4 Dames Point Container Vessel Sailing Draft Distributions).

Table 36 summarizes the annual number of inbound calls and Mile Point impacted calls (>33 feet sailing draft) for the major vessel types calling Jacksonville Harbor. The data are presented by vessel type (bulk, tanker, general cargo, and container) and then other categories that are nearly always not Mile Point tide delay impacted (for example, Ro-Ro and vehicle carriers). Bulk vessel calls ranged from 195 in 2006-2007 to 153 and 154 in 2007-2008 and 2008-2009, respectively. Bulk vessel inbound calls that are Mile Point impacted ranged from 127 (2007-2008) to 132 (2008-2009). Nearly two-thirds of arriving bulk vessel calls were Mile Point tide delay impacted in 2005-2006 and 2006-2007. With fewer total bulk vessel calls in 2007-2007 (153) and 2008-2009 (154), the percentage of Mile Point tide delay impacted calls was higher at 83 and 86, respectively.

Total annual inbound calls by tanker vessels ranged from 280 (2008-2009) to 309 (2006-2007). Mile Point tide delayed calls for tankers ranged from 135 (2008-2009) to 155 (2007-2008). Nearly 50 percent of all inbound tanker calls are Mile Point tidal delayed (>33 feet sailing draft).

General cargo vessels are predominantly not impacted by Mile Point inbound tide delays (>33 feet sailing draft). Total general cargo inbound vessel calls ranged from 207 and 208 (2008-2009 and 2007-2008) to 229 and 230 (2006-2007 and 2005-2006). Mile Point impacted tide delays ranged from 39 and 40 (2005-2006 and 2008-2009) to 55 and 59 (2006-2007 and 2007-2008). General cargo vessel Mile Point tidal delays have increased absolutely and relatively as a result of open hatch vessel calls. These tend to be larger general cargo vessels oriented to particular products with normally heavy loading (such as wood pulp). In 2005-2006, there were five open hatch general cargo calls, and none were Mile Point tide impacted with respect to sailing drafts >33 feet. However, there were 20, 26, and 17 open hatch general cargo vessel inbound calls in 2006-2007, 2007-2008, and 2008-2009, respectively, and 17, 20, and 15 of these calls were Mile Point tide delay impacted (>33 feet sailing drafts).

Only a small part of the existing container vessel fleet calling Jacksonville Harbor is Mile Point tide delay impacted with respect to inbound sailing drafts greater than 33 feet. Total inbound container vessel calls ranged from 321 (2007-2008) to 354 and 358 (2008-2009 and 2005-2006). Mile Point tide delayed inbound container vessel calls ranged from 15 (2006-2007) to 25 (2007-2008) and then increased to 43 (2008-2009). Mile Point tide delayed inbound container vessel calls ranged from five percent in 2005-2006 and 2006-2007 to eight percent in 2007-2008 and then 12 percent in 2008-2009.

Table 32. Jacksonville Harbor Total Annual Vessel Calls by Sailing Draft Outbound for Major Vessel Types, 2005-2006

FOREIGN/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0
36	0	0	0	3	0	0	0	0	3
35	0	0	0	4	0	0	0	0	4
34	0	1	13	3	0	0	3	0	20
33	0	3	15	2	0	11	4	0	35
32	0	2	10	2	0	23	8	1	46
31	1	0	6	3	0	38	14	4	66
30	0	3	1	7	1	27	18	21	78
29	1	1	3	3	0	3	14	43	68
28	3	3	3	3	0	1	31	70	114
27	5	3	5	2	11	0	42	105	173
26	15	10	28	4	61	0	39	81	238
25	10	8	35	3	5	1	30	35	127
24	9	14	44	6	0	0	19	17	109
23	18	5	34	7	0	0	6	5	75
22	4	13	15	8	0	1	6	0	47
21	5	24	7	8	0	0	5	1	50
20	8	13	7	10	0	0	7	0	45
19	4	4	3	15	0	2	1	0	29
<18	1	3	1	131	2	1	7	1	147
Subtotal	84	110	230	224	80	108	254	384	
Grand Total	1,474								
>36	0	0	0	3	0	0	0	0	3
DOMESTIC/OUTBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
37	0	0	1	0	0	0	0	0	1
36	0	0	8	0	0	0	0	0	8
35	0	0	6	0	0	0	1	0	7
34	0	0	7	0	0	0	0	0	7
33	0	0	20	0	0	0	0	0	20
32	0	0	31	0	0	0	0	0	31
31	0	0	26	0	0	0	0	2	28
30	0	0	12	0	0	0	0	3	15
29	0	0	7	0	0	0	1	10	18
28	0	0	6	0	0	0	1	6	13
27	0	0	1	0	0	0	9	7	17
26	0	0	2	0	0	0	9	1	12
25	0	0	0	0	0	0	1	2	3
24	0	0	0	0	0	0	1	0	1
23	1	0	1	0	0	0	0	0	2
22	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
<18	0	0	0	1	0	0	3	0	4
Subtotal	1	0	128	1	0	0	26	31	
Grand Total	187								
Total Foreign and Domestic	85	110	358	225	80	108	280	415	
Foreign >36	0	0	9	0	0	0	0	0	9
Foreign and Domestic >36 total	0	0	9	3	0	0	0	0	12

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008.

Table 33. Jacksonville Harbor Total Annual Vessel Calls by Sailing Draft Outbound for Major Vessel Types, 2006-2007

FOREIGN/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	1	0	0	0	0	1
37	0	0	0	2	0	0	1	0	3
36	0	0	2	1	0	0	1	0	4
35	0	1	3	4	0	0	2	0	10
34	0	2	11	1	0	11	1	0	26
33	0	5	13	0	0	21	7	0	46
32	0	2	10	3	0	21	7	0	43
31	0	4	6	2	0	25	12	7	56
30	0	5	10	4	0	19	15	18	71
29	3	2	7	2	0	8	19	56	97
28	9	4	14	4	0	8	26	77	142
27	7	12	9	3	3	6	33	106	179
26	3	6	18	3	63	2	54	95	244
25	13	5	29	4	12	1	33	51	148
24	10	8	37	5	0	0	23	23	106
23	18	6	25	12	0	2	13	10	86
22	6	14	22	17	0	4	6	2	71
21	2	24	5	5	0	3	4	1	44
20	4	10	1	7	1	3	3	0	29
19	9	2	2	32	0	3	0	0	48
<18	1	3	3	98	1	2	6	3	117
Subtotal	85	115	227	210	80	139	266	449	
Grand Total	1,571								
>36	0	0	2	4	0	0	2	0	8
DOMESTIC/INBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0
36	0	0	11	0	0	0	0	0	11
35	0	0	9	0	0	0	0	0	9
34	0	0	8	0	0	0	0	0	8
33	0	0	11	0	0	0	0	0	11
32	0	0	15	0	0	0	0	0	15
31	0	0	23	0	0	1	0	3	27
30	0	0	17	0	0	1	3	0	21
29	0	0	3	0	0	1	1	5	10
28	0	0	7	0	0	0	3	13	23
27	0	0	1	0	0	0	2	11	14
26	0	0	0	0	0	0	2	1	3
25	0	0	0	1	0	0	2	2	5
24	0	0	0	0	0	0	1	1	2
23	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0
21	0	1	0	0	0	0	0	0	1
20	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0
<18	0	0	0	0	0	0	0	0	0
Subtotal	0	1	105	1	0	3	14	36	
Grand Total	160								
Total Foreign and Domestic	85	116	332	211	80	142	280	485	
Foreign >36	0	0	11	0	0	0	0	0	11
Foreign and Domestic >36 total	0	0	13	4	0	0	2	0	19

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008.

Table 34. Jacksonville Harbor Total Annual Vessel Calls by Sailing Draft Outbound for Major Vessel Types, 2007-2008

FOREIGN/OUTBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
37	0	0	0	1	0	0	0	0	1
36	0	0	1	1	0	0	0	0	2
35	1	1	4	2	0	0	0	0	8
34	0	2	15	3	0	1	5	0	26
33	0	0	20	2	0	9	8	0	39
32	0	1	12	0	0	26	8	3	50
31	0	0	8	0	0	31	9	12	60
30	3	0	8	2	0	23	26	38	100
29	4	2	4	1	0	14	18	67	110
28	3	2	4	1	0	0	39	105	154
27	10	2	5	8	2	2	31	78	138
26	14	4	19	0	28	1	45	75	186
25	2	9	23	3	48	1	29	46	161
24	4	6	36	5	1	2	26	19	99
23	14	3	34	14	0	0	6	7	78
22	9	13	16	13	0	4	1	1	57
21	3	21	5	10	0	4	1	0	44
20	3	14	2	17	1	4	1	1	43
19	1	1	1	27	0	2	1	0	33
<18	0	1	3	65	0	5	2	1	77
Subtotal	71	82	220	175	80	129	256	453	
Grand Total	1,466								
>36	0	0	1	2	0	0	0	0	3
DOMESTIC/OUTBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
37	0	0	1	0	0	0	0	0	1
36	0	0	9	0	0	0	0	0	9
35	0	0	8	0	0	0	0	0	8
34	0	0	7	0	0	0	0	0	7
33	0	0	8	0	0	0	0	0	8
32	0	0	9	0	0	0	1	1	11
31	0	0	10	0	0	0	1	2	13
30	0	0	17	0	0	0	3	7	27
29	0	0	22	0	0	1	1	15	39
28	0	0	9	1	0	1	4	5	20
27	0	0	2	0	0	1	5	2	10
26	0	0	0	0	0	3	4	3	10
25	1	0	0	1	0	0	0	1	3
24	0	0	0	0	0	0	1	0	1
23	0	0	1	0	0	0	0	0	1
22	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0
20	0	0	0	1	0	0	0	0	1
19	0	0	0	0	0	0	0	0	0
<18	0	0	0	1	0	0	0	0	1
Subtotal	1	0	103	4	0	6	20	36	
Grand Total	170								
Total Foreign and Domestic	72	82	323	179	80	135	276	489	
Foreign >36	0	0	10	0	0	0	0	0	10
Foreign and Domestic >36 total	0	0	11	2	0	0	0	0	13

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008.

Table 35. Jacksonville Harbor Total Annual Vessel Calls by Sailing Draft Outbound for Major Vessel Types, 2008-2009

FOREIGN/OUTBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	1	0	1
38	0	0	0	0	0	0	1	0	1
37	0	0	1	0	0	0	0	0	1
36	0	0	4	2	0	0	2	0	8
35	0	0	9	4	0	0	1	0	14
34	0	1	18	0	0	1	1	2	23
33	1	1	17	1	0	1	7	0	28
32	0	1	19	0	0	0	8	3	31
31	0	0	14	0	0	1	10	24	49
30	6	0	9	1	0	0	21	48	85
29	8	0	8	4	0	0	19	74	113
28	12	3	7	3	0	0	34	110	169
27	13	1	4	4	23	0	27	90	162
26	10	1	13	0	20	0	37	70	151
25	10	6	14	6	3	0	19	37	95
24	5	3	41	5	0	2	13	30	99
23	16	2	31	12	0	2	7	9	79
22	8	15	12	10	0	1	6	4	56
21	2	11	10	8	0	5	2	1	39
20	2	15	13	21	1	1	1	0	54
19	0	0	1	30	0	5	0	1	37
<18	0	2	2	79	0	9	6	0	98
Subtotal	93	62	247	190	47	28	223	503	
Grand Total	1,393								
>36	0	0	5	2	0	0	4	0	11
DOMESTIC/OUTBOUND									
Draft (ft.)	Bulk Cargo Self Unloading	Bulk Cargo	Container Ship	General Cargo	Passenger/ Cruise	Ro-Ro Cargo	Tanker	Vehicle Carrier	Total
40	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0
34	0	0	6	0	0	1	1	0	8
33	0	0	17	0	0	5	1	0	23
32	0	0	14	0	0	19	3	1	37
31	0	0	14	0	0	48	6	5	73
30	0	0	15	0	0	21	4	4	44
29	0	0	19	0	0	9	14	9	51
28	0	0	16	1	0	2	7	10	36
27	0	0	5	0	0	1	4	10	20
26	0	0	0	0	0	1	8	4	13
25	0	0	0	0	0	1	3	3	7
24	0	0	0	0	0	0	0	1	1
23	0	0	0	0	0	1	0	0	1
22	0	0	0	0	0	1	0	1	2
21	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	1	0	0	1
19	0	0	0	0	0	0	1	0	1
<18	0	0	0	0	0	0	2	0	2
Subtotal	0	0	106	1	0	111	54	48	
Grand Total	320								
Total Foreign and Domestic	93	62	353	191	47	139	277	551	
Foreign >36	0	0	0	0	0	0	0	0	0
Foreign and Domestic >36 total	0	0	5	2	0	0	4	0	11

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, November 2009.

Table 36. Jacksonville Harbor Inbound Vessel Calls and Sailing Drafts Reports to be 33 Feet or More, 2005-2009

Vessel Category	2005-2006			2006-2007			2007-2008			2008-2009		
	All Calls	>33 ft	% >33 ft	All Calls	>33 ft	% >33 ft	All Calls	>33 ft	% >33 ft	All Calls	>33 ft	% >33 ft
Bulk Self-Unloading	87	71	82%	83	64	77%	73	56	77%	93	81	87%
Bulk	100	57	57%	112	64	57%	80	71	89%	61	51	84%
Bulk Vehicle Deck	1	1	100%	0	0	0%	0	0	0%	0	0	0%
Subtotal Bulk	188	129	69%	195	128	66%	153	127	83%	154	132	86%
Chemical Product	136	63	46%	133	62	47%	125	65	52%	141	64	45%
Products	83	48	58%	88	39	44%	92	48	52%	72	33	46%
Crude Oil	22	13	59%	9	4	44%	17	11	65%	10	5	50%
Crude Oil/Products	29	10	34%	38	23	61%	35	22	63%	28	18	64%
Replenishment Tanker	9	7	78%	13	9	69%	13	7	54%	13	7	54%
Bulk Oil	0	0	0%	3	3	0%	1	1	100%	0	0	0%
Chemical Tank	13	1	8%	12	5	42%	6	1	17%	9	6	67%
Tanker Unclassified	3	2	67%	3	2	67%	3	0	0%	2	1	50%
Asphalt/Bitumen Tanker	5	2	40%	10	3	30%	1	0	0%	0	0	0%
LPG Tanker	0	0	0%	0	0	0%	0	0	0%	5	1	0%
Subtotal Tank	300	146	49%	309	150	49%	293	155	53%	280	135	48%
General Cargo	217	35	16%	209	37	18%	182	39	21%	190	25	13%
Heavy Load	7	4	57%	1	1	100%	0	0	0%	0	0	0%
Open Hatch	5	0	0%	20	17	85%	26	20	77%	17	15	88%
Subtotal General Cargo	229	39	17%	230	55	24%	208	59	28%	207	40	19%
Container Fully Cellular	348	17	5%	326	15	5%	321	25	8%	354	43	12%
Container/Ro-Ro	10	1	10%	4	0	0%	0	0	0%	0	0	0%
Subtotal Container	358	18	5%	330	15	5%	321	25	8%	354	43	12%
Ro-Ro	109	0	0%	141	1	1%	136	0	0%	139	2	1%
Pusher Tug	42	4	10%	23	2	9%	30	2	7%	52	1	2%
Naval Ro-Ro	28	3	11%	14	1	7%	9	3	33%	18	3	17%
Anchor Handling	9	1	11%	8	1	13%	14	6	43%	9	3	33%
Refrigerated	7	1	14%	12	1	8%	14	0	0%	17	0	0%
Tug	69	0	0%	58	2	3%	88	0	0%	80	0	0%
Pass/Ro-Ro Vehicles	0	0	0%	5	1	20%	3	0	0%	0	0	0%
Vehicle Carrier	416	0	0%	484	1	0%	492	1	0%	551	1	0%
Subtotal Other	680	9	1%	745	10	1%	786	12	2%	866	10	1%
All Other Vessels	177	0	0%	154	0	0%	150	0	0%	125	0	0%
Grand Total All Vessel Calls	1,932	341	18%	1963	358	18%	1911	378	20%	1986	360	18%

Notes: All Other Vessels are categories that do not have any reported inbound sailings with drafts 33 feet or more, including:
Buoy & Lighthouse Tender, Cement Carrier, Deck Cargo Pontoon, Semisubmersible, Fish Carrier, Fishing Vessel,
General Cargo Barge (non-propelled), General Cargo Ship (with Ro-Ro Facility), Hopper Motor, Hopper Suction Dredge,
Landing Craft, Offshore Tug/Supply Vessel, Passenger Ship, Passenger Ship (Inland Waterways), Passenger/Cruise,
Pipe Layer Crane Vessel, Platform Supply Ship, Pollution Control Vessel, Products Tank Barge (non-propelled),
Research Survey Vessel, Sail Training Ship, Salvage Ship, Search & Rescue Vessel, Standby Safety Vessel,
Towing/Pushing Inland Waterways, and Yacht.
Grand Total Vessel Calls represents all vessels identified from the St. Johns Bar Pilot Association.

Source: G.E.C., Inc., from data provided by St. Johns Bar Pilot Association, April 2008 and November 2009.

For the entire Jacksonville Harbor, Mile Point tide delayed inbound calls are nearly 20 percent of all calls. Table 36 indicates that the occurrence of Mile Point tide delays other than bulk, tanker, general cargo, and container vessels is quite low. The subtotal for other vessels identified in Table 36 indicates that about one percent experience Mile Point inbound tidal delays (>33 feet sailing draft). Mile Point inbound tidal delays are primarily for bulk vessels calling Jacksonville Harbor and, to a lesser extent, a small subcategory of the existing general cargo and container fleets.

5.3.2 Sailing Draft and DWT Distributions for Mile Point Impacted Vessels

Sailing draft distributions for Mile Point impacted inbound vessel calls (>33 feet) were compiled for bulk, tanker, general cargo, and container vessels for four time frames, including a 2005 vessel call list contained in the Mile Point spreadsheet from the Jacksonville District and then using the Pilots data for the periods 2005-2006, 2006-2007, 2007-2008, and 2008-2009. The sailing draft distributions are for one-foot intervals from 33 feet to 40 feet and stratified by deadweight tonnes (dwt).

Table 37 shows the bulk cargo vessel sailing draft and dwt distributions for 2005 and 2008-2009. A total of 132 bulk vessels impacted by Mile Point (>33 feet sailing draft) called in 2008-2009. These vessels were primarily concentrated in the upper range of the maximum sailing drafts (38 to 40 feet). Most of the bulk vessels were in the Handymax range (>40,000 dwt) or Panamax range (>50,000 dwt). The number of Mile Point draft impacted bulk calls in 2008-2009 was less than the 2005 vessel call list, which had 150 draft impacted calls.

Table 38 shows the tanker vessel sailing draft and dwt distributions for 2005 and 2008-2009. A total of 123 inbound tanker vessels that were impacted by Mile Point (>33 feet sailing draft) called in 2008-2009, of which 90 were foreign flag and 33 were U.S. flag. The tanker fleets calling Jacksonville Harbor are of the Handymax size (40,000 to 50,000 dwt), customarily calling in the 37 and 38 foot sailing draft range. A small number of tankers (foreign flag) are of Panamax size. The number of Mile Point draft impacted tanker calls in 2008-2009 was less than the 2005 vessel call list, which had 186 draft impacted calls.

Table 39 shows the general cargo vessel sailing draft and dwt distributions for 2005 and 2008-2009. A total of 25 inbound general cargo vessels that were impacted by Mile Point (>33 feet sailing draft) called in 2008-2009. The distribution of dwt size categories between the smallest and largest for general cargo suggests that the general cargo fleet is primarily smaller vessels less than 30,000 dwt, with the exception of open hatch vessels that are more likely to be the largest and deepest loading (>40,000 dwt).

Table 40 shows the container vessel sailing draft and dwt distributions for 2005 and 2008-2009. A total of 25 and 43 inbound container vessels that were impacted by Mile Point (>33 feet sailing draft) called in 2007-2008 and 2008-2009, respectively, of which all were foreign flag. These vessels were impacted at the very lowest range of the Mile Point sailing draft threshold restriction (>33 feet sailing draft). [44] The container fleet calling Jacksonville Harbor is largely not Mile Point tide impacted because of its relatively small size with respect to dwt and draft.

Table 41 summarizes the impact of Mile Point tide delays for outbound vessels (>36 feet sailing draft) for 2005-2006, 2006-2007, 2007-2008, and 2008-2009. The data indicate that for the vessels identified, only two to three percent are Mile Point impacted with respect to outbound

[44] The Mile Point tidal constraint for certain inbound container vessels with "exceptional handling characteristics" related to TraPac and Blount Island was subsequently raised to 34-ft. sailing draft by the Jacksonville Bar Pilots. It was not known if this increase for particular vessels primarily MOL and related alliance calls at TraPac was in effect during the most recent period of port call data, March 2008 to March 2009

sailing drafts. As noted previously, these outbound impacted vessels are concentrated in the container and general cargo categories.

Table 37. Jacksonville Harbor DWT and Sailing Draft Distributions in Feet for Inbound Dry Bulk Vessels, 2008-2009 and 2005

Bulk 2008-2009	33 ft	34 ft	35 ft	36 ft	37 ft	38 ft	39 ft	40 ft	Total
>50,000	0	0	5	6	1	8	19	33	72
>40,000, <50,000	0	0	6	5	6	21	4	0	42
>30,000, <40,000	0	0	8	1	0	0	0	0	9
>20,000, <30,000	1	1	2	0	0	0	0	0	4
Total	1	1	21	12	7	29	23	33	127
Bulk 2005	**33 ft**	**34 ft**	**35 ft**	**36 ft**	**37 ft**	**38 ft**	**39 ft**	**40 ft**	**Total**
>50,000	0	0	2	15	12	16	1	15	61
>40,000, <50,000	2	8	6	19	8	4	3	1	51
>30,000, <40,000	21	3	1	5	0	0	0	0	30
>20,000, <30,000	3	1	0	1	1	0	0	2	8
Total	26	12	9	40	21	20	4	18	150
Bulk 2008-2009	**33 ft**	**34 ft**	**35 ft**	**36 ft**	**37 ft**	**38 ft**	**39 ft**	**40 ft**	**Total**
>50,000	0%	0%	4%	5%	1%	6%	15%	26%	57%
>40,000, <50,000	0%	0%	5%	4%	5%	17%	3%	0%	33%
>30,000, <40,000	0%	0%	6%	1%	0%	0%	0%	0%	7%
>20,000, <30,000	1%	1%	2%	0%	0%	0%	0%	0%	3%
Total	1%	1%	17%	9%	6%	23%	18%	26%	100%
Bulk 2005	**33 ft**	**34 ft**	**35 ft**	**36 ft**	**37 ft**	**38 ft**	**39 ft**	**40 ft**	**Total**
>50,000	0%	0%	1%	10%	8%	11%	1%	10%	41%
>40,000, <50,000	1%	5%	4%	13%	5%	3%	2%	1%	34%
>30,000, <40,000	14%	2%	1%	3%	0%	0%	0%	0%	20%
>20,000, <30,000	2%	1%	0%	1%	1%	0%	0%	1%	5%
Total	17%	8%	6%	27%	14%	13%	3%	12%	100%

Notes: Deadweight Tonnes (DWT).

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008 and November 2009.

Table 38. Jacksonville Harbor DWT and Sailing Draft Distribution in Feet for Inbound Liquid Bulk Vessels, Foreign and Domestic Flags, 2008-2009 and 2005

Tank 2008-2009	33 ft Foreign	33 ft US	34 ft Foreign	34 ft US	35 ft Foreign	35 ft US	36 ft Foreign	36 ft US	37 ft Foreign	37 ft US	38 ft Foreign	38 ft US	Total Foreign	Total US	Total All
>60,000	0	0	2	0	1	0	0	0	5	0	7	0	15	0	15
>50,000, <60,000	0	0	1	0	1	0	1	0	2	0	2	0	7	0	7
>40,000, <50,000	1	1	3	4	5	2	19	5	22	1	12	8	62	21	83
>30,000, <40,000	0	0	0	1	2	4	0	5	1	1	1	0	4	11	15
>20,000, <30,000	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
<20,000	1	0	1	0	0	0	0	0	0	0	0	0	2	0	2
Total	2	1	7	5	9	6	20	11	30	2	22	8	90	33	123
Tank 2005	**33 ft Foreign**	**33 ft US**	**34 ft Foreign**	**34 ft US**	**35 ft Foreign**	**35 ft US**	**36 ft Foreign**	**36 ft US**	**37 ft Foreign**	**37 ft US**	**38 ft Foreign**	**38 ft US**	**Total Foreign**	**Total US**	**Total All**
>60,000	0	0	1	0	0	0	5	0	3	0	18	0	27	0	27
>50,000, <60,000	0	0	2	0	0	0	0	0	1	0	0	0	3	0	3
>40,000, <50,000	11	4	12	5	12	0	12	0	20	4	36	8	103	21	124
>30,000, <40,000	4	1	3	2	3	1	0	6	3	2	0	0	13	12	25
>20,000, <30,000	1	0	1	0	0	1	0	2	0	1	0	0	2	4	6
<20,000	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	16	6	19	7	15	2	17	8	27	7	54	8	148	38	186
Tank 2008-2009	**33 ft Foreign**	**33 ft US**	**34 ft Foreign**	**34 ft US**	**35 ft Foreign**	**35 ft US**	**36 ft Foreign**	**36 ft US**	**37 ft Foreign**	**37 ft US**	**38 ft Foreign**	**38 ft US**	**Total Foreign**	**Total US**	**Total All**
>60,000	0%	0%	2%	0%	1%	0%	0%	0%	4%	0%	6%	0%	12%	0%	12%
>50,000, <60,000	0%	0%	1%	0%	1%	0%	1%	0%	2%	0%	2%	0%	6%	0%	6%
>40,000, <50,000	1%	1%	2%	3%	4%	2%	15%	4%	18%	1%	10%	7%	50%	17%	67%
>30,000, <40,000	0%	0%	0%	1%	2%	3%	0%	4%	1%	1%	1%	0%	3%	9%	12%
>20,000, <30,000	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	1%	1%
<20,000	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	2%
Total	2%	1%	6%	4%	7%	5%	16%	9%	24%	2%	18%	7%	73%	27%	100%
Tank 2005	**33 ft Foreign**	**33 ft US**	**34 ft Foreign**	**34 ft US**	**35 ft Foreign**	**35 ft US**	**36 ft Foreign**	**36 ft US**	**37 ft Foreign**	**37 ft US**	**38 ft Foreign**	**38 ft US**	**Total Foreign**	**Total US**	**Total All**
>60,000	0%	0%	1%	0%	0%	0%	3%	0%	2%	0%	10%	0%	15%	0%	15%
>50,000, <60,000	0%	0%	1%	0%	0%	0%	0%	0%	1%	0%	0%	0%	2%	0%	2%
>40,000, <50,000	6%	2%	6%	3%	6%	0%	6%	0%	11%	2%	19%	4%	55%	11%	67%
>30,000, <40,000	2%	1%	2%	1%	2%	1%	0%	3%	2%	1%	0%	0%	7%	6%	13%
>20,000, <30,000	1%	0%	1%	0%	0%	1%	0%	1%	0%	1%	0%	0%	1%	2%	3%
<20,000	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%
Total	9%	3%	10%	4%	8%	1%	9%	4%	15%	4%	29%	4%	80%	20%	100%

Notes: Deadweight Tonnes (DWT)

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, November 2009.

Table 39. Jacksonville Harbor DWT and Sailing Draft Distributions in Feet for Inbound General Cargo Vessels, 2008-2009 and 2005

General Cargo 2008-2009	33 ft	34 ft	35 ft	36 ft	37 ft	38 ft	39 ft	40 ft	Total
>40,000	0	0	0	0	0	0	0	0	0
>30,000, <40,000	2	1	0	1	0	0	0	0	4
>20,000, <30,000	9	9	3	0	0	0	0	0	21
Total	11	10	3	1	0	0	0	0	25
General Cargo 2005	**33 ft**	**34 ft**	**35 ft**	**36 ft**	**37 ft**	**38 ft**	**39 ft**	**40 ft**	**Total**
>40,000	1	1	3	1	0	1	0	0	7
>30,000, <40,000	6	4	10	14	0	0	0	0	34
>20,000, <30,000	7	13	7	0	0	0	0	0	27
Total	14	18	20	15	0	1	0	0	68
General Cargo 2008-2009	**33 ft**	**34 ft**	**35 ft**	**36 ft**	**37 ft**	**38 ft**	**39 ft**	**40 ft**	**Total**
>40,000	0%	0%	0%	0%	0%	0%	0%	0%	0%
>30,000, <40,000	8%	4%	0%	4%	0%	0%	0%	0%	16%
>20,000, <30,000	36%	36%	12%	0%	0%	0%	0%	0%	84%
Total	44%	40%	12%	4%	0%	0%	0%	0%	100%
General Cargo 2005	**33 ft**	**34 ft**	**35 ft**	**36 ft**	**37 ft**	**38 ft**	**39 ft**	**40 ft**	**Total**
>40,000	1%	1%	4%	1%	0%	1%	0%	0%	10%
>30,000, <40,000	9%	6%	15%	21%	0%	0%	0%	0%	50%
>20,000, <30,000	10%	19%	10%	0%	0%	0%	0%	0%	40%
Total	21%	26%	29%	22%	0%	1%	0%	0%	100%

Notes: Deadweight Tonnes (DWT)

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, November 2009.

Table 40. Jacksonville Harbor DWT and Sailing Draft Distributions in Feet for Inbound Container Vessels, Foreign and Domestic Flags, 2007-2008 and 2008-2009

Container 2007-2008	33 ft Foreign	33 ft US	34 ft Foreign	34 ft US	35 ft Foreign	35 ft US	36 ft Foreign	36 ft US	37 ft Foreign	37 ft US	38 ft Foreign	38 ft US	39 ft Foreign	39 ft US	Total Foreign	Total US	Total All
>50,000	13	0	3	0	0	0	1	0	0	0	0	0	0	0	17	0	17
>40,000, <50,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
>30,000, <40,000	4	0	1	0	3	0	0	0	0	0	0	0	0	0	8	0	8
>20,000, <30,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<20,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	17	0	4	0	3	0	1	0	0	0	0	0	0	0	25	0	25
Container 2008-2009	33 ft Foreign	33 ft US	34 ft Foreign	34 ft US	35 ft Foreign	35 ft US	36 ft Foreign	36 ft US	37 ft Foreign	37 ft US	38 ft Foreign	38 ft US	39 ft Foreign	39 ft US	Total Foreign	Total US	Total All
>50,000	11	0	5	0	7	0	5	0	3	0	1	0	1	0	33	0	33
>40,000, <50,000	2	0	0	0	0	0	1	0	0	0	0	0	0	0	3	0	3
>30,000, <40,000	1	0	5	0	0	0	0	0	0	0	0	0	0	0	6	0	6
>20,000, <30,000	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
<20,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	15	0	10	0	7	0	6	0	3	0	1	0	1	0	43	0	43
Container 2007-2008	33 ft Foreign	33 ft US	34 ft Foreign	34 ft US	35 ft Foreign	35 ft US	36 ft Foreign	36 ft US	37 ft Foreign	37 ft US	38 ft Foreign	38 ft US	39 ft Foreign	39 ft US	Total Foreign	Total US	Total All
>50,000	52%	0%	12%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	68%	0%	68%
>40,000, <50,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
>30,000, <40,000	16%	0%	4%	0%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	32%	0%	32%
>20,000, <30,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<20,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	68%	0%	16%	0%	12%	0%	4%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
Container 2008-2009	33 ft Foreign	33 ft US	34 ft Foreign	34 ft US	35 ft Foreign	35 ft US	36 ft Foreign	36 ft US	37 ft Foreign	37 ft US	38 ft Foreign	38 ft US	39 ft Foreign	39 ft US	Total Foreign	Total US	Total All
>50,000	26%	0%	12%	0%	16%	0%	12%	0%	7%	0%	2%	0%	2%	0%	77%	0%	77%
>40,000, <50,000	5%	0%	0%	0%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%	7%	0%	7%
>30,000, <40,000	2%	0%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	14%
>20,000, <30,000	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	0%	2%
<20,000	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total	35%	0%	23%	0%	16%	0%	14%	0%	7%	0%	2%	0%	2%	0%	100%	0%	100%

Notes: Deadweight Tonnes (DWT)

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008 and November 2009.

Table 41. Jacksonville Harbor Outbound Vessels with Sailing Drafts Reported to be 36 Feet or More, 2005-2009

Vessel Category	2005-2006			2006-2007			2007-2008			2008-2009		
	All Calls	>36 ft	%>36 ft	All Calls	>36 ft	%>36 ft	All Calls	>36 ft	%>36 ft	All Calls	>36 ft	%>36 ft
Container Fully Cellular	348	9	0	328	13	0	322	11	0	353	5	1%
General Cargo	216	3	0	207	4	0	179	2	0	191	2	1%
Open Hatch	5	0	0	20	1	0	25	3	0	18	1	6%
Asphalt/Bitumen	6	1	0	10	1	0	1	0	0	0	0	0%
Crude Oil/Products	29	0	0	38	1	0	35	0	0	10	3	30%
Products	81	0	0	90	1	0	92	0	0	71	0	0%
Anchor Handling	9	0	0	8	1	0	13	0	0	9	0	0%
Subtotal	694	13	0	701	22	0	667	16	0	652	11	2%
All Other Vessels	1,217	0	0	1,274	-9	0	1,216	-3	0	1,310	2	0%
Grand Total Vessel Calls	1,911	13	0	1,975	13	0	1,883	13	0	1,962	13	1%

Source: G.E.C., Inc., from data supplied by St. Johns Bar Pilot Association, April 2008 and November 2009.

5.3.3 Vessel Call List

Table 42 presents a summary of the Mile Point inbound impacts for dwt categories of vessels calling Jacksonville Harbor in 2005-2006, 2006-2007, 2007-2008, and 2008-2009. The numbers of impacted vessels (>33 feet sailing draft) are similar across each category. There are fewer impacted vessels in 2007-2008 and 2008-2009 because of the softer economy affecting port cargoes for non-liner trades such as bulkers and general cargo. There is some shift in vessel sizes toward the largest dwt category, as observed for the bulkers and general cargo vessels. The container and tanker fleets show the most stability with respect to numbers and dwt size distributions prior to 2008-2009 For the most recent period, 2008-2009, there has been a further reduction of smaller container vessels, 20,000 to 30,000 dwt, in place of larger vessels, 30,000 to 40,000 dwt, and an increase in the larger vessels >50,000 dwt, which reflects the present of weekly MOL calls commenting in July 2008 at Blount Island as a precursor to weekly calls at the opening of their TraPac terminal at Dames Point in January 2009.[45]

Table 43 compares the three vessel fleets calling Jacksonville Harbor in 2005-2006, 2006-2007, and 2007-2008 with respect to Mile Point inbound restrictions (>33 feet sailing draft) as reported in the 2005 vessel call list. The 2005 vessel call list had a total of 150 restricted bulk calls, 186 restricted tanker calls, 116 restricted container calls, and 68 restricted general cargo calls (refer to column "Total Restricted Calls 2005").

Using the vessel names, the vessel calls in 2005-2006, 2006-2007, and 2007-2008 were matched against the 2005 vessel call list (refer to the column Total Matched Restricted Calls in Table 29).[46] For the 2005-2006 data, 103 bulk carrier calls were matched to the names of restricted bulk carriers that called in 2005. Similarly, 119 tanker, 84 container, and 56 general cargo vessel calls were matched with restricted vessel names in 2005. The matching of the names for 2005-2006 shows that 362 vessel names and calls were the same as the names and calls of restricted vessels in the 2005 restricted call list. For subsequent years, the matching was lower but still substantial. For 2006-2007, a total of 246 vessel calls were matched against the 2005 restricted vessel call list, and 241 calls from 2007-2008 were matched against the 2005 restricted vessel call list.

The Total Pilots Matched Calls in Table 29 is the total number of calls by vessels with identical names in 2005-2006, 2006-2007, and 2007-2008 compared to the 2005 restricted vessel call list. For example, there were 113 bulk vessel calls by the same name matched to bulk carrier names calling in 2005 that were restricted. For 2005-2006, a total of 442 restricted vessel calls were matched to the names of vessels calling in 2005. There continues to be a substantial match for 2006-2007 (278 vessel calls) and 2007-2008 (256 vessel calls).

[45] The MOL NWA calls at TraPac for the period January 2009 to September 2010 are outlined in Table 46.
[46] For example, a total of 59 bulk vessels in the 2005 vessel call list accounted for 150 calls. The Pilots log from 2005-2006 matched 40 of these vessels, which had 103 calls. The same 40 vessels had a total of 113 calls in the 2005-2006 Pilots log, of which 92 were Mile Point draft restricted (>33 ft sailing draft).

Table 42. Jacksonville Harbor Inbound Vessel Calls by DWT for Bulker, Tank, Container, and General Cargo Vessels

Vessel/dwt	Year 2005-2006	2006-2007	2007-2008	2008-2009
Bulker				
>50,000	55	69	75	89
>40,000, <50,000	60	54	45	45
>30,000, <40,000	46	42	24	14
>20,000, <30,000	23	21	6	2
<20,000	4	9	6	4
Total	188	195	156	154
Tanker				
>60,000	27	39	30	39
>50,000, <60,000	8	7	16	22
>40,000, <50,000	179	183	184	151
>30,000, <40,000	50	54	41	36
>20,000, <30,000	11	12	5	6
>10,000, <20,000	18	10	14	23
<10,000	7	4	3	3
Total	300	309	293	280
Container				
>50,000	42	42	44	72
>40,000, <50,000	8	6	3	7
>30,000, <40,000	20	26	46	83
>20,000, <30,000	141	110	92	59
<20,000	147	146	136	133
Total	358	330	321	354
General Cargo				
>40,000, <50,000	5	17	21	0
>30,000, <40,000	15	9	8	7
>20,000, <30,000	46	55	51	40
>10,000, <20,000	3	8	5	11
<10,000	160	141	120	132
Total	229	230	205	190

Notes: DWT = deadweight tonnes (metric) measure of vessel gross loading capacity.

Bulk vessels include Bulk Self-Unloading, Bulk, and Bulk with Vehicle Deck

Tank vessels include Chemical Product, Products, Crude Oil, Crude Oil/ Products Replenishment Tanker, Bulk Oil, Chemical Tanker, Asphalt/ Bitumen, and Tanker Unclassified.

Container vessels include Container Fully Cellular and Container/Ro-Ro.

General Cargo vessels include General Cargo, Heavy Load, and Open Hatch

Container vessel TEU capacities corresponding to dwt are approximately 4,000 (>50,000 dwt), 3,000 (>40,000 dwt), 2,000 (>30,000 dwt), 1,500 (20,000 dwt), and 1,000 (<20,000 dwt).

Source: G.E.C., Inc., from data provided by St. Johns Bar Pilot Association, April 2008 and November 2009.

Table 43. Jacksonville Harbor Draft Impacted Inbound Vessel Calls 2005 Matched with Vessel Draft Impacted Vessel Calls in 2005-2006, 2006-2007, 2007-2008, and 2008-2009

	Total Restricted Calls 2005	Total Matched Restricted Calls	Total Pilots Matched Calls	Matched Pilots Calls >33 ft	Matched Pilots Calls >33 ft/ Total Matched Restricted Calls	Matched Pilots Calls >33 ft/ Total Restricted Calls	Matched Pilots Calls >33 ft/ Total Pilots Matched Calls
2005-2006							
Bulk	150	103	113	92	89%	61%	81%
Tank	186	119	140	98	82%	53%	70%
Container	116	84	136	17	20%	15%	13%
General Cargo	68	56	53	40	71%	59%	75%
Total	520	362	442	247	68%	48%	56%
2006-2007							
Bulk	150	60	65	45	75%	30%	69%
Tank	186	53	65	38	72%	20%	58%
Container	116	80	105	15	19%	13%	14%
General Cargo	68	53	43	33	62%	49%	77%
Total	520	246	278	131	53%	25%	47%
2007-2008							
Bulk	150	69	52	40	58%	27%	77%
Tank	186	46	62	42	91%	23%	68%
Container	116	79	105	19	24%	16%	18%
General Cargo	68	47	37	31	66%	46%	84%
Total	520	241	256	132	55%	25%	52%
2008-2009							
Bulk	150	60	46	34	57%	23%	0%
Tank	186	53	54	30	57%	16%	0%
Container	116	80	99	0	0%	0%	0%
General Cargo	68	53	27	13	25%	19%	0%
Total	520	246	226	77	31%	15%	0%

Notes: Total Restricted Calls 2005 as defined in the Mile Point spreadsheet vessel call list received from Jacksonville District.
Total Matched Restricted Calls indicates the number of vessel names matched between Total Restricted Calls 2005 and Pilots data for 2005-2006, 2006-2007, and 2007-2008 with inbound sailing drafts 33 feet or more.
Total Pilots Matched Calls indicates the number of vessel names matched between Total Restricted Calls 2005 and Pilots data for 2005-2006, 2006-2007, and 2007-2008.
Matched Pilots Calls >33 ft indicates the number of ebb tide restricted vessels (sailing draft >33 ft) represented by the Total Matched Restricted Calls.
In total, the vessel call list received from the Corps shows there were 59 draft restricted bulk vessels that accounted for 150 calls in 2005. A search was performed to determine how many of these 59 vessels from the call list were recorded in the Pilots logs for March 2005- March2008. It was found that 29 of the 59 vessels appeared in the Pilots log for March 2005-March 2006, representing 103 calls in the vessel call list and 113 calls in the Pilots log. In the March 2006-March 2007 Pilots log, there was 15 vessels that appeared in the vessel call list and the Pilots log that matched 60 calls from the vessel call list and 65 calls from the Pilots log. In the March 2007-2008 Pilots log, there was 16 vessels that appeared both in the vessel call list and the Pilots log that matched 69 calls in the vessel call list and 52 from the Pilots log.

Source: G.E.C., Inc.

The column "Matched Pilots Calls >33 ft" is the number of Mile Point restricted vessel calls (>33 ft sailing draft) in years 2005-2006, 2007-2007, and 2007-2008 that could be matched to vessels in 2005. For 2005-2006, there were 92 bulk vessels with drafts >33 feet that could be matched to the names of bulk vessels in the 2005 restricted vessel call list. For 2005-2006, a total of 247 Mile Point restricted vessels (>33 ft sailing draft) could be matched to vessel names restricted in 2005. The significant change between 2005 and the subsequent years is that there are a large number of container vessel names that match (Total Matched Restricted Calls and Total Pilots Matched Calls), but comparatively few of the container vessels are actually draft restricted (>33 ft sailing draft) as per the column "Matched Pilots Calls >33 ft." Similar data for 2006-2007 and 2007-2008 indicate that matched Pilots calls >33 feet are nearly the same as total matched pilots calls for bulk, tanker, and general cargo vessels.

The column "Matched Pilots Calls >33 ft/Total Matched Restricted Calls" indicates how closely each category of vessels that was matched to 2005 was also restricted. In general, there is a high proportion of the matched Pilots calls >33 ft compared to the total restricted calls for all vessel categories other than container. For example, 89 percent and 75 percent of the total matched restricted bulk calls in 2005-2006 and 2006-2007, respectively, were >33 ft sailing draft. For containers, only 20 percent, 19 percent, and 24 percent of the total matched restricted calls for each year and 2005 were >33 ft sailing draft.

The column "Matched Pilots Calls >33 ft/Total Restricted Calls 2005" indicates how the population of restricted vessels has not changed over the periods 2005-2006, 2006-2007, and 2007-2008 compared to 2005. In 2005-2006, 61 percent, 53 percent, and 59 percent of the 2005 restricted vessel calls for bulk, tanker, and general cargo, respectively, could be matched to the names of the same vessels. For 2006-2007, 30 percent, 20 percent, and 49 percent of the bulk, tanker, and general cargo names, respectively, of restricted calls could be matched to 2005 restricted calls. For 2007-2008, 27 percent, 23 percent, and 46 percent of the bulk, tanker, and general cargo names, respectively, could be matched to the names of restricted vessel calls in 2005.

The column "Matched Pilots Calls >33 ft/Total Pilots Matched Calls" indicates the extent to which the different fleets are impacted by Mile Point (>33 ft sailing draft). For 2005-2006, 81 percent, 70 percent, and 75 percent of the total Pilots matched calls compared to 2005 were Mile Point restricted (>33 ft sailing draft) for bulk, tanker, and general cargo, respectively. For 2006-2007, 69 percent, 58 percent, and 77 percent of the bulk, tanker, and general cargo vessels, respectively, that could be matched to 2005 (Total Pilots Matched Restricted Calls) would be Mile Point draft restricted (>33 ft sailing draft). For 2007-2008, 77 percent, 68 percent, and 84 percent of the bulk, tanker, and general cargo vessels, respectively, that could be matched to 2005 (Total Pilots Matched Restricted Calls) would be Mile Point draft restricted (>33 ft sailing draft).

The comparative analysis of the vessel names and calls between 2005 and 2005-2006, 2006-2007, and 2007-2008 suggests that a large number of the same vessels in the fleet were calling Jacksonville Harbor during this period. This is particularly true for containers. However, except for containers, a substantial proportion of the vessel fleets calling Jacksonville Harbor are Mile Point restricted (>33 ft sailing draft). The implication is that other than container ships there is a substantial continuity among the names of the vessels calling Jacksonville Harbor that are Mile Point draft restricted (>33 ft sailing draft) between 2005 and the subsequent years of 2005-2006, 2006-2007, and 2007-2008.

The high degree of similarity between restricted vessels for 2005-2006, 2006-2007, 2007-2008, and 2008-2009 (except for container vessels) should be reflected in similar sailing draft distributions. Table 44 shows the sailing draft distributions that are Mile Point restricted (>33 ft) between 33 ft and 40 feet for 2005-2006, 2006-2007, 2007-2008, and 2008-2009. The data displayed for each vessel category (bulk, tanker, general cargo, and container) show the number of inbound calls by draft and the percentage of each year's restricted calls by sailing draft.

Table 44. Jacksonville Harbor Inbound Mile Point Impacted Sailing Draft Distribution, 2005-2009

Bulk	33 ft	34 ft	35 ft	36 ft	37 ft	38 ft	39 ft	40 ft	Total
2005-2006	20	4	7	32	25	21	4	16	129
2006-2007	12	0	10	28	11	26	14	27	128
2007-2008	1	1	21	12	7	29	23	33	127
2008-2009	4	2	4	11	6	40	33	32	132
Bulk Distribution									
2005-2006	16%	3%	5%	25%	19%	16%	3%	12%	100%
2006-2007	9%	0%	8%	22%	9%	20%	11%	21%	100%
2007-2008	1%	1%	17%	9%	6%	23%	18%	26%	100%
2008-2009	3%	2%	3%	8%	5%	30%	25%	24%	100%
Tank									
2005-2006	12	22	17	25	32	38	0	0	146
2006-2007	22	14	16	22	39	37	0	0	150
2007-2008	21	6	20	27	46	35	0	0	155
2008-2009	15	12	15	31	32	29	1	0	135
Tank Distribution									
2005-2006	8%	15%	12%	17%	22%	26%	0%	0%	100%
2006-2007	15%	9%	11%	15%	26%	25%	0%	0%	100%
2007-2008	14%	4%	13%	17%	30%	23%	0%	0%	100%
2008-2009	11%	9%	11%	23%	24%	21%	1%	0%	100%
General Cargo									
2005-2006	13	10	6	6	0	4	0	0	39
2006-2007	14	16	8	6	4	5	2	0	55
2007-2008	10	22	8	3	4	3	4	5	59
2008-2009	11	11	3	4	5	3	3	0	40
General Cargo Distribution									
2005-2006	33%	26%	15%	15%	0%	10%	0%	0%	100%
2006-2007	25%	29%	15%	11%	7%	9%	4%	0%	100%
2007-2008	17%	37%	14%	5%	7%	5%	7%	8%	100%
2008-2009	28%	28%	8%	10%	13%	8%	8%	0%	100%
Container									
2005-2006	15	3	0	0	0	0	0	0	18
2006-2007	11	4	0	0	0	0	0	0	15
2007-2008	17	4	3	1	0	0	0	0	25
2008-2009	15	10	7	6	3	1	1	0	43
Container Distribution									
2005-2006	83%	17%	0%	0%	0%	0%	0%	0%	100%
2006-2007	73%	27%	0%	0%	0%	0%	0%	0%	100%
2007-2008	68%	16%	12%	4%	0%	0%	0%	0%	100%
2008-2009	35%	23%	16%	14%	7%	2%	2%	0%	100%

Notes: Pilots data represents years 2005-2006, 2006-2007, 2007-2008, and 2008-2009.

Source: G.E.C., Inc.

In general, the 2005-2006 sailing draft distribution reflects a shift toward deeper drafts and related Mile Point impacts in other years. In subsequent years, there is a degree of shift in sailing draft distributions in the bulk and general cargo fleet towards deeper drafts. For example, 15 percent of the bulk vessels called with drafts 39 and 40 ft in 2005-2006, compared to 32 percent in 2006-2007, 44 percent in 2007-2008, and 49 percent in 2008-2009. For general cargo vessels, nearly all calls were less than 37 ft in 2005-2006 except for 10 percent that were 37 ft or more in 2005-2006, 20 percent that were 37 ft or more in 2006-2007, 27 percent that were 37 ft or more in 2007-2008, and 29 percent that were 37 ft or more in 2008-2009. The shift in the tanker distribution is less pronounced. In 2005-2006, 48 percent called at 37 and 38 ft compared to 51 percent in 2006-2007, 53 percent in 2007-2008 and 46 percent in 2008-2009. As noted earlier, there are comparatively few container vessels that are traditionally Mile Point draft impacted (>33 ft sailing draft) prior to 2009. Consequently, the sailing draft distribution in 2007-2008 appears similar to 2005-2006, although the number of affected vessels is 25 in 2007-2008 compared to 43 in 2008-2009. The sailing draft distribution for containers in 2008-2009 reflects deeper inbound drafts, 37 feet or more, not previously recorded in prior years. This should reflect the large Panamax vessels deployed by NWA for its TraPac related services (also calling Savannah Harbor).

5.3.4 Dames Point Container Vessel Sailing Draft Distributions

Between the period January 12, 2009, and September 2, 2010, there were a total of 129 container vessel calls at the TraPac Dames Point container terminal at Jacksonville Harbor. The calls consisted of 119 Panamax and 10 Post-Panamax vessels.[47]

Table 12 contains the vessel calls at TraPac from the commencement of operations, January 2009, to September 2010. For most of 2009 (after May), there was about one vessel call per week.[48] During the later part of 2009, the number of calls increased to two weekly and remained that way until June 2010 when a third weekly call was instituted. The most recent call is for Post-Panamax container vessels in a Southeast Asia ECUS Suez deployment. Otherwise, all of the other calls have had Panama Canal rotations and have been Panamax vessels.

Table 45 contains the sailing draft distributions inbound and outbound for the Panamax and Post-Panamax calls at TraPac Dames Point container terminal from its inception in January 2009 to September 2010. The Panamax inbound call sailing drafts range from 31 feet to 40 ft but are clustered in the 34 to 35 ft range. The Panamax outbound call sailing drafts range from 27 ft to 38 ft and are clustered in the 34 to 35 ft range. The Post-Panamax call sailing drafts to date (not

[47] During the period January through March 2009, there are only four recorded calls at TraPac (January 12, January 19, January 26 and February 25) that would be in the 2008-2009 database. There was one call in April (04/06) and two calls in May, and it appears that weekly calls commenced in June 2009. This period of time, January to June 2009, coincides with very weak container volumes, rationalization of services, and skipped port calls at Jacksonville for Mile Point schedule constraints.

[48] The initial plan of operations in January 2008 was for two weekly services calling Dames Point in addition to other ECUS ports, including Savannah. One of the two ECUS services was discontinued early in 2009 in response to declining box volumes for world trade lanes. The other service was affected subsequently by rationalization with another service which limited the box volumes that could be moved by MOL on this service due to a vessel sharing agreement.

affected by the Panama Canal) inbound range from 36 to 40 ft, clustered in the 36 to 38 ft range, and outbound sailing drafts range from 36 to 38 ft with the same cluster.

Table 45. Container Vessel Sailing Drafts Calling TraPac January 2009 to September 2010

	Post-Panamax		Panamax		
Draft	Inbound	Outbound	Inbound	Outbound	Total
40	1	0	1	0	2
39	1	0	0	0	1
38	2	3	12	15	32
37	4	5	12	5	26
36	2	2	9	17	30
35	0	0	21	23	44
34	0	0	39	31	70
33	0	0	13	15	28
32	0	0	9	9	18
31	0	0	3	2	5
30	0	0	0	1	1
27	0	0	0	1	1
Total	10	10	119	119	258

Sources: Jacksonville Port Authority; and G.E.C., Inc.

Table 46 contains the sailing draft distribution percentages for the Panamax (Panama Canal) and Post-Panamax (Suez Canal) services calling TraPac Dames Point between January 2009 and September 2010. In some instances, vessels have by passed Jacksonville or otherwise embarked to Savannah prior to calling Jacksonville, depending on Mile Point tidal delays, vessel drafts, and sailing schedules. From the perspective of Mile Point, about 40 percent of the current inbound Panamax calls would not be affected by the Mile Point tidal constraint.[49] From the perspective of Mile Point, only about 15 percent of the current outbound Panamax calls would be affected by the tidal constraint (>36 ft sailing draft).

Table 46 indicates that the Post-Panamax fleet of container vessel calls at Jacksonville are currently clustered at or above 36 ft sailing draft and all are consequently affected by the Mile Point inbound tidal draft constraint (>34 ft sailing draft) and substantially affected by the Mile Point outbound tidal draft constraint (>36 ft sailing draft). The Post-Panamax calls at Jacksonville are in a rotation that includes Halifax, New York, Norfolk, Jacksonville, and Savannah. Savannah is currently the last ECUS port rotation in response to heavy load cargoes such as forest products. Consequently, these vessels will leave Jacksonville with sufficient draft capacity to load more cargo, mostly heavy export variety, at Savannah before embarking from the ECUS to the Far East (Singapore). A change in rotation from Savannah as the last port of

[49] This assumes that all of these vessels that have called at the port have proven to have exceptional handling characteristics transiting to TraPac or Blount Island Terminals with a fresh water draft of 34 ft or less may start in at any time and any stage of the tide. It also assumes that none of these vessels sailing at 34 ft draft or less were otherwise light loaded to avoid Mile Point delays.

call for the ECUS would likely affect the outbound sailing drafts at Jacksonville that are now constrained by loading at Savannah as the last ECUS port call.

Table 46. Container Vessel Sailing Draft Distributions Calling TraPac January 2009 to September 2010

	Post-Panamax		Panamax		
Draft	Inbound	Outbound	Inbound	Outbound	Total
40	10.0%	0.0%	0.8%	0.0%	0.8%
39	10.0%	0.0%	0.0%	0.0%	0.4%
38	20.0%	30.0%	10.1%	12.6%	12.4%
37	40.0%	50.0%	10.1%	4.2%	10.1%
36	20.0%	20.0%	7.6%	14.3%	11.6%
35	0.0%	0.0%	17.6%	19.3%	17.1%
34	0.0%	0.0%	32.8%	26.1%	27.1%
33	0.0%	0.0%	10.9%	12.6%	10.9%
32	0.0%	0.0%	7.6%	7.6%	7.0%
31	0.0%	0.0%	2.5%	1.7%	1.9%
30	0.0%	0.0%	0.0%	0.8%	0.4%
27	0.0%	0.0%	0.0%	0.8%	0.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Sources: Jacksonville Port Authority; and G.E.C., Inc.

6.0 VESSEL TIDAL DELAY COSTS FOR MILE POINT ANALYSES

Vessel delay costs for Mile Point analyses were previously based on FY 2005 vessel operating costs that were updated to 2007 vessel operating costs. The FY 2007 vessel operating costs were compiled for at sea and at port situations that primarily reflect differences in fuel consumptions. The Mile Point vessel tidal delay costs were developed from a simple average of the at sea and the at port costs to reflect that tide delayed vessels would normally anchor off the coast or slow steam.[50]

The 2008 vessel costs are presented for more situations particular to vessel speeds and related fuel consumption at sea and at port.[51] The at sea conditions include service speed, economic speed, half power, and base idle. The in port conditions include within harbor channel transit, maneuvering, base idle, and dockside static condition. The 2008 vessel costs selected as most representative of "at sea" waiting for Mile Point inbound tidal delay was "base idle" and most representative of "in port" waiting for Mile Point outbound tidal was "dockside static" condition; that is, inbound vessels delayed by Mile Point would incur base idle at sea average total vessel

[50] The average of at sea hourly vessel costs and in port hourly vessel costs would reflect that tide delayed vessels would normally anchor off the coast or slow steam. The use of at sea hourly vessel costs assumes full fuel consumption associated with normal transit speeds, which is inconsistent with vessel that are delayed by tidal conditions at sea.

[51] The 2008 vessel operating costs represent a refinement of costs with respect to vessel speed and operation and fuel consumption that disaggregate the traditional "at sea" and "at port" conditions.

costs inclusive (Propulsion\Prime Mover(s) and Auxiliary Power Generation), and outbound vessels delayed by Mile Point would incur dockside static condition at port average total vessel costs inclusive (Propulsion\Prime Mover(s) and Auxiliary Power Generation).

The change from the 2008 report in the current analysis does not compute a composite vessel operating delay cost as a simple average of "at sea" and "in port." The current analysis computes the vessel inbound delay cost as "base idle" component at sea and "dockside/static condition" in port. These two costs are used independent of each other and are not averaged.[52]

The changes in the 2008 vessel operating costs will result in lower vessel unit (hourly) delay costs for two reasons. First, the 2008 vessel operating costs are generally lower than the 2007 vessel operating costs, particularly for container vessels. Second, the 2008 at sea "base idle" is about one-half of the 2007 "at sea" cost. The 2008 at port vessel "dockside/static condition" cost is about the same (slightly less) than the 2007 "in port" vessel cost.

As an illustration of the changes in vessel costs affecting the Mile Point delay costs, a large Panamax container vessel of 4,800 TEU capacity and about 65,000 dwt will be used. The old at sea hourly cost would be $2,852 based on the regression: $0.0405 * DWT + $220. The new at sea base idle hourly cost is computed to be $1,244 based on the regression: $0.014613 * DWT + $295. The old in port hourly cost would be $917 based on the regression: $0.0098*DWT + $280. The new in port hourly cost is computed to be $842 based on the regression: $0.008162 * DWT + $311. The average hourly delay cost for inbound and outbound vessels would be $1,884 based on the simple average of the old at sea hourly cost ($2,852) and the old in port hourly cost ($917). The average hourly delay cost for inbound and outbound vessels would currently be $1,244 and $842, respectfully. A container vessel delayed 4.30 hours inbound corresponding to a 38 ft sailing draft would have old costs of $8,101 ($1,884 * 4.30 hours = $8,101). A container vessel delayed 4.30 hours inbound corresponding to a 38 ft sailing draft would have revised costs of $5,349 ($1,244 * 4.30 hours = $5,349). Outbound container vessels sailing at 38 ft would have delay costs under the old costs of $8,101 ($1,884 * 4.30 = $8,101). Outbound container vessels sailing at 38 ft would have revised delay costs of $3,620 ($842 * 4.30 = $3,620). For this example, the revised inbound delay costs are 66 percent of the previous inbound delay costs ($5,349/$8,101 = 0.66). For this example, the revised outbound delay costs are 45 percent of the previous outbound delay costs ($3,620/$8,101 = 0.45).

Table 47 summarizes the regression coefficients for the major categories of affected vessels for the 2008 and 2007 costs.[53]

[52] Averaging would be appropriate if the same Mile Point sailing draft constraints existed for inbound and outbound and vessel drafts were the same or similar in both directions. Clearly this is not the case, particularly with bulk carriers usually discharging at Jacksonville. However, container vessel drafts inbound and outbound will tend to be similar because of the relatively small volumes of cargo transferred at any single port call.

[53] All vessel costs are based on a linear regression for dwt that is particular to each major vessel category and foreign versus U.S. flag.

Table 47. Vessel Operating Costs for Delay (Idle) at Sea and Port, 2007 and 2008

Vessel Type and Location	Daily/ Hourly	2008 Slope	2008 Intercept	2007 Slope	2007 Intercept
Foreign Flag Tanker At Sea	Daily	$0.137797	$9,018		
	Hourly	$0.005742	$376	$0.0056	$736
Foreign Flag Tank at Port	Daily	$0.122598	$7,269		
	Hourly	$0.005108	$303	$0.0032	$447
US Flag Tanker at Sea	Daily	$0.392916	$23,548		
	Hourly	$0.016371	$981	$0.0121	$1,583
US Flag Tanker at Port	Daily	$0.376921	$21,827		
	Hourly	$0.015705	$909	$0.0097	$1,294
Foreign Flag Bulker at Sea	Daily	$0.119055	$7,164		
	Hourly	$0.004961	$298	$0.0058	$587
Foreign Flag Bulker at Port	Daily	$0.103525	$5,425		
	Hourly	$0.004314	$226	$0.0034	$299
Cellular Foreign Flag at Sea	Daily	$0.350715	$7,069		
	Hourly	$0.014613	$295	$0.0405	$220
Cellular Foreign Flag in Port	Daily	$0.195880	$7,469		
	Hourly	$0.008162	$311	$0.0098	$280
Foreign Flag General Cargo at Sea	Daily	$0.393000	4095		
	Hourly	$0.016375	$171	$0.0237	$334
Foreign Flag General Cargo at Port	Daily	$0.356184	2670.7895		
	Hourly	$0.014841	$111	$0.0151	$146

Source: G.E.C., Inc. as adopted from FY 2007 and FY 2008 Vessel Operating Costs.

Aside from the differences in the composition and level of the vessel delay hourly costs, the current analysis will be different from the 2008 analysis for container vessels for several reasons.[54] First, the 2008 analysis was done in the absence of any historical sailing draft distribution for large Panamax container vessels calling Jacksonville Harbor on global trade routes. The 2008 analysis assumed an average inbound Panamax sailing draft of 37 ft, resulting in that all inbound TraPac (and Hanjin) Panamax container vessels were Mile Point delayed for inbound movements. However, in the absence of a historical sailing draft distribution, the 2008 analysis assumed that all outbound TraPac (and Hanjin) Panamax container vessels were not Mile Point delayed with sailing drafts 36 ft or less.

Second, the 2008 analysis was done in accordance with the St. Johns Bar Pilot Association "St. Johns River Navigational Guidelines" (2008) that stipulated that inbound vessels drawing more than 33 ft fresh water would be Mile Point tidal constrained. The revised analysis uses the current St. Johns Bar Pilot Association Guidelines (2010) that stipulate that inbound vessels "that have called at the port and have proven to have exceptional handling characteristics, transiting to TraPac or Blount Island Terminals, with a fresh water draft of 34 ft or less, may start in at anytime and any stage of the tide" (refer to section 1.1). Thus, there has been a shift of the Bar Pilots operating procedures from 2008 that now allows certain vessels with "exceptional

[54] The original Mile Point draft report was submitted September 19, 2008. Minor revisions were subsequently made in response to review comments resulting in October 22, 2008, and February 12, 2009, reports. Hence, the previous analysis is referenced to 2008.

handling characteristics" to transit to TraPac/Blount Island terminals unrestricted by Mile Point with sailing drafts less than 34 ft instead of previously less than 33ft.[55] Therefore, there will be fewer vessels affected as per the current sailing draft distribution at least from the perspective of Panamax container vessels that normally would be expected to have drafts in the mid 30 ft range for the current Panama Canal configuration with a spread to the upper and lower 30 ft range (refer to Table 46).[56]

Table 46 indicated that the majority of the inbound TraPac Panamax container vessels affected by Panama Canal transits were affected by Mile Point inbound (>34 ft sailing draft) and not affected by Mile Point outbound (>36 ft sailing draft). This is similar to the 2008 analyses which assumed all inbound global Panamax container calls were affected by Mile Point and none of the outbound transits of the same fleet was affected by Mile Point (36 ft or less). Table 46 indicates that for the existing Post-Panamax ECUS rotation wherein Jacksonville is the next to last call before Savannah, all of the inbound transits are Mile Point affected (>34 ft sailing draft), and only 20 percent of the outbound transits are not Mile Point affected (<36 ft sailing draft).

The 2008 analysis would have assumed that the Panamax inbound transits called at an average of 37 ft, in the absence of any applicable historical (actual) sailing draft distribution data for these large Panamax in global trades, and departed at 36 ft draft or less.[57] The applicable Mile Point tidal delay cost would have been 4.105 hours * $1,184 = $7,734 inbound and $0 outbound for a total Mile Point tidal delay cost per call (inbound and outbound) of $7,734. The current analysis using Panamax sailing draft distribution applicable to the current Panama Canal would exclude nearly 54 percent of the inbound calls having sailing drafts 34 ft or less and include only 17 percent of the outbound calls more than 36-ft. sailing draft. The comparative costs for an equivalent delayed inbound vessel would be (4.105 hours *$1,244) * 0.46 = $2,349, and the comparative costs for an equivalent delayed outbound vessels would be (4.105 hours * $842) * 0.17 = $587.59. Total equivalent comparative costs for existing Panamax inbound and outbound would be $2,937 ($2,349 + $588 = $2,937). For the existing Panamax fleet, the changes in the vessel costs with respect to level and speed (fuel consumption) related changes and the existing sailing drafts (with a one foot higher inbound sailing draft allowance, 34 ft versus 33 ft) for Mile Point tidal delay occurrence results in lower effective equivalent delay costs, $7,734 in 2008 compared to $2,937 for the Panamax class affected by the existing Panama Canal.

The 2008 analyses did not explicitly allow for deeper Panamax sailing drafts with the completion of the expansion of the Panama Canal, and no Post-Panamax vessels were included in the analyses. The current analyses will include deeper sailing draft Panamax and Post-Panamax container vessels as applicable with an expanded Panama Canal for the with-project conditions. These deeper draft calls will be more Mile Point sailing draft impacted (>34 ft inbound and >36 ft outbound) and have larger hourly delays as a result, particularly when the Panama Canal fresh water draft of 38 ft is no longer applicable constraining the Panamax container drafts to usually

[55] Effectively, there has been a one foot reduction in the Mile Point inbound tidal delay constraint from 33ft (2008) to 34 ft (2010).

[56] Arguably, the Mile Point inbound tidal delay constraint raised from 33 ft to 34 ft will not impact much if any of a large Panamax fleet or Post-Panamax fleet calling with larger drafts that are not otherwise constrained by existing Panama Canal sailing drafts after the expansion of the Canal is completed circa 2014.

[57] Prior to January 2009, Jacksonville had seen virtually no major global container services calling with very large Panamax or Post-Panamax vessels.

this draft (38 ft fresh water) or less unless intermittent port calls result in increased sailing draft between the Canal and the ECUS ports above South Florida.

7.0 DETERMINE CURRENT COMMODITY MOVEMENT COST

7.1 INTRODUCTION

The Jacksonville District supplied a Mile Point benefit spreadsheet to be used for calculating the without-project delay costs and benefits resulting from with-project reductions of existing ebb tide constrained sailing drafts. The spreadsheet consists of ten worksheets (including various linkages among them) as follows: (1) Project Information; (2) Alternative Plans; (3) Growth; (4) Restriction WO Project; (5) Restriction W Project; (6) Ebb and Tide Delay Without; (7) Ebb and Tide Delay With; (8) Tide Tables; (9) Benefit Calculation; and (10) Vlookup.

The spreadsheet calculates the vessel average delay hours as a function of sailing draft and tides, effectively acting as a typical tide delay function, but with lower sailing draft tidal delay thresholds reflecting the Mile Point restrictions (>33 ft sailing draft inbound and >36 ft sailing draft outbound).[58] The Mile Point without-project inbound sailing draft restriction of >33 ft is used as the basis for all delay estimates except for the NWA vessels calling TraPac for which a 34 ft inbound delay threshold is used. The Mile Point inbound sailing draft restriction (>33 ft) is applied to a vessel call list contained in the worksheet Restriction WO Project to establish the delay time and associated vessel costs.[59] Modifications to the Mile Point sailing draft restriction as a result of with-project conditions are applied to a vessel call list contained in the worksheet Restriction W Project to establish the changes in delay time and associated vessel costs.

Once the baseline vessel delay costs are calculated for a particular vessel call list (interactions between the Restriction WO Project and Ebb and Tide Delay Without and between the Restriction W Project and Ebb and Tide Delay With), the Growth worksheet will allow the reductions in vessel delay costs associated with the different fleets (bulk, tanker, container, general cargo) to change in response to projected changes in vessel calls. The Growth worksheet allows for changes in the vessel calls for each year of the project life, 2015 to 2065.[60]

7.2 WITHOUT-PROJECT EBB TIDE DELAYS

The vessel call list was developed from the 2005 vessel call list contained in the spreadsheet as received from the District. The 2005 vessel call list was updated to reflect the current fleet composition (dwt and sailing draft) calling in 2007-2008 and 2009-2010. The time frame of four 12-month periods between 2005-2009 had been used to establish that the most recent 12 months in 2007-2008 or 2008-2009 appeared to be the most representative of the baseline fleet.

[58] The average expected delay based on tide cycles was 3.73 hours for sailing drafts 33 ft to 36 ft, then 4.105 hours for 37 ft, 4.305 hours for 38 ft, and 5.555 hours for 39 and 40 ft drafts. It should be noted that improvements to Mile Point would not eliminate that portion of the tide delays attributable to tide riding behavior with respect to sailing drafts greater than 38 ft for the existing 40 ft project and two-foot underkeel clearance allowances.

[59] Exceptions to the 33 ft sailing draft inbound constraint are noted for any applications to NWA vessels calling TraPac.

[60] The population growth rates are used for the Growth worksheet other than for new services associated with a planned Hanjin terminal at Dames Point.

Previously, it has been noted that there were distinct similarities with regard to the vessel fleets contained in the fleets calling in 2007-2008 and 2008-2009 (refer to Table 44). Table 48 contains an example of the Restriction WO Project (vessel call list).

The 2007-2008 and 2008-2009 Mile Point impacted sailing draft distributions from Table 44 were used to develop a current vessel call list for bulkers, general cargo, and containers (exclusive of container vessels calling TraPac which are only included in the last three months of the 2008-2009 data). The current Mile Point Restriction WO Project vessel call list consisted of 127 bulk vessel calls, 155 tanker vessel calls (differentiated by foreign and U.S. flag), 59 general cargo vessel calls, and 25 container vessel calls currently calling Jacksonville Harbor (other than at TraPac). Another 156 inbound and 156 outbound container calls are added to the vessel call list to reflect the 2010 TraPac container terminal that opened in 2009 and is largely not reflected in the 2007-2008 baseline. The 156 calls (inbound and outbound) reflect the current minimum of three container services each with weekly calls at Jacksonville Harbor. No other calls by other operators are included in the base year, but it is likely that some will occur in response to excess capacity at the facility.[61]

The 2005 vessel call list assumed a 40 ft sailing draft for the 4,000 TEU Panamax size NWA and other container line vessels that would be expected to call Jacksonville Harbor under the existing authorized project depth of 40 ft. The current analysis relies on the more recently observed sailing draft distributions for vessels calling TraPac since January 2009 (refer to Table 44). The without-project container vessel call list is projected to remain unchanged in size for the traditional fleet of regional services calling Talleyrand and Blount Island terminals. However, the NWA fleet of Panamax and Post-Panamax vessels is projected to shift to Post-Panamax vessels for the existing services transiting the Canal that are currently constrained to Panamax size and sailing drafts (38 ft Tropical Fresh Water).

The Restriction WO Project vessel call list is sorted by vessel type with respect to bulk, foreign flag tanker, U.S. flag tanker, general cargo, and container.[62] The calls are further sorted by sailing draft. The Post-Panamax sailing draft observed for the current service calling TraPac is used for the Post-Panamax services that would assume the Panamax deployments with the completed expansion of the Panama Canal (refer to Table 46).

8.0 DETERMINE ALTERNATIVE COMMODITY MOVEMENT COST

The vessel call list for Without-Project Ebb Tide Delays (Restriction WO Project) is used for the with-project conditions with respect to existing Mile Point tidal constraints (>33 ft sailing draft inbound and >36 ft sailing draft outbound). The reconfiguration of the training wall (Reconfiguration) was assumed to remove all Mile Point sailing draft restrictions (>33 ft sailing draft inbound and >36 ft sailing draft outbound) for all self-propelled vessels.[63]

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[61] The vessel call list in 2005 contained 175 Mitsui calls in addition to the container vessels previously identified as calling Jacksonville Harbor (refer to Table 30).

[62] The analysis of container vessels did not find any U.S. flag calls that were Mile Point restricted (>33 ft sailing draft).

[63] It is recognized that Pilots may make exceptions for particular specified individual vessels based on unique characteristics and handling circumstances.

Table 48. Restriction Without-Project (Vessel Call List) Example

Transit Code	Commodity	Flag	Vessel Type	Vessel Type Code	Deadweight (Short Tons)	Length Between Perpendiculars	Extreme Breadth	Actual Transit Draft (Feet)	Design Draft (Feet)	Speed (Knots per Hour)	Gross Cargo Capacity	Lading Weight Capacity by (Short Tons)	Volumetric Capacity (Cubic Meters)	Volumetric Capacity (Cubic Feet)	Stowage Factor (Cubic Feet Per Short Ton)
BRUSSEL	Bulk Cargo	MARS	BKF	BKF	45292	623.63	96.33	32.75	36.60	15.50	0.92	41649	50330	541744	1
TEXAS	Bulk Cargo	0	BAF	BAF	35204	502.20	83.97	32.92	34.51	19.00	0.91	32144	33000	355207	1
TEXAS	Bulk Cargo	0	BAF	BAF	35204	502.20	83.97	32.92	34.51	19.00	0.91	32144	33000	355207	1
TEXAS	Bulk Cargo	0	BAF	BAF	35204	502.20	83.97	33.00	34.51	19.00	0.91	32144	33000	355207	1
ANTWERPEN	Bulk Cargo	0	BKF	BKF	49912	623.63	96.33	33.50	36.60	15.50	0.92	45897	50330	541744	1
FANY	Bulk Cargo	0	BKF	BKF	48045	580.56	99.83	33.92	37.13	14.00	0.92	44180	53594	576877	1
TEXAS	Bulk Cargo	0	BAF	BAF	35204	502.20	83.97	34.50	34.51	19.00	0.91	32144	33000	355207	1
W. H. BLOUNT	Bulk Cargo	BAHA	BKF	BKF	72073	705.17	105.75	35.25	42.64	14.75	0.94	67445	75142	808816	1
BUNGA MELOR TIGA	Bulk Cargo	BAHA	BKF	BKF	47505	579.90	100.11	35.92	36.87	15.15	0.92	43684	54290	584369	1
FRONTIER STAR	Bulk Cargo	PANA	BKF	BKF	51437	593.68	101.68	35.58	38.11	14.50	0.92	47466	59820	643893	1

Transit Code	Lading Capacity by Volume	Applied Lading Capacity (Short Tons)	Bunkerage, Stores, Water, Crews (Short Tons)	Ballast (Short Tons)	Fully Loaded Transit Weight	Block Plane Coefficient	Water Plane Coefficient	Immersion Rate (Short Tons per Inch)	Deviation from Design Draft (Feet)	Applied Maximum Design Draft	Actual Maximum Design Draft	Actual Transit Draft	Expected Entry Delay	Hourly Vessel Operating Costs	Expected Entry Delay Cost	Maximum Entry Delay Cost
BRUSSEL	541744	41649	2429	340	44417	0.77	0.85	135.73	0.54	36.07	36.07	32.75	0.01	$539	$5	2,012
TEXAS	355207	32144	2040	264	34448	1.88	1.68	189.02	0.33	34.18	34.18	32.92	0.01	$966	$10	3,605
TEXAS	355207	32144	2040	264	34448	1.88	1.68	189.02	0.33	34.18	34.18	32.92	0.01	$966	$10	3,605
TEXAS	355207	32144	2040	264	34448	1.88	1.68	189.02	0.33	34.18	34.18	33.00	3.73	$966	$3,605	3,605
ANTWERPEN	541744	45897	2677	374	48948	0.77	0.85	135.73	0.59	36.01	36.01	33.50	3.73	$554	$2,065	2,065
FANY	576877	44180	2577	360	47117	0.79	0.86	132.96	0.58	36.54	36.54	33.92	3.73	$548	$2,044	2,044
TEXAS	355207	32144	2040	264	34448	1.88	1.68	189.02	0.33	34.18	34.18	34.50	3.73	$966	$3,605	3,605
W. H. BLOUNT	808816	67445	3086	541	71071	0.83	0.89	177.39	0.47	42.17	39.08	35.25	3.73	$623	$2,323	3,459
BUNGA MELOR TI	584369	43684	2548	356	46587	0.75	0.83	128.92	0.59	36.28	36.28	35.92	3.73	$546	$2,038	2,038
FRONTIER STAR	643893	47466	2647	386	50499	0.78	0.85	137.31	0.57	37.54	37.54	35.58	3.73	$558	$2,083	2,293

Source: G.E.C., Inc.

The Restriction W Project vessel call lists were adopted accordingly to reflect all affected existing and projected container vessels and inclusion of all vessels more than 38 ft sailing draft (Reconfiguration) from Mile Point ebb tide delays. However, vessels with more than 38 ft sailing draft were still tide delayed under the existing authorized channel depth and associated underkeel clearances.

9.0 DETERMINE FUTURE COMMODITY MOVEMENT COST

9.1 INTRODUCTION

The future without-project commodity projections are the same as the future with-project conditions with respect to the removal of the Mile Point tidal constraint. This section will develop the Mile Point tidal constrained fleets as subsets of the universe of the fleets for dry bulk cargo, liquid bulk cargo, general cargo and container cargo from the future without-project conditions projections (refer to Section 4.3) for the future with-project conditions. The container projections for Mile Point will reflect the traditional regional fleet, excluding Dames Point development, and the global fleet represented by Dames Point containerized cargo development (refer to sections 4.3.5 and 4.3.6).

9.2 DRY BULK

The future without-project and with-project dry bulk fleet affected by Mile Point is a subset of the total dry bulk fleet and related future without-project and future with-project projections calling Jacksonville Harbor (refer to Table 15). Table 49 contains the Mile Point fleet of tidal constrained dry bulk vessels as a subset of the universe of dry bulk commodity and vessel projections for the without-project conditions projections in Table 15. The base year dry bulk fleet, 2007-2008, impacted by Mile Point is projected to grow based on north Florida population projections from a total of 127 vessel calls in 2008 to 274 vessel calls by 2064. The Mile Point impacted dry bulk fleet consists of 72 calls >50,000 dwt, 42 calls >40,000 dwt, nine calls >30,000 dwt, two calls >20,000 dwt, and two calls less than 20,000 dwt for the base year, 2008. The projected annual calls by each dwt category are contained in Table 49.

9.3 LIQUID BULK

The future without-project and with-project liquid bulk fleet affected by Mile Point is a subset of the total liquid bulk fleet and related future without-project projections and future with-project projections calling Jacksonville Harbor (refer to Table 18). Table 50 contains the Mile Point fleet of tidal constrained liquid bulk vessels as a subset of the universe of liquid bulk commodity and vessel projections for without-project conditions in Table 18. The base year liquid bulk fleet, 2007-2008, impacted by Mile Point is not projected to grow but rather to remain constant over the period 2008-2064 at a total of 155 annual vessel calls. The Mile Point impacted liquid bulk fleet consists of 21 calls >60,000 dwt, nine calls >50,000 dwt, 102 calls >40,000 dwt, 21 calls >30,000 dwt, and two calls >20,000 dwt for the base year, 2008. The projected annual calls by each dwt category are contained in Table 50.

Table 49. Jacksonville Harbor Dry Bulk Commodity Projections Related to Mile Point Tidal Constraint: Future Without-Project and Future With-Project

Total Annual Dry Bulk Vessel Calls and WCSC Commodity Tons				
Year	Calls	STons (000)	Average	Mtons (000)
2005-2006	188	5,223	27,782	4,738
2006-2007	195	5,798	29,733	5,260
2007-2008	156	6,430	41,218	5,833
2008-2009	154	7,469	48,500	6,776

Total Annual Dry Bulk Vessel Calls Affected by Mile Point by Vessel Size (DWT)				
DWT	2005	2006	2007	2008
>50,000	70	73	72	75
>40,000	38	42	42	44
>30,000	15	9	9	9
>20,000	3	2	2	2
<20,000	3	2	2	2
Subtotal	129	128	127	132

Total Annual Mile Point Affected Dry Bulk Vessel Capacity (DWT) Calls by Vessel Size				
DWT	2005	2006	2007	2008
>50,000	3,150,000	3,285,000	3,564,000	4,050,000
>40,000	1,368,000	1,512,000	1,701,000	1,782,000
>30,000	405,000	243,000	283,500	283,500
>20,000	67,500	45,000	45,000	45,000
<20,000	40,500	27,000	27,000	27,000
Subtotal	5,031,000	5,112,000	5,620,500	6,187,500

	Dry Bulk	Growth Rates			DWT	>50,000	>40,000	>30,000	>20,000	<20,000
					DWT Share	63.41%	30.26%	5.04%	0.80%	0.48%
					Shipment Size	49,500	40,500	31,500	22,500	13,500
Year	Mtons (000)	Low	Medium	High	Total Calls					
2008	5,620	1.27	2.41	3.56	127	72	42	9	2	2
2009	5,755	1.27	2.41	3.56	130	74	43	9	2	2
2010	5,894	1.27	2.41	3.56	133	76	44	9	2	2
2011	6,036	1.27	2.41	3.56	136	77	45	10	2	2
2012	6,182	1.27	2.41	3.56	140	79	46	10	2	2
2013	6,331	1.27	2.41	3.56	143	81	47	10	2	2
2014	6,483	1.27	2.41	3.56	146	83	48	10	2	2
2015	6,639	1.27	2.41	3.56	150	85	50	11	2	2
2016	6,746	0.69	1.61	2.55	152	86	50	11	2	2
2017	6,855	0.69	1.61	2.55	155	88	51	11	2	2
2018	6,965	0.69	1.61	2.55	157	89	52	11	2	2
2019	7,077	0.69	1.61	2.55	160	91	53	11	3	3
2020	7,191	0.69	1.61	2.55	162	92	54	12	3	3
2021	7,288	0.42	1.34	2.31	165	93	54	12	3	3
2022	7,385	0.42	1.34	2.31	167	95	55	12	3	3
2023	7,484	0.42	1.34	2.31	169	96	56	12	3	3
2024	7,585	0.42	1.34	2.31	171	97	57	12	3	3
2025	7,686	0.42	1.34	2.31	174	98	57	12	3	3
2026	7,777	0.22	1.18	2.16	176	100	58	12	3	3
2027	7,869	0.22	1.18	2.16	178	101	59	13	3	3
2028	7,962	0.22	1.18	2.16	180	102	59	13	3	3
2029	8,056	0.22	1.18	2.16	182	103	60	13	3	3
2030	8,151	0.22	1.18	2.16	184	104	61	13	3	3
2031	8,247	0.22	1.18	2.16	186	106	62	13	3	3
2032	8,344	0.22	1.18	2.16	189	107	62	13	3	3
2033	8,443	0.22	1.18	2.16	191	108	63	14	3	3
2034	8,542	0.22	1.18	2.16	193	109	64	14	3	3
2035	8,643	0.22	1.18	2.16	195	111	65	14	3	3
2036	8,745	0.22	1.18	2.16	198	112	65	14	3	3
2037	8,848	0.22	1.18	2.16	200	113	66	14	3	3
2038	8,953	0.22	1.18	2.16	202	115	67	14	3	3
2038	9,058	0.22	1.18	2.16	205	116	68	15	3	3
2040	9,165	0.22	1.18	2.16	207	117	68	15	3	3
2041	9,273	0.22	1.18	2.16	210	119	69	15	3	3
2042	9,383	0.22	1.18	2.16	212	120	70	15	3	3
2043	9,493	0.22	1.18	2.16	215	122	71	15	3	3
2044	9,605	0.22	1.18	2.16	217	123	72	15	3	3
2045	9,719	0.22	1.18	2.16	220	125	73	16	3	3
2046	9,833	0.22	1.18	2.16	222	126	73	16	3	3
2047	9,950	0.22	1.18	2.16	225	127	74	16	4	4
2048	10,067	0.22	1.18	2.16	227	129	75	16	4	4
2049	10,186	0.22	1.18	2.16	230	130	76	16	4	4
2050	10,306	0.22	1.18	2.16	233	132	77	17	4	4
2051	10,428	0.22	1.18	2.16	236	134	78	17	4	4
2052	10,551	0.22	1.18	2.16	238	135	79	17	4	4
2053	10,675	0.22	1.18	2.16	241	137	80	17	4	4
2054	10,801	0.22	1.18	2.16	244	138	81	17	4	4
2055	10,928	0.22	1.18	2.16	247	140	82	17	4	4
2056	11,057	0.22	1.18	2.16	250	142	83	18	4	4
2057	11,188	0.22	1.18	2.16	253	143	84	18	4	4
2058	11,320	0.22	1.18	2.16	256	145	85	18	4	4
2059	11,454	0.22	1.18	2.16	259	147	86	18	4	4
2060	11,589	0.22	1.18	2.16	262	148	87	19	4	4
2061	11,725	0.22	1.18	2.16	265	150	88	19	4	4
2062	11,864	0.22	1.18	2.16	268	152	89	19	4	4
2063	12,004	0.22	1.18	2.16	271	154	90	19	4	4
2064	12,145	0.22	1.18	2.16	274	156	91	19	4	4

Notes: Calls = total annual number of dry bulk vessel calls at Jacksonville Harbor.
STons = total calendar year WCSC foreign dry bulk short tons.
Average = average dry bulk short tons per vessel call.
Mtons = total calendar year WCSC foreign dry bulk metric tons.
DWT = deadweight cargo capacity of vessels
Capacity = Total DWT applied to each vessel category and annual calls.
Growth Rates = Hinterland population projections.
DWT Share = Share of total annual commodity tons carried on each vessel size category.
Shipment Size = Estimated average shipment size for each vessel size category.

Source: GEC, Inc.

Table 50. Jacksonville Harbor Liquid Bulk Commodity Projections Related to Mile Point Tidal Constraint: Future Without-Project and Future With-Project

Total Annual Liquid Bulk Vessel Calls and WCSC Commodity Tons				
Year	Calls	STons (000)	Average	Mtons (000)
2005-2006	300	8,719	29,063	7,910
2006-2007	309	9,037	29,246	8,198
2007-2008	293	7,532	25,706	6,833
2008-2009	280	7,476	26,700	6,782

Total Annual Liquid Bulk Vessel Calls Affected by Mile Point by Vessel Size (DWT)				
DWT	2005	2006	2007	2008
>60000	19	20	21	20
>50,000	8	9	9	9
>40,000	97	98	102	90
>30,000	20	21	21	15
>20,000	2	2	2	1
>10,000	0	0	0	0
<10,000	0	0	0	0
Subtotal	146	150	155	135

Total Annual Mile Point Affected Liquid Bulk Vessel Capacity (DWT) Calls by Vessel Size				
DWT	2005	2006	2007	2008
>60000	798,000	780,000	756,000	840,000
>50,000	280,000	315,000	270,000	270,000
>40,000	2,716,000	2,548,000	2,448,000	2,160,000
>30,000	420,000	441,000	378,000	270,000
>20,000	0	28,000	24,000	12,000
>10,000		0	0	0
<10,000	0	0	0	0
Subtotal	4,214,000	4,112,000	3,876,000	3,552,000

						DWT	>60,000	>50,000	>40,000	>30,000	>20,000	>10,000	<10,000
						DWT Share	0.195046	0.069659	0.631579	0.097523	0.006192	0	0
	Liquid Bulk	Growth Rates				Shipment Size	36000	30000	24000	18000	12000	0	0
Year	Mtons (000)	Low	Medium	High	Total Calls								
2008	3,876	0	0	0	155	21	9	102	21	2	0	0
2009	3,876	0	0	0	155	21	9	102	21	2	0	0
2010	3,876	0	0	0	155	21	9	102	21	2	0	0
2011	3,876	0	0	0	155	21	9	102	21	2	0	0
2012	3,876	0	0	0	155	21	9	102	21	2	0	0
2013	3,876	0	0	0	155	21	9	102	21	2	0	0
2014	3,876	0	0	0	155	21	9	102	21	2	0	0
2015	3,876	0	0	0	155	21	9	102	21	2	0	0
2016	3,876	0	0	0	155	21	9	102	21	2	0	0
2017	3,876	0	0	0	155	21	9	102	21	2	0	0
2018	3,876	0	0	0	155	21	9	102	21	2	0	0
2019	3,876	0	0	0	155	21	9	102	21	2	0	0
2020	3,876	0	0	0	155	21	9	102	21	2	0	0
2021	3,876	0	0	0	155	21	9	102	21	2	0	0
2022	3,876	0	0	0	155	21	9	102	21	2	0	0
2023	3,876	0	0	0	155	21	9	102	21	2	0	0
2024	3,876	0	0	0	155	21	9	102	21	2	0	0
2025	3,876	0	0	0	155	21	9	102	21	2	0	0
2026	3,876	0	0	0	155	21	9	102	21	2	0	0
2027	3,876	0	0	0	155	21	9	102	21	2	0	0
2028	3,876	0	0	0	155	21	9	102	21	2	0	0
2029	3,876	0	0	0	155	21	9	102	21	2	0	0
2030	3,876	0	0	0	155	21	9	102	21	2	0	0
2031	3,876	0	0	0	155	21	9	102	21	2	0	0
2032	3,876	0	0	0	155	21	9	102	21	2	0	0
2033	3,876	0	0	0	155	21	9	102	21	2	0	0
2034	3,876	0	0	0	155	21	9	102	21	2	0	0
2035	3,876	0	0	0	155	21	9	102	21	2	0	0
2036	3,876	0	0	0	155	21	9	102	21	2	0	0
2037	3,876	0	0	0	155	21	9	102	21	2	0	0
2038	3,876	0	0	0	155	21	9	102	21	2	0	0
2038	3,876	0	0	0	155	21	9	102	21	2	0	0
2040	3,876	0	0	0	155	21	9	102	21	2	0	0
2041	3,876	0	0	0	155	21	9	102	21	2	0	0
2042	3,876	0	0	0	155	21	9	102	21	2	0	0
2043	3,876	0	0	0	155	21	9	102	21	2	0	0
2044	3,876	0	0	0	155	21	9	102	21	2	0	0
2045	3,876	0	0	0	155	21	9	102	21	2	0	0
2046	3,876	0	0	0	155	21	9	102	21	2	0	0
2047	3,876	0	0	0	155	21	9	102	21	2	0	0
2048	3,876	0	0	0	155	21	9	102	21	2	0	0
2049	3,876	0	0	0	155	21	9	102	21	2	0	0
2050	3,876	0	0	0	155	21	9	102	21	2	0	0
2051	3,876	0	0	0	155	21	9	102	21	2	0	0
2052	3,876	0	0	0	155	21	9	102	21	2	0	0
2053	3,876	0	0	0	155	21	9	102	21	2	0	0
2054	3,876	0	0	0	155	21	9	102	21	2	0	0
2055	3,876	0	0	0	155	21	9	102	21	2	0	0
2056	3,876	0	0	0	155	21	9	102	21	2	0	0
2057	3,876	0	0	0	155	21	9	102	21	2	0	0
2058	3,876	0	0	0	155	21	9	102	21	2	0	0
2059	3,876	0	0	0	155	21	9	102	21	2	0	0
2060	3,876	0	0	0	155	21	9	102	21	2	0	0
2061	3,876	0	0	0	155	21	9	102	21	2	0	0
2062	3,876	0	0	0	155	21	9	102	21	2	0	0
2063	3,876	0	0	0	155	21	9	102	21	2	0	0
2064	3,876	0	0	0	155	21	9	102	21	2	0	0

Notes: Calls = total annual number of liquid bulk vessel calls at Jacksonville Harbor.
STons = total calendar year WCSC foreign and domestic liquid bulk short tons.
Average = average liquid bulk short tons per vessel call.
Mtons = total calendar year WCSC foreign and domestic liquid bulk metric tons.
DWT = deadweight cargo capacity of vessels.
Capacity = Total DWT applied to each vessel category and annual calls.
Growth Rates = Hinterland population projections.
DWT Share = Share of total annual commodity tons carried on each vessel size category.
Shipment Size = Estimated average shipment size for each vessel size category.

Source: GEC, Inc.

9.4 GENERAL CARGO

The future without-project and with-project general cargo fleet affected by Mile Point is a subset of the total general cargo fleet and related future without-project projections and future with-project projections calling Jacksonville Harbor (refer to Table 19). Table 51 contains the Mile Point fleet of tidal constrained general cargo vessels as a subset of the universe of general cargo commodity and vessel projections for without-project conditions in Table 19. The base year general cargo fleet, 2007-2008, impacted by Mile Point is projected to grow based on north Florida population projections from a total of 59 vessel calls in 2008 to 128 vessel calls by 2064. The Mile Point impacted general cargo fleet consists of 17 calls >40,000 dwt, six calls >30,000 dwt, and 36 calls >20,000 dwt for the base year, 2008. The projected annual calls by each dwt category are contained in Table 51.

9.5 CONTAINERIZED CARGO EXCLUDING DAMES POINT

The future without-project and with-project container fleet affected by Mile Point exclusive of Dames Point container terminal developments is a subset of the total container fleet and related future without-project projections and with-project projections calling Jacksonville Harbor (refer to Table 21). Table 52 contains the Mile Point fleet of tidal constrained container vessels as a subset of the universe of container commodity and vessel projections for without-project conditions in Table 21. The base year container fleet, 2007-2008, impacted by Mile Point is projected to grow based on north Florida population projections from a total of 25 vessel calls in 2008 to 54 vessel calls by 2064. The Mile Point impacted container fleet (excluding Dames Point) consists of 17 calls >50,000 dwt and eight calls >30,000 dwt for the base year, 2008. The projected annual calls by each dwt category are contained in Table 52.

9.6 DAMES POINT CONTAINERIZED CARGO

The future without-project and with-project container fleet calling present and prospective container terminals at Dames Point affected by Mile Point is developed from the container tonnage future without-project projections and with-project projections for these terminals (refer to Table 23). Table 53 develops the Dames Point container fleet of tidal constrained Panamax and Post-Panamax container vessel calls in response to the corresponding Dames Point container cargo without-project conditions projections in Table 23. The MOL/NWA TraPac vessel calls are based on an average of 370 total moves per call.[64] Year 2010 total moves, 57,500, would result in a total of 155 annual vessel calls (57,500 total annual moves/370 average total moves per call = 155 calls per year).

The base year total moves are projected to grow in response to growth in container cargo tons based on north Florida population projections (refer to Table 23). The base year fleet calls for TraPac (MOL/NWA) to grow from 155 vessel calls in 2010 to 549 vessel calls by 2064. The prospective Hanjin Dames Point marine container terminal has total base year moves of loaded and empty boxes of 120,749. Hanjin/CKYH calls are based on an average of 525 total moves

[64] Container terminal productivity for shore side cranes is measured in moves between the vessel and shore that customarily assume one box per move regardless of the size of the box or loaded or empty status of the box. From the standpoint of container crane productivity, box size or status has no effect assuming one box per move.

Table 51. Jacksonville Harbor General Cargo Commodity Projections Related to Mile Point Tidal Constraint: Future Without-Project and Future With-Project

Total Annual General Cargo Vessel Calls and Jax Port Break Bulk Commodity Tons				
Year	Calls	STons (000)	Average	Mtons (000)
2005-2006	229	1,213	5,297	1,100
2006-2007	230	1,162	5,052	1,054
2007-2008	205	953	4,649	865
2008-2009	190	775	4,079	703

Total Annual General Cargo Vessel Calls Affected by Mile Point by Vessel Size (DWT)				
DWT	2005	2006	2007	2008
>40,000	2	16	17	10
>30,000	4	5	6	3
>20,000	33	34	36	27
>10,000		0	0	0
<10,000		0	0	0
Subtotal	39	55	59	40

Total Annual General Cargo Vessel Capacity (DWT) Calls by Vessel Size				
DWT	2005	2006	2007	2008
>40,000	24,000	192,000	204,000	120,000
>30,000	36,000	45,000	45,000	27,000
>20,000	198,000	204,000	180,000	162,000
>10,000	0	0	0	0
<10,000	0	0	0	0
Subtotal	258,000	441,000	429,000	309,000

					DWT	>40,000	>30,000	>20,000	>10,000	<10,000
					DWT Share	0.475524	0.104895	0.41958	0	0
	Break Bulk	Growth Rates			Shipment Size	12000	7500	5000	0	0
Year	Mtons (000)	Low	Medium	High	Total Calls					
2008	429	1.27	2.41	3.56	59	17	6	36	0	0
2009	439	1.27	2.41	3.56	60	17	6	37	0	0
2010	450	1.27	2.41	3.56	62	18	6	38	0	0
2011	461	1.27	2.41	3.56	63	18	6	39	0	0
2012	472	1.27	2.41	3.56	65	19	7	40	0	0
2013	483	1.27	2.41	3.56	66	19	7	41	0	0
2014	495	1.27	2.41	3.56	68	20	7	42	0	0
2015	507	1.27	2.41	3.56	70	20	7	43	0	0
2016	515	0.69	1.61	2.55	71	20	7	43	0	0
2017	523	0.69	1.61	2.55	72	21	7	44	0	0
2018	532	0.69	1.61	2.55	73	21	7	45	0	0
2019	540	0.69	1.61	2.55	74	21	8	45	0	0
2020	549	0.69	1.61	2.55	75	22	8	46	0	0
2021	556	0.42	1.34	2.31	77	22	8	47	0	0
2022	564	0.42	1.34	2.31	78	22	8	47	0	0
2023	571	0.42	1.34	2.31	79	23	8	48	0	0
2024	579	0.42	1.34	2.31	80	23	8	49	0	0
2025	587	0.42	1.34	2.31	81	23	8	49	0	0
2026	594	0.22	1.18	2.16	82	24	8	50	0	0
2027	601	0.22	1.18	2.16	83	24	8	50	0	0
2028	608	0.22	1.18	2.16	84	24	8	51	0	0
2029	615	0.22	1.18	2.16	85	24	9	52	0	0
2030	622	0.22	1.18	2.16	86	25	9	52	0	0
2031	630	0.22	1.18	2.16	87	25	9	53	0	0
2032	637	0.22	1.18	2.16	88	25	9	53	0	0
2033	644	0.22	1.18	2.16	89	26	9	54	0	0
2034	652	0.22	1.18	2.16	90	26	9	55	0	0
2035	660	0.22	1.18	2.16	91	26	9	55	0	0
2036	668	0.22	1.18	2.16	92	26	9	56	0	0
2037	675	0.22	1.18	2.16	93	27	9	57	0	0
2038	683	0.22	1.18	2.16	94	27	10	57	0	0
2038	691	0.22	1.18	2.16	95	27	10	58	0	0
2040	700	0.22	1.18	2.16	96	28	10	59	0	0
2041	708	0.22	1.18	2.16	97	28	10	59	0	0
2042	716	0.22	1.18	2.16	99	28	10	60	0	0
2043	725	0.22	1.18	2.16	100	29	10	61	0	0
2044	733	0.22	1.18	2.16	101	29	10	62	0	0
2045	742	0.22	1.18	2.16	102	29	10	62	0	0
2046	751	0.22	1.18	2.16	103	30	10	63	0	0
2047	759	0.22	1.18	2.16	104	30	11	64	0	0
2048	768	0.22	1.18	2.16	106	30	11	64	0	0
2049	778	0.22	1.18	2.16	107	31	11	65	0	0
2050	787	0.22	1.18	2.16	108	31	11	66	0	0
2051	796	0.22	1.18	2.16	109	32	11	67	0	0
2052	805	0.22	1.18	2.16	111	32	11	68	0	0
2053	815	0.22	1.18	2.16	112	32	11	68	0	0
2054	824	0.22	1.18	2.16	113	33	12	69	0	0
2055	834	0.22	1.18	2.16	115	33	12	70	0	0
2056	844	0.22	1.18	2.16	116	33	12	71	0	0
2057	854	0.22	1.18	2.16	117	34	12	72	0	0
2058	864	0.22	1.18	2.16	119	34	12	73	0	0
2059	874	0.22	1.18	2.16	120	35	12	73	0	0
2060	885	0.22	1.18	2.16	122	35	12	74	0	0
2061	895	0.22	1.18	2.16	123	35	13	75	0	0
2062	906	0.22	1.18	2.16	125	36	13	76	0	0
2063	916	0.22	1.18	2.16	126	36	13	77	0	0
2064	927	0.22	1.18	2.16	128	37	13	78	0	0

Notes: Calls = total annual number of general cargo vessel calls at Jacksonville Harbor.
STons = total calendar year JaxPort break bulk short tons.
Average = average break bulk short tons per vessel call.
Mtons = total calendar year JaxPort break bulk metric tons.
DWT = deadweight cargo capacity of vessels.
Capacity = Total DWT applied to each vessel category and annual calls.
Growth Rates = Hinterland population projections.
DWT Share = Share of total annual commodity tons carried on each vessel size category.
Shipment Size = Estimated average shipment size for each vessel size category.

Source: GEC., Inc.

Table 52. Jacksonville Harbor Containerized Cargo Commodity Projections Related to Mile Point Tidal Constraint Excluding Dames Point: Future Without-Project and Future With-Project

Total Annual Containerized Calls by All Vessels and Jax Port Containerized Commodity Tons				
Year	Total Calls	STons (000)	Average	Mtons (000)
2005-2006	824	4,075	4,943	3,697
2006-2007	765	3,658	4,756	3,308
2007-2008	780	3,600	4,580	3,266
2008-2009	838	3,894	4,675	3,533

Total Annual Container Cargo Vessel Calls Affected by Mile Point by Vessel Size (DWT)				
DWT	2005	2006	2007	2008
>50,000	0	7	17	33
>40,000	0	0	0	0
>30,000	9	8	8	10
>20,000	0	0	0	0
<20,000	0	0	0	0
Subtotal	18	15	25	43

Total Annual Container Cargo Self-Propelled Vessel Calls and Jax Port Containerized Commodity Tons				
Year	Total Calls	STons (000)	Average	Mtons (000)
2005-2006	358	1,770	4,945	1,606
2006-2007	330	1,569	4,756	1,424
2007-2008	321	1,470	4,580	1,334
2008-2009	354	1,655	4,675	1,501

Total Annual Container Cargo Vessel Capacity (DWT) Calls by Vessel Size				
DWT	2005	2006	2007	2008
>50,000	75,600	58,800	142,800	231,000
>40,000	0	0	0	0
>30,000	44,100	39,200	39,200	49,000
>20,000	0	0	0	0
<20,000	0	0	0	0
Subtotal	119,700	98,000	182,000	280,000

					DWT	>50,000	>40,000	>30,000	>20,000	<20,000
	Container Cargo	Growth Rates			DWT Share	0.784615	0	0.215385	0	0
					Shipment Size	9400	0	4900	0	0
Year	Mtons (000)	Low	Medium	High	Total Calls					
2008	182	1.27	2.41	3.56	25	17	0	8	0	0
2009	186	1.27	2.41	3.56	26	17	0	8	0	0
2010	191	1.27	2.41	3.56	26	18	0	8	0	0
2011	195	1.27	2.41	3.56	27	18	0	9	0	0
2012	200	1.27	2.41	3.56	27	19	0	9	0	0
2013	205	1.27	2.41	3.56	28	19	0	9	0	0
2014	210	1.27	2.41	3.56	29	20	0	9	0	0
2015	215	1.27	2.41	3.56	30	20	0	9	0	0
2016	218	0.69	1.61	2.55	30	20	0	10	0	0
2017	222	0.69	1.61	2.55	30	21	0	10	0	0
2018	226	0.69	1.61	2.55	31	21	0	10	0	0
2019	229	0.69	1.61	2.55	31	21	0	10	0	0
2020	233	0.69	1.61	2.55	32	22	0	10	0	0
2021	236	0.42	1.34	2.31	32	22	0	10	0	0
2022	239	0.42	1.34	2.31	33	22	0	11	0	0
2023	242	0.42	1.34	2.31	33	23	0	11	0	0
2024	246	0.42	1.34	2.31	34	23	0	11	0	0
2025	249	0.42	1.34	2.31	34	23	0	11	0	0
2026	252	0.22	1.18	2.16	35	24	0	11	0	0
2027	255	0.22	1.18	2.16	35	24	0	11	0	0
2028	258	0.22	1.18	2.16	35	24	0	11	0	0
2029	261	0.22	1.18	2.16	36	24	0	11	0	0
2030	264	0.22	1.18	2.16	36	25	0	12	0	0
2031	267	0.22	1.18	2.16	37	25	0	12	0	0
2032	270	0.22	1.18	2.16	37	25	0	12	0	0
2033	273	0.22	1.18	2.16	38	26	0	12	0	0
2034	277	0.22	1.18	2.16	38	26	0	12	0	0
2035	280	0.22	1.18	2.16	38	26	0	12	0	0
2036	283	0.22	1.18	2.16	39	26	0	12	0	0
2037	287	0.22	1.18	2.16	39	27	0	13	0	0
2038	290	0.22	1.18	2.16	40	27	0	13	0	0
2039	293	0.22	1.18	2.16	40	27	0	13	0	0
2040	297	0.22	1.18	2.16	41	28	0	13	0	0
2041	300	0.22	1.18	2.16	41	28	0	13	0	0
2042	304	0.22	1.18	2.16	42	28	0	13	0	0
2043	307	0.22	1.18	2.16	42	29	0	14	0	0
2044	311	0.22	1.18	2.16	43	29	0	14	0	0
2045	315	0.22	1.18	2.16	43	29	0	14	0	0
2046	318	0.22	1.18	2.16	44	30	0	14	0	0
2047	322	0.22	1.18	2.16	44	30	0	14	0	0
2048	326	0.22	1.18	2.16	45	30	0	14	0	0
2049	330	0.22	1.18	2.16	45	31	0	14	0	0
2050	334	0.22	1.18	2.16	46	31	0	15	0	0
2051	338	0.22	1.18	2.16	46	32	0	15	0	0
2052	342	0.22	1.18	2.16	47	32	0	15	0	0
2053	346	0.22	1.18	2.16	47	32	0	15	0	0
2054	350	0.22	1.18	2.16	48	33	0	15	0	0
2055	354	0.22	1.18	2.16	49	33	0	16	0	0
2056	358	0.22	1.18	2.16	49	33	0	16	0	0
2057	362	0.22	1.18	2.16	50	34	0	16	0	0
2058	367	0.22	1.18	2.16	50	34	0	16	0	0
2059	371	0.22	1.18	2.16	51	35	0	16	0	0
2060	375	0.22	1.18	2.16	52	35	0	16	0	0
2061	380	0.22	1.18	2.16	52	35	0	17	0	0
2062	384	0.22	1.18	2.16	53	36	0	17	0	0
2063	389	0.22	1.18	2.16	53	36	0	17	0	0
2064	393	0.22	1.18	2.16	54	37	0	17	0	0

Notes: Calls = total annual number of vessels for containerized cargo at Jacksonville Harbor.
STons = total calendar year JaxPort containerized cargo short tons.
Average = average containerized cargo short tons per vessel call.
Mtons = total calendar year Jax Port containerized cargo metric tons.
DWT = deadweight cargo capacity of vessels.
Capacity = Total DWT applied to each vessel category and annual calls.
Growth Rates = Hinterland population projections.
DWT Share = Share of total annual commodity tons carried on each vessel size category.
Shipment Size = Estimated average shipment size for each vessel size category.

Source: GEC, Inc.

Table 53. Dames Point Global Marine Container Terminal Projected Vessel Calls: Future Without-Project and Future With-Project

Year	TraPac/NWA Total Moves	TraPac/NWA Annual Calls	TraPac/NWA Calls/Week	Hanjin/CKYH Total Moves	Hanjin/CKYH Annual Calls	Hanjin/CKYH Calls/Week
2010	57,500	155	2.99	120,749	230	4.42
2011	58,886	159	3.06	123,660	236	4.53
2012	60,305	163	3.13	126,640	241	4.64
2013	61,758	167	3.21	129,692	247	4.75
2014	63,247	171	3.29	132,817	253	4.87
2015	64,771	175	3.37	136,018	259	4.98
2016	66,332	179	3.45	139,296	265	5.10
2017	67,930	184	3.53	142,653	272	5.23
2018	69,568	188	3.62	146,091	278	5.35
2019	71,244	193	3.70	149,612	285	5.48
2020	72,961	197	3.79	153,218	292	5.61
2021	74,719	202	3.88	156,910	299	5.75
2022	76,520	207	3.98	160,692	306	5.89
2023	78,364	212	4.07	164,564	313	6.03
2024	80,253	217	4.17	168,530	321	6.17
2025	82,187	222	4.27	172,592	329	6.32
2026	84,168	227	4.37	176,751	337	6.47
2027	86,196	233	4.48	181,011	345	6.63
2028	88,274	239	4.59	185,374	353	6.79
2029	90,401	244	4.70	189,841	362	6.95
2030	92,580	250	4.81	194,416	370	7.12
2031	94,811	256	4.93	199,102	379	7.29
2032	97,096	262	5.05	203,900	388	7.47
2034	99,436	269	5.17	208,814	398	7.65
2035	101,832	275	5.29	213,846	407	7.83
2036	104,286	282	5.42	219,000	417	8.02
2037	106,800	289	5.55	224,278	427	8.22
2038	109,373	296	5.68	229,683	437	8.41
2039	112,009	303	5.82	235,218	448	8.62
2040	114,709	310	5.96	240,887	459	8.82
2041	117,473	317	6.11	246,693	470	9.04
2042	120,304	325	6.25	252,638	481	9.25
2043	123,204	333	6.40	258,726	493	9.48
2044	126,173	341	6.56	264,962	505	9.71
2045	129,214	349	6.72	271,347	517	9.94
2046	132,328	358	6.88	277,887	529	10.18
2047	135,517	366	7.04	284,584	542	10.42
2048	138,783	375	7.21	291,442	555	10.68
2049	142,127	384	7.39	298,466	569	10.93
2050	145,553	393	7.57	305,659	582	11.20
2051	149,060	403	7.75	313,026	596	11.47
2052	152,653	413	7.93	320,569	611	11.74
2053	156,332	423	8.13	328,295	625	12.03
2054	160,099	433	8.32	336,207	640	12.32
2055	163,958	443	8.52	344,310	656	12.61
2056	167,909	454	8.73	352,608	672	12.92
2057	171,956	465	8.94	361,105	688	13.23
2058	176,100	476	9.15	369,808	704	13.55
2059	180,344	487	9.37	378,720	721	13.87
2060	184,690	499	9.60	387,848	739	14.21
2061	189,141	511	9.83	397,195	757	14.55
2062	193,700	524	10.07	406,767	775	14.90
2063	198,368	536	10.31	416,570	793	15.26
2064	203,148	549	10.56	426,610	813	15.63

Notes: Assumes average average annual projected population growth 2010-2030.
NWA = New World Alliance carriers.
CKYH = CKYH alliance carriers.
TraPac = Dames Point marine container terminal annual loaded boxes operated by TraPac for NWA.
Hanjin = Dames Point planned marine container terminal annual boxes operated by Hanjin for CKYH.
Total Moves = imports plus loaded and empty exports.
NWA Annual Calls reflect an average of 370 moves per call.
CKYH Annual Calls reflect an average of 525 moves per call.
Dames Point Hanjin Marine Container Terminal assumed operational by 2015.

Source: G.E.C., Inc.

per call. Year 2010 total moves grow to 136,018 moves by 2015, which is the projected time of the planned terminal to be operational. In 2015, the Hanjin/CKYH vessel calls would be 259 on 136,018 total moves (136,018 total annual moves/525 average total moves per call = 259 calls). This is projected to grow based on north Florida population growth projections to 813 vessel calls by 2064.

9.7 MARINE TERMINAL CARGO THROUGHPUT CAPACITY ESTIMATES

9.7.1 Dames Point Container Terminal

The existing TraPac terminal is a two-berth facility (2,400-foot continuous quay wall) capable of simultaneously berthing two Post-Panamax container ships with a total of six shore side cranes. The prospective Hanjin facility would be of similar berth size for two Post-Panamax container vessels. Marine container throughput (other things being equal) will be determined by berth capacity. The conventional wisdom is that congestion at marine container berths rises exponentially after berth occupancy reaches 70 percent. In the case of MOL/NWA and Hanjin/CKYH, there will likely be more latitude for higher berth occupancy since they control the operation of both the facilities and the vessels.

Using a 70 percent berth occupancy norm, the total annual vessel hours are 6,048 per berth or 12,096 for the facility (24 hours per day * 360 days per year = 8,640 hours * 0.70 = 6,048 hours per berth * 2 berths = 12,096 total vessel berthage hours available from the facility). If it is assumed that TraPac will use two shore side container cranes per vessel call and make an average of 30 moves per hour (loaded and empty boxes) for 370 moves per call, the vessel crane work time would be 6.17 hours (370 moves per call/60 moves per hour from two cranes = 6.17 vessel working hours). If the vessel dwells at the berth for a total of eight hours, annual TraPac berth occupancy would be 1,240 hours in 2010 (155 calls * 8 hours berth occupancy per call = 1,240 total berth occupancy hours). Berth occupancy in 2064 for projected 549 calls would be 4,392 hours (549 calls * 8 hours per call = 4,392 berth occupancy hours). Thus, there is little likelihood of any berth congestion affecting TraPac operations for the present and projected growth of annual calls. With a total of 158 acres of developed site, there is ample space for annual container throughput that is suggested by these calls and moves. For example, the total TraPac box moves projected in 2064, 203,148 (refer to Table 23), would correspond to approximately 365,000 TEUs. The available space suggests a container yard throughput capability at least double this volume.

Similarly, if we assume that the planned Hanjin/CKYH facility will use three shore side container cranes per vessel call and make an average of 30 moves per hour (loaded and empty boxes) for 525 moves per call, the vessel work time would be 5.83 hours (525 moves per call/90 moves per hour from three cranes = 5.83 vessel working hours). If the vessel dwells at the berth for a total of eight hours, annual Hanjin (CKYH) facility berth occupancy would be 2,072 hours in 2015 (259 calls * 8 hours berth occupancy per call = 2,072 total berth occupancy hours). Berth occupancy in 2064 for a projected 813 calls would be 6,504 hours (813 calls * 8 hours per call = 6,504 berth occupancy hours). Thus, there is little likelihood of any berth congestion affecting Hanjin/CKYH operations for the projected growth of annual calls. The Hanjin

throughput volume projected in 2064, 426,610 box moves (refer to Table 23), would correspond to approximately 770,000 TEUs. The available space for a fully developed Hanjin facility (roughly equal in size to the TraPac facility from an expansion option) suggests a container yard throughput capability sufficiently larger than this throughput volume to avoid any capacity constraints.

9.7.2 Dry Bulk Terminals

Table 15 indicates that the existing dry bulk cargoes as of 2008 were projected to increase from 6.776 million tons in 2008 to 14.644 million tons in 2064. The current Jacksonville Harbor dry bulk facility annual throughput capacities (excluding Keystone Terminal Facility under development and the cargo is not included in the Mile Point commodity projections 2008 base year) are as follows: (1) Jacksonville Electric Authority coal – 4.0 million tons; (2) Jacksonville Electric Authority coke, coal and limestone – 6.0 million tons; (3) Rinker Materials – 4.2 million tons; (4) Martin Marietta Materials – 4.0 million tons; and (5) Vulcan (Florida Rock) 4.0 million tons. Total dry bulk capacity for the cargoes projected in 2008 is 22.2 million tons annually.

9.7.3 General Cargo Terminals

General cargo is projected to grow from 865,000 tons in 2008 (refer to Table 19) to 1.869 million tons in year 2064. Break bulk cargo is handled at Talleyrand and Blount Island terminals. Jax Port regards that there is ample current capacity to handle all of the projected general cargo at these facilities.

9.8 FUTURE WITHOUT-PROJECT AND WITH-PROJECT FLEETS AFFECTED BY MILE POINT

Table 54 contains the expected number of annual vessel calls affected by Mile Point for the period 2010 to 2064. Growth rates in the number of annual vessel calls and resulting Mile Point delay savings were specified for each vessel category other than liquid bulk using the population growth rates (refer to Table 11).[65] Table 38 reflects TraPac container calls of three weekly services. The vessels would be Mile Point tidal delay impacted for both inbound and outbound movements. Other vessels, Container, Dry Bulk, General Cargo and Liquid Bulk, are impacted only for inbound movements (>33 ft. sailing drafts).

Tables 55, 56, and 57 reflect the expansion of Dames Point marine container terminals to include a new Hanjin facility that would be operational in 2015. The CKYH alliance that has five services at Savannah Harbor would call Dames Point at a planned Hanjin terminal. The CKYH services are shown for three calls per week (Table 55), four calls per week (Table 56), and five calls per week (Table 57).

Tables 55, 56, and 57 will serve as vessel call lists for the subsequent Case 1 analysis that looks at the non-traditional global container fleets calling Dames Point (TraPac and Hanjin terminals) for the 50-year period of analysis with annual growth corresponding to the population growth

[65] The projected growth rate for liquid cargoes at Jacksonville Harbor was zero (no growth).

Table 54. Annual Vessel Calls Affected By Mile Point, with Traditional Containers and TraPac, 2010 - 2064

Year	TraPac Out	TraPac In	Container	Dry Bulk	General Cargo	Liquid Bulk	Total
2010	156	156	25	127	59	154	677
2011	160	160	26	130	60	154	690
2012	164	164	26	133	62	154	703
2013	168	168	27	136	63	154	716
2014	172	172	27	140	65	154	729
2015	174	174	28	142	66	154	739
2016	177	177	28	144	67	154	748
2017	180	180	29	147	68	154	758
2018	183	183	29	149	69	154	767
2019	186	186	30	151	70	154	777
2020	188	188	30	153	71	154	785
2021	191	191	31	155	72	154	794
2022	193	193	31	157	73	154	802
2023	196	196	31	160	74	154	811
2024	199	199	32	162	75	154	820
2025	201	201	32	164	76	154	828
2026	203	203	33	166	77	154	836
2027	206	206	33	168	78	154	844
2028	208	208	33	169	79	154	852
2029	211	211	34	171	80	154	860
2030	213	213	34	173	80	154	867
2031	215	215	34	175	81	154	874
2032	217	217	35	177	82	154	882
2033	219	219	35	178	83	154	889
2034	221	221	35	180	84	154	896
2035	224	224	36	182	85	154	904
2036	226	226	36	184	85	154	911
2037	228	228	37	186	86	154	919
2038	230	230	37	188	87	154	926
2039	233	233	37	189	88	154	934
2040	235	235	38	191	89	154	942
2041	237	237	38	193	90	154	950
2042	240	240	38	195	91	154	958
2043	242	242	39	197	92	154	966
2044	245	245	39	199	92	154	974
2045	247	247	40	201	93	154	982
2046	249	249	40	203	94	154	990
2047	252	252	40	205	95	154	999
2048	254	254	41	207	96	154	1,007
2049	257	257	41	209	97	154	1,016
2050	260	260	42	211	98	154	1,024
2051	262	262	42	213	99	154	1,033
2052	265	265	42	216	100	154	1,042
2053	267	267	43	218	101	154	1,051
2054	270	270	43	220	102	154	1,060
2055	273	273	44	222	103	154	1,069
2056	276	276	44	224	104	154	1,078
2057	278	278	45	227	105	154	1,087
2058	281	281	45	229	106	154	1,096
2059	284	284	45	231	107	154	1,106
2060	287	287	46	233	108	154	1,115
2061	290	290	46	236	110	154	1,125
2062	293	293	47	238	111	154	1,135
2063	295	295	47	241	112	154	1,145
2064	298	298	48	243	113	154	1,154

Notes: TraPac has three weekly calls in 2010. Vessel drafts are Mile Point affected in both directions.

Source: G.E.C, Inc.

Table 55. Annual Vessel Calls Affected By Mile Point, with Traditional Containers, TraPac, 2010 - 2064 and CKYH (3 calls/week) in 2015

Year	CKYH out	CKYH In	TraPac Out	TraPac In	Container	Dry Bulk	General Cargo	Liquid Bulk	Total
2010			156	156	25	127	59	154	677
2011			160	160	26	130	60	154	690
2012			164	164	26	133	62	154	703
2013			168	168	27	136	63	154	716
2014			172	172	27	140	65	154	729
2015	156	156	174	174	28	142	66	154	1,051
2016	159	159	177	177	28	144	67	154	1,065
2017	161	161	180	180	29	147	68	154	1,080
2018	164	164	183	183	29	149	69	154	1,095
2019	166	166	186	186	30	151	70	154	1,110
2020	169	169	188	188	30	153	71	154	1,122
2021	171	171	191	191	31	155	72	154	1,135
2022	173	173	193	193	31	157	73	154	1,149
2023	175	175	196	196	31	160	74	154	1,162
2024	178	178	199	199	32	162	75	154	1,175
2025	180	180	201	201	32	164	76	154	1,187
2026	182	182	203	203	33	166	77	154	1,200
2027	184	184	206	206	33	168	78	154	1,212
2028	186	186	208	208	33	169	79	154	1,225
2029	188	188	211	211	34	171	80	154	1,237
2030	190	190	213	213	34	173	80	154	1,248
2031	192	192	215	215	34	175	81	154	1,259
2032	194	194	217	217	35	177	82	154	1,270
2033	196	196	219	219	35	178	83	154	1,281
2034	198	198	221	221	35	180	84	154	1,292
2035	200	200	224	224	36	182	85	154	1,304
2036	202	202	226	226	36	184	85	154	1,315
2037	204	204	228	228	37	186	86	154	1,327
2038	206	206	230	230	37	188	87	154	1,339
2039	208	208	233	233	37	189	88	154	1,350
2040	210	210	235	235	38	191	89	154	1,362
2041	212	212	237	237	38	193	90	154	1,375
2042	214	214	240	240	38	195	91	154	1,387
2043	217	217	242	242	39	197	92	154	1,399
2044	219	219	245	245	39	199	92	154	1,412
2045	221	221	247	247	40	201	93	154	1,424
2046	223	223	249	249	40	203	94	154	1,437
2047	225	225	252	252	40	205	95	154	1,450
2048	228	228	254	254	41	207	96	154	1,463
2049	230	230	257	257	41	209	97	154	1,476
2050	232	232	260	260	42	211	98	154	1,489
2051	235	235	262	262	42	213	99	154	1,502
2052	237	237	265	265	42	216	100	154	1,516
2053	239	239	267	267	43	218	101	154	1,529
2054	242	242	270	270	43	220	102	154	1,543
2055	244	244	273	273	44	222	103	154	1,557
2056	247	247	276	276	44	224	104	154	1,571
2057	249	249	278	278	45	227	105	154	1,585
2058	252	252	281	281	45	229	106	154	1,599
2059	254	254	284	284	45	231	107	154	1,614
2060	257	257	287	287	46	233	108	154	1,629
2061	259	259	290	290	46	236	110	154	1,643
2062	262	262	293	293	47	238	111	154	1,658
2063	264	264	295	295	47	241	112	154	1,673
2064	267	267	298	298	48	243	113	154	1,688

Notes: TraPac has three weekly calls in 2010. Vessel drafts are Mile Point affected in both directions.
CKYH calls commence with the completion of the Hanjin Dames Point marine container terminal at 2015.

Source: GEC, Inc.

Table 56. Annual Vessel Calls Affected By Mile Point, with Traditional Containers, TraPac, 2010 - 2064 and CKYH (4 calls/week) in 2015

Year	CKYH out	CKYH In	TraPac Out	TraPac In	Container	Dry Bulk	General Cargo	Liquid Bulk	Total
2010			156	156	25	127	59	154	677
2011			160	160	26	130	60	154	690
2012			164	164	26	133	62	154	703
2013			168	168	27	136	63	154	716
2014			172	172	27	140	65	154	729
2015	208	208	174	174	28	142	66	154	1,155
2016	211	211	177	177	28	144	67	154	1,171
2017	215	215	180	180	29	147	68	154	1,187
2018	218	218	183	183	29	149	69	154	1,204
2019	222	222	186	186	30	151	70	154	1,221
2020	225	225	188	188	30	153	71	154	1,235
2021	228	228	191	191	31	155	72	154	1,249
2022	231	231	193	193	31	157	73	154	1,264
2023	234	234	196	196	31	160	74	154	1,279
2024	237	237	199	199	32	162	75	154	1,294
2025	240	240	201	201	32	164	76	154	1,307
2026	243	243	203	203	33	166	77	154	1,321
2027	245	245	206	206	33	168	78	154	1,335
2028	248	248	208	208	33	169	79	154	1,349
2029	251	251	211	211	34	171	80	154	1,363
2030	254	254	213	213	34	173	80	154	1,375
2031	256	256	215	215	34	175	81	154	1,387
2032	259	259	217	217	35	177	82	154	1,399
2033	262	262	219	219	35	178	83	154	1,412
2034	264	264	221	221	35	180	84	154	1,424
2035	267	267	224	224	36	182	85	154	1,437
2036	269	269	226	226	36	184	85	154	1,450
2037	272	272	228	228	37	186	86	154	1,463
2038	275	275	230	230	37	188	87	154	1,476
2039	278	278	233	233	37	189	88	154	1,489
2040	280	280	235	235	38	191	89	154	1,503
2041	283	283	237	237	38	193	90	154	1,516
2042	286	286	240	240	38	195	91	154	1,530
2043	289	289	242	242	39	197	92	154	1,543
2044	292	292	245	245	39	199	92	154	1,557
2045	295	295	247	247	40	201	93	154	1,571
2046	298	298	249	249	40	203	94	154	1,586
2047	301	301	252	252	40	205	95	154	1,600
2048	304	304	254	254	41	207	96	154	1,614
2049	307	307	257	257	41	209	97	154	1,629
2050	310	310	260	260	42	211	98	154	1,644
2051	313	313	262	262	42	213	99	154	1,659
2052	316	316	265	265	42	216	100	154	1,674
2053	319	319	267	267	43	218	101	154	1,689
2054	322	322	270	270	43	220	102	154	1,704
2055	325	325	273	273	44	222	103	154	1,720
2056	329	329	276	276	44	224	104	154	1,735
2057	332	332	278	278	45	227	105	154	1,751
2058	335	335	281	281	45	229	106	154	1,767
2059	339	339	284	284	45	231	107	154	1,783
2060	342	342	287	287	46	233	108	154	1,800
2061	346	346	290	290	46	236	110	154	1,816
2062	349	349	293	293	47	238	111	154	1,833
2063	352	352	295	295	47	241	112	154	1,849
2064	356	356	298	298	48	243	113	154	1,866

Notes: TraPac has three weekly calls in 2010. Vessel drafts are Mile Point affected in both directions.
CKYH calls commence with the completion of the Hyundai Dames Point marine container terminal at 2015.

Source: G.E.C, Inc.

Table 57. Annual Vessel Calls Affected By Mile Point, with Traditional Containers, TraPac, 2010 - 2064 and CKYH (5 calls/week) in 2015

Year	CKYH out	CKYH In	TraPac Out	TraPac In	Container	Dry Bulk	General Cargo	Liquid Bulk	Total
2010			156	156	25	127	59	154	677
2011			160	160	26	130	60	154	690
2012			164	164	26	133	62	154	703
2013			168	168	27	136	63	154	716
2014			172	172	27	140	65	154	729
2015	260	260	174	174	28	142	66	154	1,259
2016	264	264	177	177	28	144	67	154	1,276
2017	268	268	180	180	29	147	68	154	1,294
2018	273	273	183	183	29	149	69	154	1,313
2019	277	277	186	186	30	151	70	154	1,331
2020	281	281	188	188	30	153	71	154	1,347
2021	285	285	191	191	31	155	72	154	1,363
2022	288	288	193	193	31	157	73	154	1,379
2023	292	292	196	196	31	160	74	154	1,396
2024	296	296	199	199	32	162	75	154	1,412
2025	300	300	201	201	32	164	76	154	1,427
2026	303	303	203	203	33	166	77	154	1,442
2027	307	307	206	206	33	168	78	154	1,458
2028	310	310	208	208	33	169	79	154	1,473
2029	314	314	211	211	34	171	80	154	1,488
2030	317	317	213	213	34	173	80	154	1,502
2031	320	320	215	215	34	175	81	154	1,515
2032	324	324	217	217	35	177	82	154	1,529
2033	327	327	219	219	35	178	83	154	1,543
2034	330	330	221	221	35	180	84	154	1,557
2035	333	333	224	224	36	182	85	154	1,571
2036	337	337	226	226	36	184	85	154	1,585
2037	340	340	228	228	37	186	86	154	1,599
2038	344	344	230	230	37	188	87	154	1,613
2039	347	347	233	233	37	189	88	154	1,628
2040	350	350	235	235	38	191	89	154	1,643
2041	354	354	237	237	38	193	90	154	1,658
2042	357	357	240	240	38	195	91	154	1,673
2043	361	361	242	242	39	197	92	154	1,688
2044	365	365	245	245	39	199	92	154	1,703
2045	368	368	247	247	40	201	93	154	1,719
2046	372	372	249	249	40	203	94	154	1,734
2047	376	376	252	252	40	205	95	154	1,750
2048	379	379	254	254	41	207	96	154	1,766
2049	383	383	257	257	41	209	97	154	1,782
2050	387	387	260	260	42	211	98	154	1,799
2051	391	391	262	262	42	213	99	154	1,815
2052	395	395	265	265	42	216	100	154	1,832
2053	399	399	267	267	43	218	101	154	1,848
2054	403	403	270	270	43	220	102	154	1,865
2055	407	407	273	273	44	222	103	154	1,882
2056	411	411	276	276	44	224	104	154	1,900
2057	415	415	278	278	45	227	105	154	1,917
2058	419	419	281	281	45	229	106	154	1,935
2059	423	423	284	284	45	231	107	154	1,953
2060	428	428	287	287	46	233	108	154	1,971
2061	432	432	290	290	46	236	110	154	1,989
2062	436	436	293	293	47	238	111	154	2,007
2063	441	441	295	295	47	241	112	154	2,026
2064	445	445	298	298	48	243	113	154	2,044

Notes: TraPac has three weekly calls in 2010. Vessel drafts are Mile Point affected in both directions.
CKYH calls commence with the completion of the Hanjin Dames Point marine container terminal at 2015.

Source: G.E.C, Inc.

(refer to Table 11).[66] Subsequently, sensitivity analyses will be conducted for other vessel calls that reflect different combinations of growth and non-traditional calls (TraPac and Hanjin facilities).

Future commodity movement cost has been determined for the present and projected vessel fleet calling Jacksonville Harbor that is affected by Mile Point tidal delays under without-project conditions. The existing fleet in 2010 is projected using the population growth rates (refer to Table 11) assuming that the three services calling at TraPac Dames Point container terminal (NWA) continue but with Post-Panamax vessels in 2015 owing to the enlargement of the Panama Canal. [67] The Post-Panamax sailing draft distribution (refer to Table 46) for the existing Suez service was used for the Post-Panamax services that will replace existing Panamax services transiting the Panama Canal.

The future commodity movement cost was determined for five prespecified alternatives as stipulated by the Jacksonville District: (1) Case 1 – All vessels, growth for 50 years of with-project conditions including TraPac and CKYH (Hanjin) terminals in place at 2010 and 2015; (2) Case 2 – Existing traffic only (including TraPac) in 2010 and no growth; (3) Case 3 – Base year fleet (2015) including CKYH (Hanjin Dames Point terminal) and no growth beyond 2015; (4) Case 4 – Base year fleet (2015) including CKYH (Hanjin Dames Point terminal) and no growth beyond 2020; and Case 5 – All vessels, growth for 50 years of without-project conditions including TraPac but excluding CKYH (Hanjin Dames Point terminal).[68]

10.0 DETERMINE NED BENEFITS

NED benefits are the time savings to vessels delayed by Mile Point tidal restrictions for entry and exit from Jacksonville Harbor. Table 58 contains the NED benefits for five cases as prespecified by the Jacksonville District. The cases involving a Hanjin marine container terminal at Dames Point reflect commencement in 2015 with three scenarios with respect to weekly calls: (1) three calls per week, 156 calls in 2015 (refer to Table 55); (2) four calls per week, 208 calls in 2015 (refer to Table 56); and (3) five calls per week, 260 calls in 2015 (refer to Table 57). The likely calls for the CKYH alliance at the Hanjin facility have been previously postulated to be five per week. However, there may be some interim startup of less than five calls, with increases to that initial level similar to TraPac.[69]

[66] The global services calling TraPac and Hanjin are distinct from the traditional regional container services, generally with smaller vessels, calling Blount Island and Talleyrand terminals.
[67] The assumption of no new or additional services calling TraPac belies the substantial underutilized capacity of that facility both for NWA and other lines.
[68] The range of benefits has been coordinated with the Jacksonville District to vary from existing fleet no growth scenario (Case 3, lower limit) to assumption of construction of the Hanjin terminal with 5 services per week and growth (Case 1, upper limit).
[69] TraPac does not represent a business model for new terminals having been opened at the time of a major decline in world trade and subsequent rationalizations of some of the container services that had been projected to call ECUS, including Jacksonville Harbor.

Table 58. Present Value of Projected Total Tidal Delay Benefits Under With-Project Conditions, 2015 through 2064

Case	Hanjin Calls	Total Benefits	Container	Dry Bulk	General Cargo	Liquid	AAEQ
1	3	$75,193,465	$58,809,821	$4,000,084	$3,574,427	$8,809,133	$3.576
1	4	$83,173,624	$66,789,980	$4,000,084	$3,574,427	$8,809,133	$3.955
1	5	$91,153,782	$74,770,139	$4,000,084	$3,574,427	$8,809,133	$4.334
2	0	$39,472,755	$25,191,406	$2,889,866	$2,582,350	$8,809,133	$1.877
3	3	$62,606,344	$47,639,659	$3,251,790	$2,905,761	$8,809,133	$2.977
3	4	$69,037,444	$54,070,759	$3,251,790	$2,905,761	$8,809,133	$3.283
3	5	$75,468,544	$60,501,860	$3,251,790	$2,905,761	$8,809,133	$3.589
4	3	$66,376,670	$50,985,552	$3,475,933	$3,106,053	$8,809,133	$3.156
4	4	$73,271,773	$57,880,654	$3,475,933	$3,106,053	$8,809,133	$3.484
4	5	$80,166,876	$64,775,757	$3,475,933	$3,106,053	$8,809,133	$3.812
5	0	51,252,989	34,869,345	$4,000,084	$3,574,427	$8,809,133	$2.437

Notes: Case 1 = All vessels, including TraPac and Hanjin terminals, and growth for all years, 2010-2064.
Case 2 = Existing vessels (2010) and no growth.
Case 3 = All vessels, including TraPac and Hanjin at year 2015 and no growth.
Case 4 = All vessels, including TraPac and Hanjin at year 2015 and growth to 2020.
Case 5 = All vessels, including TraPac, but excluding Hanjin, and growth for all years, 2010-2064.
AAEQ = Average Annual Equivalent Benefits ($000,000).
Federal Water Resources Discount Rate for FY 2011 = 4.125 percent.

Source: G.E.C., Inc.

Figure 7 depicts the present value of the NED benefits for the five cases. Case 1 representing the complete development of Dames Point with respect to Hanjin marine container terminal and growth for the entire period, 2010 through 2064, has a present value of $75.1 million for three CKYH services commencing in 2015, $83.1 million for four CKYH services commencing in 2015, and $91.1 million for five CKYH services commencing in 2015. Each additional CKYH service adds about $7.980 present value to the total NED benefits. The container benefits dominate the total NED benefits, comprising $58.809 million for three CKYH services commencing 2015, $66.789 million for four CKYH services commencing in 2015, and $74.770 million for five CKYH services commencing in 2015. Dry Bulk benefits are $4.000 million, general cargo benefits are $3.574 million, and liquid bulk benefits are $8.809 million.[70] Figure 8 depicts the container benefits (three, four, and five CKYH calls at the planned Hanjin Dames Point terminal per week), dry bulk benefits, general cargo benefits, and liquid bulk benefits for Case 1.

[70] Liquid bulk benefits are disproportionate to the size of the fleet, which is 154 vessels calling 2010 with no growth compared to dry bulk with 150 vessels and growth because of the presence of U.S. flag vessels in the fleet with demonstrably higher vessel operating costs (refer to Table 47).

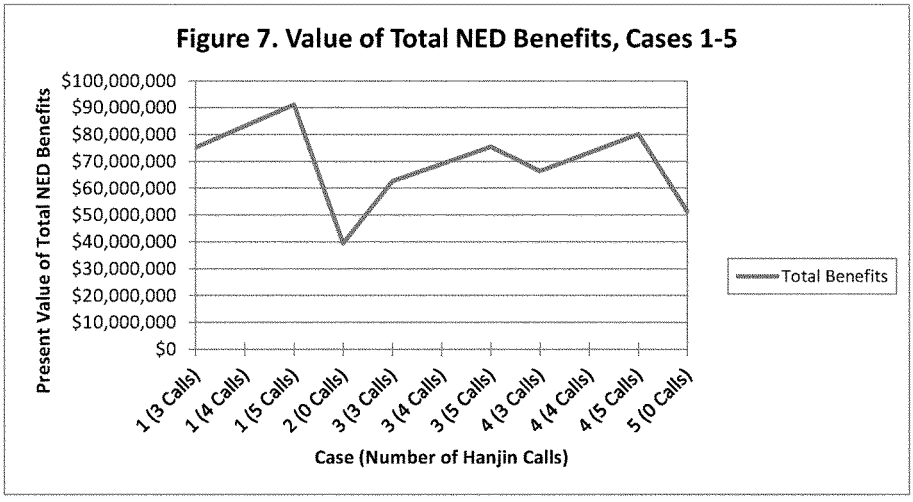
Figure 7. Value of Total NED Benefits, Cases 1-5
Present Value of Total NED Benefits
$100,000,000
$90,000,000
$80,000,000
$70,000,000
$60,000,000
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$0
1 (3 Calls)
1 (4 Calls)
1 (5 Calls)
2 (0 Calls)
3 (3 Calls)
3 (4 Calls)
3 (5 Calls)
4 (3 Calls)
4 (4 Calls)
4 (5 Calls)
5 (0 Calls)
Case (Number of Hanjin Calls)
Total Benefits

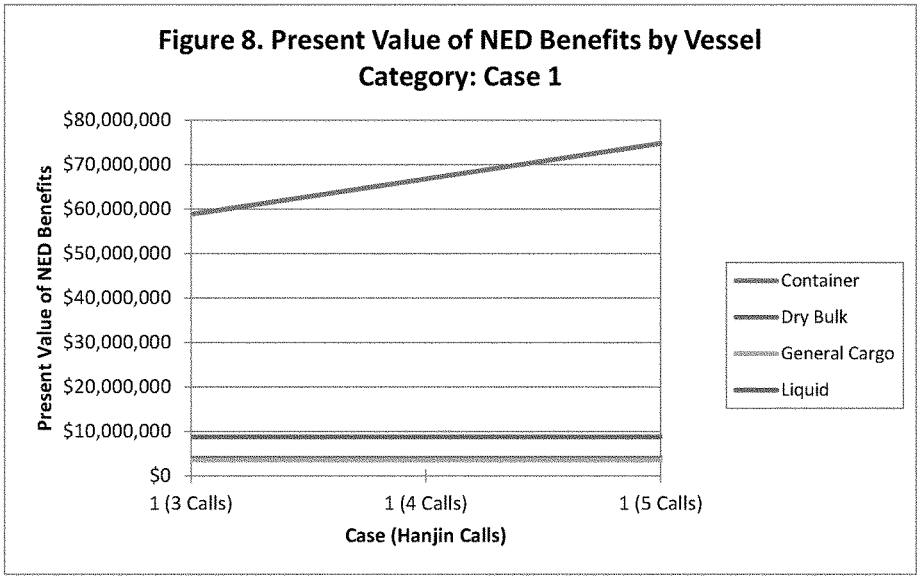
Figure 8. Present Value of NED Benefits by Vessel Category: Case 1
Present Value of NED Benefits
$80,000,000
$70,000,000
$60,000,000
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$0
1 (3 Calls)
1 (4 Calls)
1 (5 Calls)
Case (Hanjin Calls)
Container
Dry Bulk
General Cargo
Liquid

Case 5 has the same circumstances as Case 1 except that there are no CKYH services to a Hanjin facility at Dames Point. Case 5 benefits with all other vessels, excluding Hanjin calls (refer to Table 54), are $51.252 million with container benefits of $34.869 million. Container benefits are 68 percent of total benefits for Case 5 ($34.869/$51.252 = 0.68).

Case 2 is similar to Case 5 with the exclusion of CKYH vessels at a planned Hanjin Dames Point terminal but allows for no growth after 2010. Total NED benefits are $39.472 million. Container benefits are 64 percent of total benefits for Case 2 ($25.191/$39.472 = 0.64).

Case 4 includes all vessels, including CKYH at a planned Hanjin Dames Point terminal, with growth up to year 2020. Total benefits for Case 4 are $66.376 million for three CKYH services commencing in 2015, $73.271 million for four CKYH services commencing in 2015, and $80.166 million for five CKYH services commencing in 2015. Case 3 is similar to Case 4 except that there is no growth after 2015. Total benefits for Case 3 are $62.606 million for three CKYH services commencing in 2015, $69.037 million for four CKYH services commencing in 2015, and $75.468 million for five CKYH services commencing in 2015. The difference between Case 4 (all vessels growth up to 2020) and Case 3 (all vessels growth up to 2015) is about $4.0 million dollars of present value forgone by the lack of growth between 2015 and 2020.

Case 5 is considered the most conservative scenario, as it is based on existing facilities, and a growth rate tied to hinterland population projections. Case 5 is the basis of the benefits for the benefit cost analysis presented in the main report.

11.0 SENSITIVITY ANALYSES

11.1 DISCOUNT RATE

A discount rate of one-quarter percentage point plus and minus the current federal water resources discount rate for FY 2011 was applied to Case 5 (vessel calls based on existing facilities, and population growth for all years, 2010-2064). The results are summarized in table 59 for discount rates of 4.375 and 3.875 percent, respectively. Total NED benefits are $53.7 million and $49.0 million respectively. Average Annual Equivalent (AAEQ) benefits are $2.444 million and $2.431 million, respectively. For the OMB 7% discount rate, the present value is $32.8 million, and the AAEQ is $2.374 million.

Table 59: Case 5 Discount Rate Sensitivity Analysis

Case 5: Discount Rate Sensitivity		
Discount Rate	Present Value Benefits	AAEQ Benefits
3.875%	53,645,000	2,444,000
4.125%	51,253,000	2,437,000
4.375%	49,025,000	2,431,000
7.000%	32,762,000	2,374,000

11.2 ALTERNATIVE CKYH SERVICES WITHOUT HANJIN DAMES POINT TERMINAL

The existing TraPac Dames Point terminal is currently substantially underutilized. With three weekly services and existing population growth rates, the terminal will remain substantially under-utilized throughout the with-project conditions. There is ample sustained excess capacity to accommodate many more services. One alternative is that Hanjin may elect to lease space from TraPac and call Dames Point before the Hanjin terminal is completed or call Dames Point TraPac as a postponement/substitute for the immediate development of the Hanjin Dames Point terminal.

From Case 1 (refer to Table 58), each additional CKYH service yields $7.980 million net present value of increased benefits. Therefore, if CKYH calls TraPac with one service, the NED benefits would increase from $51.252 million (refer to Table 58) under Case 5 (all vessels, including TraPac, but excluding Hanjin, and growth for all years, 2010-2064) to $59.232 million. If CKYH calls with two services, the NED benefits would increase from $51.252 million to $67.212 million.

It is conjectural that Hanjin will lease space at TraPac in addition to or in lieu of development of its planned Dames Point terminal. However, scenarios that exclude the Hanjin Dames Point terminal (Cases 2 and 5) should allow for the possibility that Hanjin and the CKYH alliance may elect to share the abundance of existing unused capacity and sunk development costs at TraPac as an alternative to developing their own investment. Similarly, other lines that endeavor to come to Jacksonville with Post-Panamax services may elect to lease space at TraPac.[71] For these lines, there would be a concomitant impact on NED benefits similar to the inclusion of new CKYH services with or without Dames Point Hanjin terminal development.

[71] The TraPac facility is reportedly available to third parties, but development there is likely not particularly attractive to other container lines because of the Mile Point tidal restrictions that severely limit vessel access to the terminal and affect scheduling.

APPENDIX C

REAL ESTATE PLAN FOR JACKSONVILLE HARBOR (MILE POINT) NAVIGATION PROJECT DUVAL COUNTY, FLORIDA, INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

APENDIX C

REAL ESTATE PLAN FOR
JACKSONVILLE HARBOR (MILE POINT) NAVIGATION PROJECT
DUVAL COUNTY, FLORIDA,
INTEGRATED FEASIBILITY REPORT AND
ENVIRONMENTAL ASSESSMENT

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REAL ESTATE PLAN FOR JACKSONVILLE HARBOR (MILE POINT) NAVIGATION PROJECT DUVAL COUNTY, FLORIDA INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

1. Statement of Purpose.

a. The purpose of this report is to determine the feasibility of the solution to a water resource problem. An evaluation of benefits, costs, and environmental impacts determines Federal interest.

b. The real estate plan is tentative in nature for planning purposes only and both the final real property acquisition lines and the real estate cost estimates provided are subject to change even after approval of this report.

2. Project Authorization.

This report was authorized by a resolution of the House Committee on Transportation and Infrastructure adopted March 24, 1998 for Mile Point, Florida.

3. Prior Reports

There have been several other studies which were initiated or completed, that relate to the Mile Point area. Information regarding these studies can be found in the main report under section 1.6.1. Prior Reports.

4. Project Location and Description.

a. Mile Point consists of 5,000 feet of shoreline located along the north shore of the St. Johns River and east of the Intracoastal Waterway (IWW). Great Marsh Island and the Mile Point Training Wall divide Chicopit Bay from the St. Johns River. Chicopit Bay is located to the south of the Mile Point area (Main Report Figure 5).

b. The NED plan has been identified as Alternative VE-3B plus Flow Improvement Channel, which combines the reconfiguration of the existing training wall, restoration of Great Marsh Island which is the least cost disposal option, and the creation of a Flow Improvement Channel (FIC) in Chicopit Bay. The training wall reconfiguration includes removal of the western 3,110 feet of the existing Mile Point training wall and the construction of a relocated eastern leg training wall of approximately 2,050 feet. The least cost dredging disposal alternative is to restore the breakthrough at Great Marsh Island by placing dredge material at the Island and constructing a western leg training wall, approximately 4,250 feet (Main Report - Figure 22).

5. Real Estate Requirement

a. Sufficient interest/rights will be obtained from the U.S. Navy to allow removal of the western 3,110 feet of the existing Mile Point training wall and lands located behind said training wall. Sufficient interest/rights will be obtained from the U.S. Navy to allow for the construction of a relocated eastern leg training wall of approximately 2,050 feet.

b. A right-of-entry (ROE) for ingress and egress will be obtained from the Nature Conservancy for access to the adjoining Navy property to the east to perform the required monitoring of the restored salt marsh lands. The monitoring will be done for a period of five years.

6. Government-Owned Land.

All of the project construction area lies below the Ordinary High Water Mark. In addition nearly all the construction area, some 51.2 acres, is within the lands acquired by the Navy through condemnation proceedings for Naval Station at the Mayport facility for the surface fleet. This naval facility is referred to as NS Mayport on the accompanying maps. The U.S. Navy acquired fee title to an approximately 495 acres parcel of land via condemnation (Case No. 3818-Civil-J) in September 1957. The acquired parcel encompasses those lands which have been identified as being required for the Mile Point Project (see attached map). The Army Corps of Engineers will coordinate with the United States Navy for a license that will allow construction on its land. The City of Jacksonville currently has permission to operate the Helen Cooper Park on a portion of the lands required.

The Navy can cancel this permission at will and without cost and is willing to do so.

7. Non-Federally-Owned Land

The Nature Conservancy, Inc. owns land adjacent to the proposed project on the west side. This report recommends obtaining a right of entry across the Nature Conservancy lands for the purpose of ingress and egress to the adjoining Navy property for the purpose of monitoring the marsh lands created by this project. Current maps do not indicate that the Nature Conservancy lands will be otherwise impacted, except possibly in a small area that is below the ordinary high water mark. The structure tie-in at the west end appears to be on Navy property according to our maps. Due to their closeness to the project to the property line, a survey will be required to see if any of the Nature Conservancy lands are needed for construction. If part of the tie-in is found to be necessary on The Nature Conservancy's land, fee interest will be required. The estimated cost, if any, would be between $1500 and $2000 per acre. As the likelihood of this acquisition being necessary is very low, it has not been included in this Real Estate Plan at this time. The Nature Conservancy, Inc. is familiar with the proposed project and has indicated their support for the project.

8. Navigational Servitude.

Lands required for the construction and operation of the proposed project all lie below the ordinary high water mark of the St. John's River and as such, are available to the federal government via navigational servitude. Approximately 53 acres of land are within the category of navigational servitude. Unique to this project, the U.S. Navy owns the underlying lands over which navigational servitude is available (see attached map). The Corps of Engineers will not assert navigational servitude against a sister agency. There is a possibility that some lands owned by Nature Conservancy, Inc. may be needed for construction. Such lands, if needed, are also below the ordinary high water mark. The servitude is the right of the United States, under the Commerce Clause of the Constitution, to use lands below the ordinary high water mark, without compensation, to improve navigation. It is a power, not a property right, and the owner of the underlying land is not entitled to compensation, as their ownership interest was always subject to this right.

9. Estates to be Acquired.

Federally owned lands required for project construction and operation will be available via a license of real property from the United States Navy to the Army Corps of Engineers. Remaining lands will be provided via navigational servitude. No additional estates required at this time. A Right of Entry for Ingress and Egress will be obtained from Nature Conservancy, Inc. to cross their property for monitoring purposes.

10. Non-Federal Authority to Participate in the Project.

Jacksonville Port Authority (Sponsor, derives its authority to participate in the project through its creation by an Act of the Legislature of the State of Florida, Chapter 63-1447, Laws of Florida. Section 3 of Chapter 63-1447 provides that the Jacksonville Port Authority shall have the specific authority to enter into contracts, leases or other transactions with any Federal agency. A sponsor capability checklist is attached.

11. Minerals.

There are no known minerals of value in the project area.

12. Hazardous and Toxic Wastes (HTW).

In accordance with Engineering Regulation (ER) 1165-2-132, Hazardous, Toxic and Radioactive Waste (HTRW) Guidance for Civil Works Projects, an initial HTRW assessment appropriate for this project has been completed. There have been no hazardous or toxic wastes identified within the project area.

13. Relocation Assistance Payments (Public Law 91-646).

No person or business will require relocation.

14. Relocations, Alterations, Vacations and Abandonments (Public Law 85-500).

No governmental structures, public utilities, or facilities that come within the purview of Section 111 of the Rivers and Harbors Act of 1958 (PL 85-500) approved 3 July 1958 will be affected by the project.

15. Induced Flooding.

There will be no induced flooding directly associated with this project.

16. Mitigation.

Mitigation proposed for project impacts totaling 8.15 acres would include restoring salt marsh at Great Marsh Island, which has been eroding for the past few decades. As a beneficial use of dredged material, the ACOE will attempt to restore the entire eroded breakthrough at the island, equating to 53 acres of marsh, providing a significantly higher net increase of salt marsh function and value. All the restoration will occur on the 51.2 acres of property owned by the Navy and the remainder on the Nature Conservancy property which is below the mean high water mark.

17. Attitude of Owners

There is one owner directly impacted by the proposed project, the Navy, and one owner impacted to a much less extent by the proposed project, The Nature Conservancy. Both have indicated strong support for the project.

18. Acquisition/Administrative Costs.

a. The estimate of the Federal real estate acquisition/ administrative cost is $69,200.00. This figure includes project real estate planning, review and administrative (license) costs.

b. The non-Federal sponsor will receive credit towards its share of real estate administrative project costs incurred for certification. Administrative costs are estimated to be $10,000.00.

19. Summary of Real Estate Costs. The following cost figures are subject to change prior to construction:

a. Lands and Damages

License/ROE (53 acres: 1.8 The Nature Conservancy, Inc. and 51.2 the U.S. Navy)	0
Improvements and/or severance	0
Severance	0

b. Acquisition - Administrative costs (Includes Corps Real Estate planning and meeting costs)

	Federal	$ 69,200
	Non-Federal	10,000
c.	Public Law 91-646	0
d.	Contingencies (25%)*	$ 19,800
	TOTAL ESTIMATED REAL ESTATE COSTS	$ 99,000

*Due to the low value of projected real estate cost, a contingency of 25% was used in the likelihood of some unexpected requirements to be completed in support of the project.

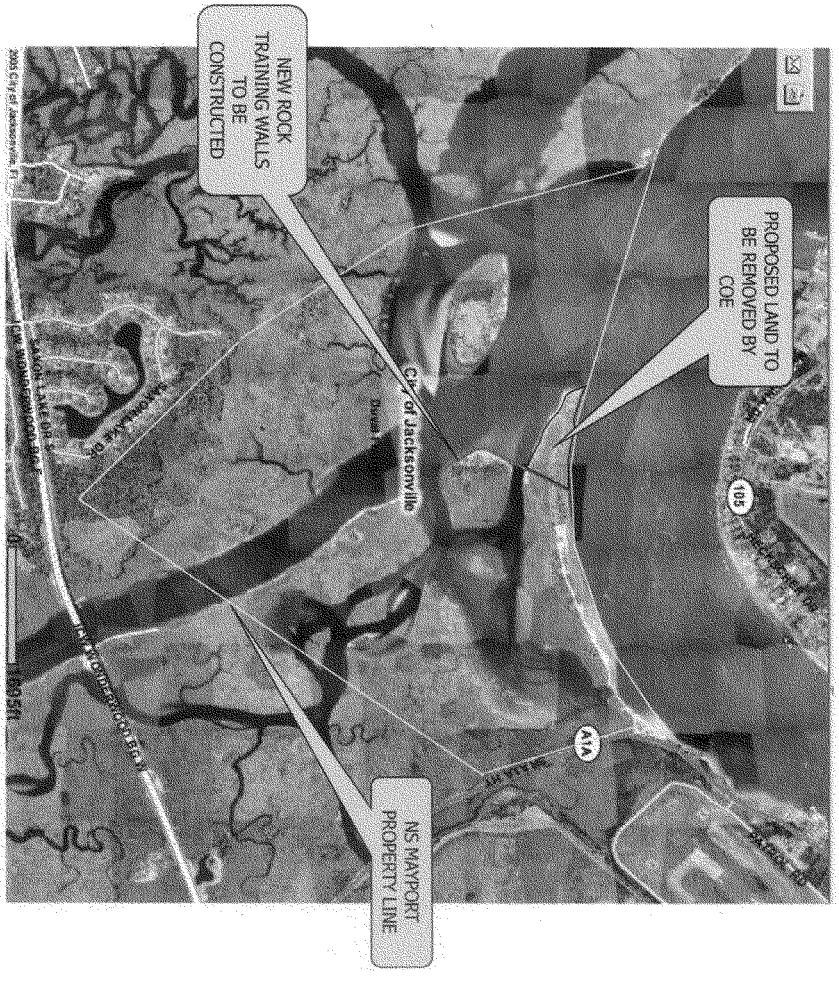
20. Real Estate Acquisition Schedule.

The Army Corps of Engineers, as the responsible lead agency for the Jacksonville Harbor Navigation Project, will coordinate with the United States Navy for the license on impacted real property under its ownership. It is anticipated that the license for the real property from the U. S. Navy to the U. S. Army Corps of Engineers will take approximately 30 - 90 days, after execution of the Project Partnership Agreement. Acquisition of the Right of Entry from The Nature Conservancy is anticipated to take approximately 90 days.

21. Maps. Recommended Plan

22. Maps. Vicinity Map

23. Maps (Navy Property)



24. REAL ESTATE CHART OF ACCOUNTS

01	LANDS AND DAMAGES		
01A00	PROJECT PLANNING/ADMINISTRATIVE	$	79,200
01B--	ACQUISITION		
01B20	BY LOCAL SPONSOR (LS)	$	0
01B40	REVIEW OF LS	$	0
01E--	APPRAISALS		
01E30	BY LS	$	0
01E50	REVIEW OF LS	$	0
01R--	REAL ESTATE PAYMENTS		
01R10	LAND PAYMENTS		
01R1B	BY LS	$	0
TOTAL REAL ESTATE COST EXCLUDING CONTINGENCY		$	79,200
TOTAL REAL ESTATE CONTINGENCY COST (25%) $19,800			
TOTAL PROJECT REAL ESTATE COST		$	99,000

APPENDIX D

MITIGATION PLAN AND INCREMENTAL ANALYSIS

NAVIGATION STUDY FOR JACKSONVILLE HARBOR (MILE POINT) STUDY

DUVAL COUNTY, FLORIDA

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1 MITIGATION PLAN SUMMARY

The U.S. Army Corps of Engineers-Jacksonville District (Corps) proposes to reconfigure the existing training wall (Alternative VE-3B) which lies immediately north of Helen Cooper Floyd Park (HCFP) in Duval County, Florida. As detailed in the main report, Alternative VE-3B would provide navigation benefits as well as reduce erosive forces along the Mile Point shoreline. However, in order to reconfigure the wall, it would be necessary to clear, grub, and dredge the western portion of HCFP. This action would impact a total of 8.15 acres of salt marsh. Using the Uniform Mitigation Assessment Method (UMAM), it was determined that 18.84 acres of mitigation would be required to offset this loss. An onsite meeting was held with the Florida Department of Environmental Protection, U.S. Fish and Wildlife Service and Florida Fish and Wildlife Conservation Commission in order to discuss the UMAM analysis. Coordination on the analysis is still ongoing.

The mitigation would be performed by restoring salt marsh which historically occurred at nearby Great Marsh Island. However, as a beneficial use of dredged material, the Corps proposes to restore the entire eroded breakthrough at the island, which is up to 53 acres of salt marsh. This would provide 34.16 acres of restored salt marsh in addition to the required 18.84 acres of mitigation, and would result in a significant increase of salt marsh acreage. Construction of the proposed west leg of the training wall would protect the restoration area from future erosion. In addition to the wall, temporary structures such as water dams or bio-degradable geo-tubes would be installed along the other sides of the restoration area in order to provide temporary containment. Dredged material from the western portion of HCFP would be piped into this area in order to restore elevations that can support salt marsh. Additional dredged material would be piped into the restoration area from a Flow Improvement Channel (FIC) within Chicopit Bay. This action would restore the natural flow-way between Mt. Pleasant Creek and the Intracoastal Waterway.

Additional components of the mitigation plan include the following: construction of tidal creeks within the restored marsh; sprigging of the 53 acres of marsh with commercially grown salt marsh species; training walls constructed with material known to support oysters and; placement of oyster shell within a newly constructed tidal channel to provide hard substrate for live oyster colonization. The restored marsh and FIC would be monitored for five years, and corrective action taken if needed.

2 PROJECT DESCRIPTION

2.1 Location

The study area is located in the City of Jacksonville, Duval County, Florida (see Attachment 1: Figure 1 – Project Map). It includes the confluence of the St.

Johns River and Intracoastal Waterway (IWW), the Mile Point shoreline, the western portion of Helen Cooper Floyd Park (HCFP), and Great Marsh Island.

2.2 Brief Project Summary

The study purpose is to determine the source of the Mile Point erosion problem and to provide recommendations for reducing or relocating the difficult crosscurrents during the ebb flow at the confluence of the St. Johns River with the IWW. As detailed in the main report, the U.S. Army Corps of Engineers-Jacksonville District (Corps) proposes to reconfigure the existing training wall, which lies immediately north of HCFP. Alternative 3C would reduce or relocate the difficult cross currents as well as reduce erosive forces along the Mile Point shoreline. However, in order to reconfigure the wall, it would be necessary to clear, grub, and dredge the western portion of HCFP. HCFP is part of the Mayport Naval Station, but is managed by the city of Jacksonville as a park.

2.3 Jurisdictional Areas to be Impacted

In 2004, the U.S. Navy contracted CZR Inc. to identify and delineate wetland boundaries on the Mayport Naval Station, including HCFP. The Regulatory Division of the Corps performed a field inspection in 2005, and determined that the wetlands identified by CZR are jurisdictional and concurred with the delineated boundaries (see Attachment 2: Memorandum on Jurisdictional Determination). The Corps obtained the wetlands shape file from CZR, and was able to verify that jurisdictional wetlands would be impacted by the proposed training wall reconfiguration (see Attachment 1: Figure 2-Wetland Delineation Map). Wetland functions within the project footprint would be lost, as this area would be converted to open water or training wall.

2.4 Description of Jurisdictional Areas

CZR identified the wetlands at HCFP as estuarine, intertidal, emergent, persistent, and irregular. As expected, site inspections revealed that the wetland systems identified by CZR, and within the project footprint, consist of low and high salt marsh. A fringe salt marsh has developed between the training wall and the north shore of HCFP (see Attachment 3: Photo 1), and a substantially larger area of higher quality marsh occurs along the south shore of the park (see Attachment 3: Photo 2). In general, the low marsh is dominated by salt marsh cord grass (*Spartina alterniflora*) transitioning in slightly elevated areas to high marsh species such as sea oxeye (*Borrichia spp.*) and salt grass (*Distichlis spicata*). A tidal channel also occurs within the salt marsh along the southern shore of HCFP. The Corps used the Uniform Mitigation Assessment Method (UMAM) to further evaluate the values and functions of the wetlands within the impact area (see Attachment 4: UMAM Analysis). An onsite meeting was held on 19 August 2011 with the Florida Department of Environmental Protection, U.S. Fish and Wildlife Service and Florida Fish and Wildlife Conservation Commission in order to discuss the UMAM analysis. Coordination on the analysis is still ongoing.

3 GOAL OF MITIGATION

3.1 Type of Wetland to be Restored or Created

In compliance with Section 404 of the U.S. Clean Water Act, the Corps proposes to mitigate for the loss of jurisdictional wetlands, specifically salt marsh, caused by the reconfiguration of the training wall. This would be accomplished by restoring salt marsh that historically occurred in the vicinity of the project.

3.2 Acreage of Impacted Wetland

Overlaying the wetlands shape file from CZR on top of the project footprint, the Corps was able to determine that 2.05 acres of salt marsh which fringes the north shore and 6.10 acres of higher quality marsh along the south shore, total of 8.15 acres, would be lost with the proposed removal of the western portion of HCFP.

3.3 Functions to be Performed by the Restored Wetland

The functions provided by the restored salt marsh should be very similar to functions currently provided by the salt marsh which would be impacted by the project.

4 PROPOSED RESTORATION SITE

4.1 Location and Size of Restoration Area

There are no salt marsh mitigation banks that have been established in northeast Florida. That being the case, the Corps proposes to mitigate for salt marsh impacts at HCFP by restoring salt marsh which historically occurred at nearby Great Marsh Island (see Attachment 5: Historical Maps and Aerial Photos of Great Marsh Island). The marsh at this location has been eroding over the years, and recent site inspections have indicated that it is still actively eroding (see Attachment 3: Photos 3 and 4). It should be noted that identifying appropriate mitigation sites can be problematic. However, in this case, the Great Marsh Island site is ideal due its close proximity to the project and the fact that salt marsh historically occurred at this location. Furthermore, the proposed west leg of the training wall should protect the restoration area from future wave erosion, but allow for tidal exchange. Using UMAM, it was determined that 18.84 acres of mitigation would be required to offset the loss of 8.15 acres of salt marsh at HCFP. As a beneficial use of dredged material, the Corps will attempt to restore the entire eroded breakthrough at Great Marsh Island. This would result in the restoration of approximately 53 acres of marsh, and would provide a significantly higher increase of salt marsh acreage.

4.2 Existing Wetland Functions of Restoration Area

Due to on-going erosion, the restoration area is currently open water and there is no emergent vegetation or wetland habitat.

4.3 Present Uses of Restoration Area

Recreational boat traffic is currently navigating through the proposed restoration area in order to reach the St. Johns River. If the area was restored to salt marsh, then recreational boat traffic would need to access the St. Johns River through Chicopit Bay and the Intracoastal Waterway.

5 RESTORATION IMPLEMENTATION PLAN

5.1 Site Preparation - Phase 1

To help insure success, the proposed restoration plan would be implemented in phases. Phase 1 work activities would include the following:

- Survey – Prior to performing any earth moving work, survey data would be collected from the salt marsh within the project footprint at HCFP, and also from the remaining salt marsh adjacent to the eroded restoration area. The survey would be performed using equipment with sufficiently accurate capabilities (accurate to within 1-2 cm), such as Real Time Kinematic equipment. A wetland scientist would accompany the survey team, and would collect a minimum of five elevation points each from high marsh, low marsh and tidal channel locations. This data would be used to determine the necessary elevations for restoring high and low marsh as well as tidal channels within the restoration area. For planning purposes, estimated elevations of + 2 feet above mean lower low water (mllw) for low marsh, + 3 feet above mllw for high marsh, and 0 to -1 feet mllw for tidal channels were used in the main report (see Attachment 1; Figure 4- Planting Detail Typical Profile). Existing elevations or depths of the eroded restoration area would also be determined prior to material placement.

- Structures – The west leg of the training wall would be constructed along the north side of the mitigation site, and would consist of large boulders with smaller filter stone. This structure would allow for tidal exchange, but the filter stone should minimize sediment from passing through. Water dams or geo-textile tubes filled with water or bio-degradable geo-textile tubes filled with sand would be placed along the west, east, and south sides of the mitigation site (see Attachment 1; Figure 3 – Great Marsh Island Restoration Site). The tube along the southern border would follow the shallow contour of the bottom, and therefore would have a slightly undulating shape. It would also have one or more low points to allow for overflow. These temporary structures would contain dredged material during placement activities, as well as avoid turbidity violations. Additional information on the proposed structures can be found within the Engineering Appendix of the main report.

- Dredged Material Placement – Once the structures are in place, dredged material would be pumped by a hydraulic dredge from the western portion of HCFP and the IWW to the restoration site. The pipeline would be periodically moved to different locations within the placement area in order to avoid excessive build-up in one spot, and the target elevation would be slightly greater than the elevations obtained from adjacent marshes in order to account for settling.

- Chicopit Bay Flow Improvement Channel – The proposed restoration of Great Marsh Island would close the existing northern connection between Chicopit Bay and the St. Johns River. This connection was created by the erosion and loss of salt marsh in the 1990's. Shoaling within the bay has also decreased the amount of flow or flushing effect coming from the east, or from the bay's historic connection with the IWW. Therefore, the Corps proposes to construct a flow improvement channel within Chicopit Bay, which should improve the flushing of the bay as well as provide deeper water Essential Fish Habitat. The channel would be constructed from the IWW, through the shoal within the bay, and ending at the mouth of Mt. Pleasant Creek. According to NOAA navigation charts (1993), Chicopit Bay had depths as great as 9 feet, but depths in this area have greatly decreased over subsequent years due to shoaling. Dredged material from the flow improvement channel would be used to restore salt marsh at Great Marsh Island. Additional information on dredging the channel can be found in Appendix A: Engineering Design and Cost Estimates.

5.2 Site Preparation - Phase 2

The dredged material placed within the restoration area would be initially bulked. After a sufficient amount of time has passed to allow for settling, e.g. up to 365 days, the following actions shall be taken:

- Survey – The restoration area would again be surveyed, and a sufficient number of transects and stations would be established in order to obtain adequate coverage. Site elevations would then be compared to the target elevations previously obtained from the adjacent marshes.

- Final Contour – Depending upon the survey results, material would be added or subtracted from the restoration area in order to achieve the desired elevations for low and high salt marsh. If necessary, the first option would be to move material to different locations within the restoration area so that target elevations are achieved. Excess material could be moved off-site, i.e. to Buck Island. Additional material could also be dredged from the remaining shoal in Chicopit Bay, or brought in from the upland area on the eastern end of Great Marsh Island. This upland area is comprised of spoil material, and significant resources are not known to occur at this location. Biological surveys for species like gopher tortoises would be performed prior to using this site as a source of borrow

material, and the site would be graded and planted with native vegetation if borrow material is removed.

- Tidal Channels – A minimum of three tidal channels (in excess of 1.6 acres) would be constructed throughout the restoration area. As stated earlier, bottom elevations of the channels would be comparable to elevations of existing tidal channels in adjacent salt marsh. The channels would have sections that remain submerged (elevation of -1 feet below mllw, average top width of 25 feet and a total linear length in excess of 3,200 feet, or approximately 1.8 acres). Other sections would be exposed at low tide (elevation of 0 to +1 feet above mllw, average top width of 15 feet, and a total linear length in excess of 4,600 feet, or approximately 1.6 acres). The channels would follow the lowest contours of the site after placed material has settled.

- Oyster Habitat – A widener would be constructed in one of the tidal channels. This widened section would be roughly 50 feet in length, with a maximum width of 30 feet, and tapering back to the 5 foot wide channel. Oyster shell shall be placed intermittently within the channel, including the widened section. The shell should be readily colonized by spats, or juvenile oysters. In addition to the tidal channels, the reconfigured east leg (0.37 acres) and new west leg (0.76 acres) of the training wall would be constructed using materials (i.e. boulders, concrete, etc.) that are known to support oysters for a total of 1.13 acres of oyster/intertidal habitat. The creation of this new habitat should offset the loss of the 0.30 acres of oyster habitat within the salt marsh at HCFP and the 0.56 acres along the intertidal edge of the existing training wall, total of 0.86 acres. Field inspections have indicated that the primary oyster habitat at HCFP appears to be confined to mudflats outside the project foot print.

- Planting – The entire restoration area (53 acres) would be planted with commercially grown salt marsh species (i.e. *Spartina alterniflora*). All species would be planted on 3 foot centers, which are equivalent to 4,840 plants per acre (see Attachment 1; Figure 4 – Planting Detail Typical Profile). Since planting would occur after the placed dredged material has settled (i.e. after one year), some natural recruitment is expected and planting could be much less than the 53 acres.

- Structure Removal – If water dams are used, then they would be drained and removed after the area stabilizes. If geo-tubes are used, then they would be allowed to bio-degrade. Geo-tubes should eventually be colonized by plants.

5.3 Monitoring – Phase 3

After the site preparation is completed, the salt marsh restoration area would be monitored on an annual basis for five years. Monitoring would include the following:

- Stability – The stability of the dredged material, tidal channels, as well as the training wall and remaining geo-tube would be assessed. In the event that erosion occurs, the percent of affected area would be determined.

- Hydrology – A qualitative analysis shall be performed to determine whether the hydrology of the site continues to be suitable for low and high marsh habitats.

- Vegetation – Percent cover (including species type) of the restoration area and an adjacent reference wetland would be ascertained using a sufficient number of randomly selected 1-meter^2 quadrants along transect lines.

- Photography – High and low marsh, tidal creeks, as well as the training wall and tubes would be photographed from pre-assigned and marked locations. Vegetation transect lines from the restoration area and reference wetland would also be photographed.

- Annual Reports – Reports would include maps of the restoration area, a description of marsh stability including observed erosion, a qualitative analysis of site hydrology, an analysis of percent cover data including percentage of high marsh, photographs of the restoration area and vegetation transect lines, copies of field data, and recommendations.

Monitoring and corrective action, if needed, of the proposed Flow Improvement Channel (FIC) would also be implemented for five years. The FIC monitoring plan is currently under development.

6 FINAL SUCCESS CRITERIA

The project shall be considered a success, if after five years of monitoring the following criteria are met:

- Loss of restored marsh to erosion is less than 10%.

- Hydrological conditions remain favorable for low and high marsh habitats.

- High marsh comprises at least 10% of the total restoration area.

- Percent cover analysis indicates that the plant community in the restoration area is similar to the adjacent reference wetland.

- The tidal channel seeded with oyster shell remains stable or open.
- The west and east legs of the training wall are colonized by oysters.

7 CONTINGENCY PLAN

Environmental monitoring over a period of five years will help insure the sustainability of the restoration site. The Corps shall be ultimately responsible for ensuring that the final success criteria are met, and will take corrective actions as necessary. If deemed necessary by the Corps, any corrective actions may be monitored for at least five years from the time they were implemented.

8 ADAPTIVE MANAGEMENT

Adaptive management shall be applied during the implementation of this plan. In other words, the Corps shall use a common sense approach to make decisions that may deviate from the plan's design features. For example, it may be beneficial to use other types of containment structures, create additional tidal channels or create a higher percentage of high marsh. Significant changes in this plan shall be coordinated with the appropriate resource agencies.

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.

9 INCREMENTAL ANALYSIS

9.1 Alternative Plans

As discussed in the main report for the Tentatively Selected Plan (TSP), the Corps proposes to reconfigure the Mile Point Training Wall which should allow for the lifting of restrictions to navigation and reduce erosion along Mile Point. The Corps evaluated the following restoration alternatives to mitigate for impacts to salt marsh caused by the TSP:

- Alternative 1 – Mitigation performed on a 1:1 ratio plus 8.15 acres of Planting: This increment was added for comparison sake, but it is not acceptable to regulatory agencies as it does not adequately compensate for the loss caused by the project. Plus, the project would generate dredged material in excess of the amount needed to perform mitigation on a 1:1 ratio. Therefore, this excess material would be transported to

another placement area, i.e. the Buck Island upland disposal site. The proposed 8.15 acre restoration area at Great Marsh Island would be sprigged with commercially grown salt marsh species at 3 foot centers.

- Alternative 2 – Required Mitigation plus 18.84 acres of Planting: As previously stated, the UMAM analysis determined that 18.84 acres of mitigation acreage would be required to offset the 8.15 acres of salt marsh lost at HCFP. However, the project would generate dredged material in excess of the amount of material required to complete the mitigation. Therefore, this excess material would have to be transported to another placement area, i.e. the Buck Island upland disposal site. The proposed 18.84 acre restoration area at Great Marsh Island would be sprigged with commercially grown salt marsh species at 3 foot centers.

- Alternative 3 – Optimal Restoration plus 18.84 acres of Planting: An estimated 45 acres would be restored at Great Marsh Island as previously stated in Alternative 2. However, only the required mitigation area (18.84 acres) would be planted. The remaining 26.16 acres would not be planted, but should be colonized by salt marsh species through natural recruitment.

- Alternative 4 –Optimal Restoration plus 45 acres of Planting: The required mitigation (18.84 acres) would be completed, and up to 26.16 acres of additional salt marsh would be restored at Great Marsh Island for a total of 45 acres. There would be no excess dredged material from the project which would have to be transported to another placement area, i.e. Buck Island. All 45 acres would be sprigged with transplanted salt marsh species at 3 foot centers.

- Alternative 5 – Expanded Restoration plus 18.84 acres of Planting: The 45 acres of eroded marsh at Great Marsh Island would be restored, and 8 acres of additional marsh would be restored for a total of 53 acres. Material for the additional 8 acres of restoration would come from the dredging of the proposed flow improvement channel in Chicopit Bay. Only the required mitigation area (18.84 acres) would be planted. The remaining 34.16 acres would not be planted, but should be colonized by salt marsh species through natural recruitment.

- Alternative 6 – Expanded Restoration plus 45 acres of Planting: The 45 acres of eroded marsh at Great Marsh Island would be restored, and 8 acres of additional marsh would be restored for a total of 53 acres. Material for the additional 8 acres of restoration would come from the dredging of the proposed Flow Improvement Channel in Chicopit Bay. All 45 acres would be sprigged with commercially grown salt marsh species at 3 foot centers.

- Alternative 7 – Expanded Restoration plus 53 acres of Planting: The 45 acres of eroded marsh at Great Marsh Island would be restored, and 8 acres of additional marsh would be restored for a total of 53 acres. Material for the additional 8 acres of restoration would come from the dredging of the proposed flow improvement channel in Chicopit Bay. The proposed 53 acres would be sprigged with transplanted salt marsh species at 3 foot centers.

9.2 Dredged Material Placement Cost

The estimated project cost for each Alternative is shown in Table 1. This project cost includes dredged material placement costs but excludes planting costs Alternative 2 shows the estimated cost for dredged material placement in order to complete the required mitigation (18.84 acres), and the cost for taking surplus material to Buck Island. Alternatives 3 and 4 show the estimated cost for dredged material placement in order to restore 45 acres at Great Marsh Island. Alternative 5, 6, and 7 show the estimated total dredging cost for the expanded restoration area, which is 53 acres.

Table 1: Estimated Project Cost including Dredged Material Placement Cost (does not include planting costs)

ALTERNATIVE	ESTIMATED COST
Alternative 1 – Mitigation (1:1 Ratio) 8.15 acres	$41,576,954
Alternative 2 – Required Mitigation 18.84 acres	$41,576,954
Alternative 3 – Optimal Restoration 18.84 acres	$34,126,159
Alternative 4 – Optimal Restoration 45 acres	$34,126,159
Alternative 5 – Expanded Restoration 18.84 acres	$34,604,618
Alternative 6 – Expanded Restoration 45 acres	$34,604,618
Alternative 7 – Expanded Restoration 53 acres	$34,604,618

9.3 Planting Cost

Planting the required mitigation area (18.84 acres) may be mandated by the regulatory agencies. It is generally believed that planting accelerates development of salt marsh plant communities, especially in larger restoration efforts. That being the case, some variation of planting was considered for each alternative. Alternatives 2, 4, and 5 would plant the required mitigation area (18.84 acres only), whereas Alternatives 3 and 6 would plant up to 45 acres, and Alternative 7 would plant up to 53 acres. The estimated planting cost for each alternative is shown in Table 2.

Table 2: Estimated Planting Cost with 29% Contingency

ALTERNATIVE	ESTIMATED COST
Alternative 1 – Mitigation (1:1 Ratio) plus 8.15 acres Planting	$240,206
Alternative 2 – Required Mitigation plus 18.84 acre Planting	$555,273
Alternative 3 – Optimal Restoration plus 18.84 acre Planting	$555,273
Alternative 4 – Optimal Restoration plus 45 acre Planting	$1,326,288
Alternative 5 – Expanded Restoration plus 18.84 acre Planting	$555,273
Alternative 6 – Expanded Restoration plus 45 acre Planting	$1,326,288
Alternative 7 – Expanded Restoration plus 53 acre Planting	$1,562,073

9.4 Cost of Each Mitigation Alternative

The total cost for each alternative is shown in Table 3. Alternative 2 would provide the required mitigation acreage (18.84 acres) to offset project related impacts to salt marsh. Alternatives 3 and 4 are more desirable since they would provide additional restoration benefits, i.e. increased salt marsh functions and values, and they would likely use all dredged material from the western portion of HCFP and the IWW. Alternative 4 would plant only the required mitigation area (18.84 acres). The remaining portion of the restoration site (26.16 acres) would not be planted, but should be colonized by salt marsh species through natural recruitment. Alternatives 5, 6, and 7, are the most desirable because they would restore up to 53 acres of salt marsh at varying rates, and they would all provide capacity for dredged material resulting from the construction of the proposed Flow Improvement Channel.

Table 3: Estimated Total Mitigation Cost for Each Alternative

ALTERNATIVE	ESTIMATED COST
Alternative 1 – Mitigation (1:1 Ratio) plus 8.15 acres Planting	$465,888
Alternative 2 – Required Mitigation plus 18.84 acre Planting	$1,076,973
Alternative 3 – Optimal Restoration plus 18.84 acre Planting	$1,801,372
Alternative 4 – Optimal Restoration plus 45 acre Planting	$2,572,387
Alternative 5 – Expanded Restoration plus 18.84 acre Planting	$2,022,901
Alternative 6 – Expanded Restoration plus 45 acre Planting	$2,793,916
Alternative 7 – Expanded Restoration plus 53 acre Planting	$3,029,701

9.5 Incremental Analysis of Alternatives

Incremental analysis of alternatives is conducted in order to determine the best buy option for the project. This analysis uses the IWR Planning Suite Software to combine management measure into alternatives and perform comparisons.

The previously outlined six alternatives reflect the combined management measures that are feasible for this study. These alternatives are evaluated using incremental analysis of costs and benefit basis to arrive at the best buy alternative.

Analysis with the IWR Planning Suite Software incorporates a realized benefit from each alternative. This benefit can be expressed in Habitat Units (HUs) gained or created. For this analysis, certain combinations of dredging and planting create more acres of material than acres being planted. Unplanted acres refer to the area where dredged material is placed in Great Marsh Island but not planted during construction. Alternatives 3, 5, and 6 have unplanted acreages. The realized benefit of those unplanted acres would be delayed because the development of fully functional salt marsh would take longer. Unplanted areas would also be more subject to erosion. To account for this difference in present and future benefits of the restored salt marsh, a weighting factor is applied. This weighting factor gives a larger realized benefit to the planted acres (0.6), and a smaller weighting factor to the unplanted acres (0.2). Application of these weighting factors for the various alternatives produces a range of HU outputs for the seven alternatives (Table 4).

Table 4: Incremental Analysis of Mitigation Alternatives for Mile Point

Combination of feasible Dredging and Planting Alternatives	Total Cost	Total Project Acreage	Total Planted Acreage	Quantified Habitat Units (HUs)	AAEQ of Total Cost	Incremental Cost (Millions)/ HUs
Alternative 1	$465,888	8.15	8.15	4.89	$23,097	$0.0047
Alternative 2	$1,076,973	18.2	18.2	10.92	$53,393	$0.0049
Alternative 3	$1,801,372	45	18.2	16.28	$89,307	$0.0055
Alternative 4	$2,572,387	45	45	27	$127,532	$0.0047
Alternative 5	$2,022,901	53	18.2	17.88	$100,290	$0.0056
Alternative 6	$2,793,916	53	45	28.6	$138,514	$0.0048
Alternative 7	$3,029,701	53	53	31.8	$150,204	$0.0047

The AAEQ costs for the seven alternatives vary due to differences in planting and final grading costs. Alternative 7 provides an incremental cost which is as low as or lower than other alternatives for the largest gain of 31.8 HUs. Planting the entire 53 acres is also more desirable because it would accelerate the development of a fully functional salt marsh and reduce the chance of the area eroding. In summary, Alternative 7 provides planting for the total restoration site with the inclusion of material from the Flow Improvement Channel and yields an incremental cost as low as or lower than the other alternatives per HU gain.

ATTACHMENT 1

MITIGATION PLAN DRAWINGS

FIGURES 1-4

FIGURE 1: PROJECT MAP

JACKSONVILLE HARBOR, FLORIDA

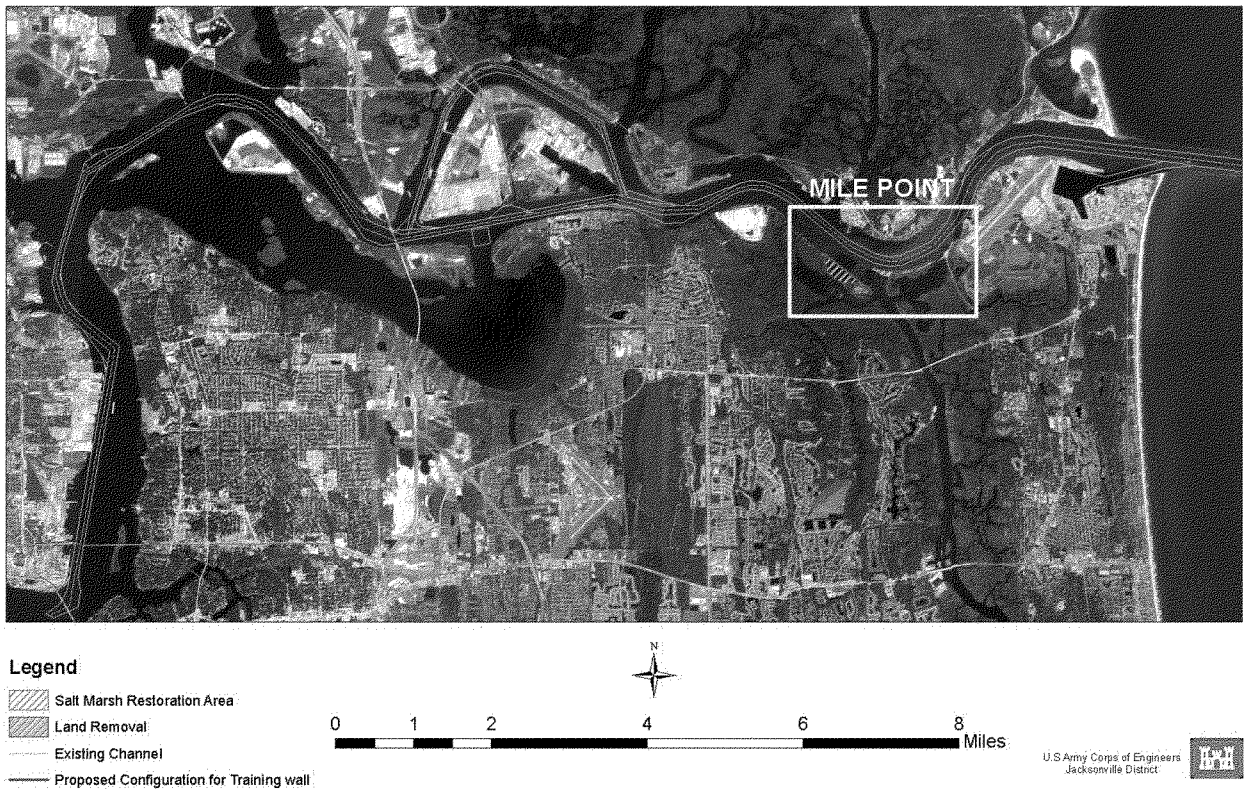

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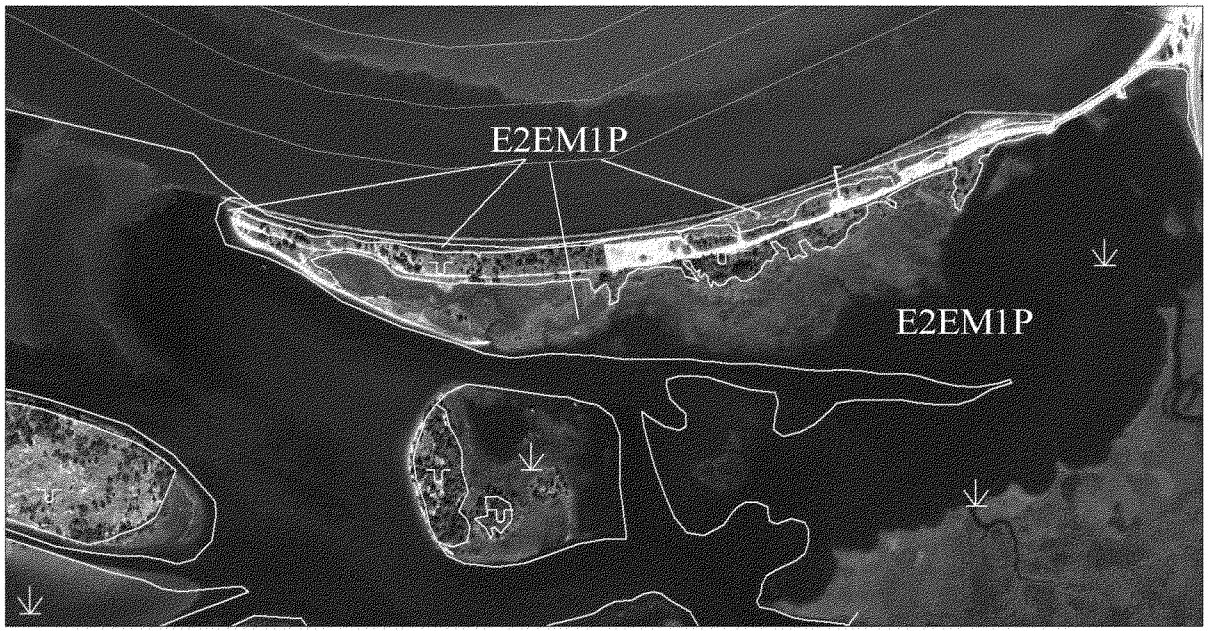
FIGURE 2: WETLAND DELINEATION

JACKSONVILLE HARBOR MILE POINT WETLAND DELINEATION



Legend

E2EM1P-(Estuarine, Intertidal, Emergent, Persistent, Irregular (Salt marsh)

Existing Channel

U - Upland

0 0.05 0.1 0.2 0.3 0.4 Miles

N

U.S.Army Corps of Engineers
Jacksonville District

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FIGURE 3: GREAT MARSH ISLAND RESTORATION SITE

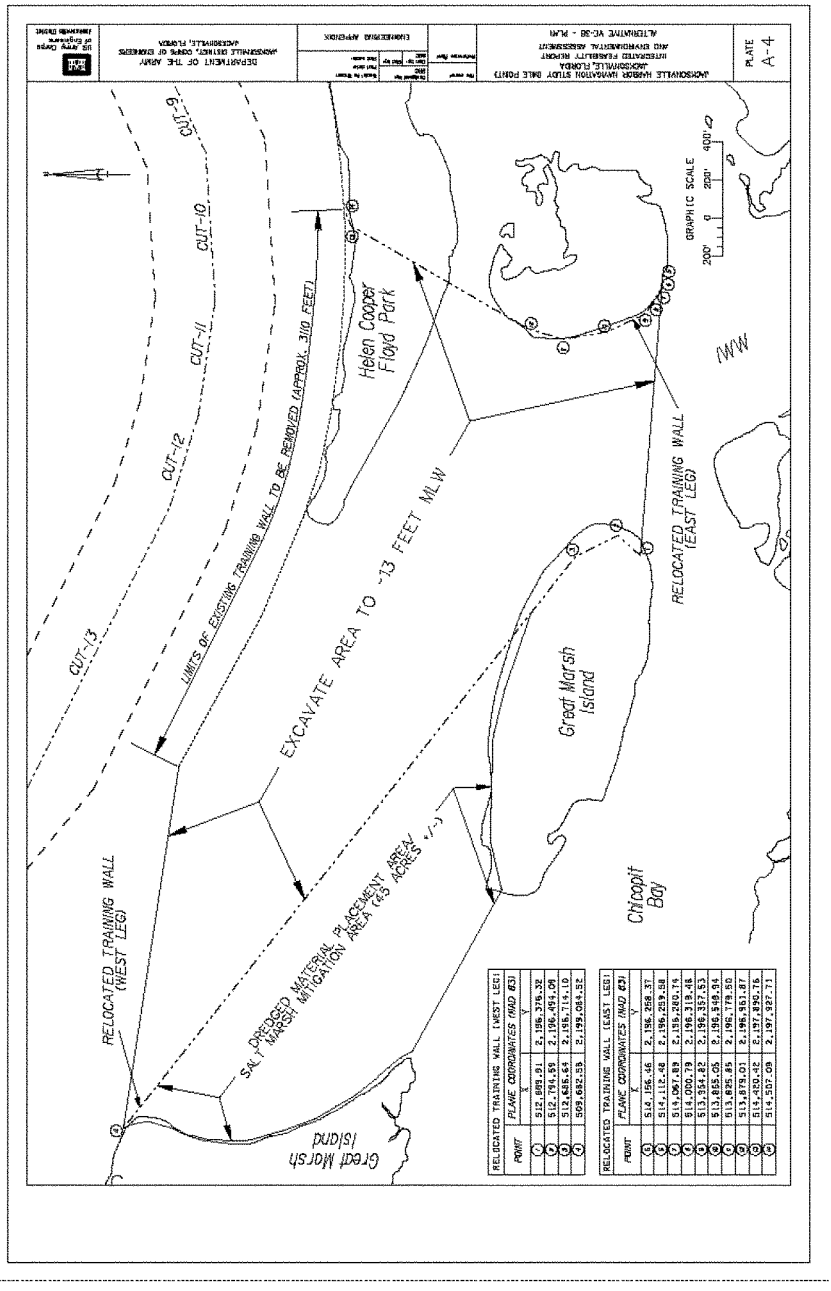
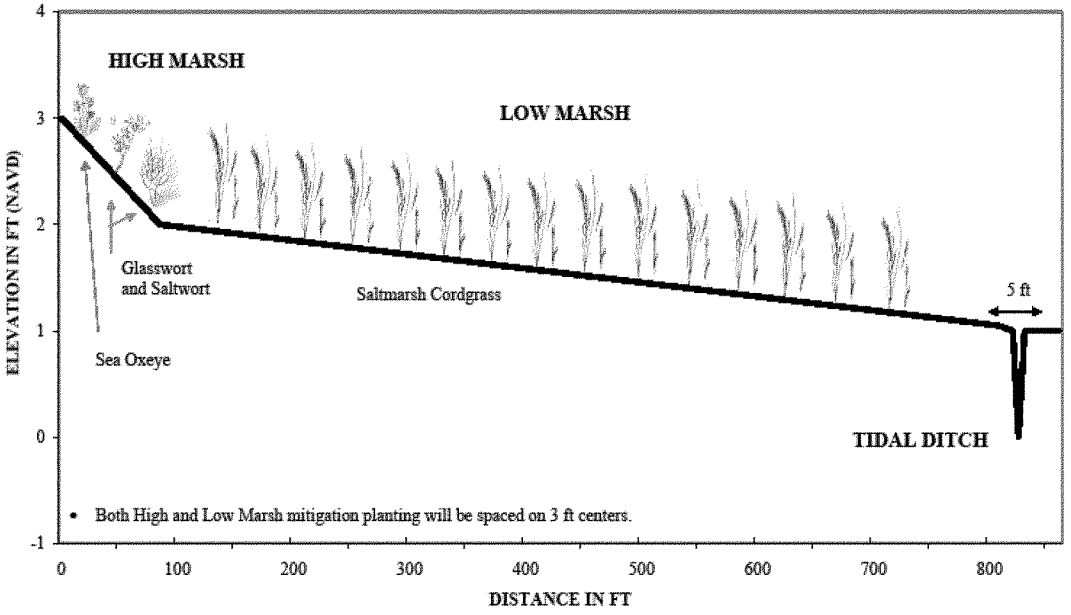


FIGURE 4: PLANTING DETAIL TYPICAL PROFILE



PLANTING DETAIL-TYPICAL PROFILE

SCALE: 1" = 100'

0 100'

FIGURE #4
PROFILE OF PLANTING DETAIL
MILE POINT TRAINING WALL RECONFIGURATION SALT MARSH RESTORATION AREA
JACKSONVILLE HARBOR, FLORIDA

U.S Army Corps of Engineers
Jacksonville District

PRELIMINARY DRAWINGS: THESE DRAWINGS ARE NOT IN FINAL FORM, BUT ARE BEING TRANSMITTED FOR AGENCY REVIEW.

ATTACHMENT 2

MEMORANDUM ON JURISDICTIONAL DETERMINATION

DEPARTMENT OF THE ARMY
JACKSONVILLE DISTRICT CORPS OF ENGINEERS
P. O. BOX 4970
JACKSONVILLE, FLORIDA 32232-0019

REPLY TO
ATTENTION OF

CESAJ-RD-NA-J (1145) 18 August 2005

MEMORANDUM FOR Commander, United States Navy, Naval Station Mayport, Mayport, FL 32228-0112

SUBJECT: Department of the Army Permit Number SAJ-2004-9113-JJS

1. Reference is made to your request for review and verification of a U.S. Army Corps of Engineers (Corps) jurisdictional determination submitted by CZR, Inc. for the Department of the Navy. The site was field inspected on January 19, 2005 and March 16, 2005. This review and determination was made using aerial photographs, geological quad sheets, county soils maps, and site-specific information provided by you. Enclosed are 4 copies of the survey submitted to our office which delineate the landward limits of the Corps jurisdiction of the property in question. The project site is Naval Station Mayport in Township 1 South, Ranges 28 East and 29 East, and Township 2 South, Ranges 28 East and 29 East in Jacksonville, Duval County, Florida. A Department of the Army permit would be required for wetland areas indicted on the enclosed surveys. The jurisdictional determination has been assigned number SAJ-2004-9113-JJS.

2. The delineation shown on the enclosed survey represents the approximate upland/wetland boundary for purposes of determining the Corps jurisdictional line. It is noted that multiple wetlands extend off of the property. The verification of the enclosed survey does not provide nor imply the location of any Corps authorized jurisdictional wetlands lines beyond the survey property boundaries. Please be advised that the jurisdictional delineation shown is based on the Corps of Engineers Wetlands Delineation Manual (1987) and is valid for a period **no longer than five (5) years** from the date of this letter unless new information warrants a revision of the determination before the expiration date. If, after the five-year period, this jurisdictional delineation has not been specifically revalidated by the Corps, it shall automatically expire. Any reliance upon this jurisdictional determination beyond the expiration date may lead possible violation of current Federal laws and/or regulations. You may request revalidation of the jurisdictional delineation prior to the expiration date. Any revalidation or

updating will be considered under the method of jurisdictional determination and other applicable regulations in use at the time of the request. Additionally, this delineation has been based on information provided by your office, should we determine that the information was incomplete or erroneous this delineation would be invalid.

3. Since numerous wetlands have been designated as Corps jurisdictional, a Federal Dredge and Fill permit would be required for any proposed impacts to jurisdictional wetlands within the allotted 5-years. If beyond the 5-year timeframe, you are advised to submit a joint permit application reflecting all proposed encroachment into wetlands which may be within the Corps jurisdiction at that time. It is possible that a State permit from the Florida Department of Environmental Protection (DEP) or the St. Johns River Water Management District (SJRWMD) may also be required. Permits may also be required from other local entities.

4. You are cautioned that work performed below the mean high water line or ordinary high water line in waters of the United States, or the discharge of dredged or fill material into adjacent wetlands, without a Department of the Army permit could subject you to enforcement action. Receipt of a permit from the DEP or the SJRWMD does not obviate the requirement for obtaining a Department of the Army permit for the work described above prior to commencing work.

5. Thank you for your cooperation with our permit program. If you have any questions concerning this matter please contact me by mail at the letterhead address, by electronic mail at *Jason.j.spinning@saj02.usace.army.mil*, or by telephone 904-232-1670.

FOR THE COMMANDER:

Jason Spinning 8/18/05

Encl

ROBERT M. CARPENTER
Colonel, Corps of Engineers
Commanding

2

ATTACHMENT 3

PHOTOS 1-4

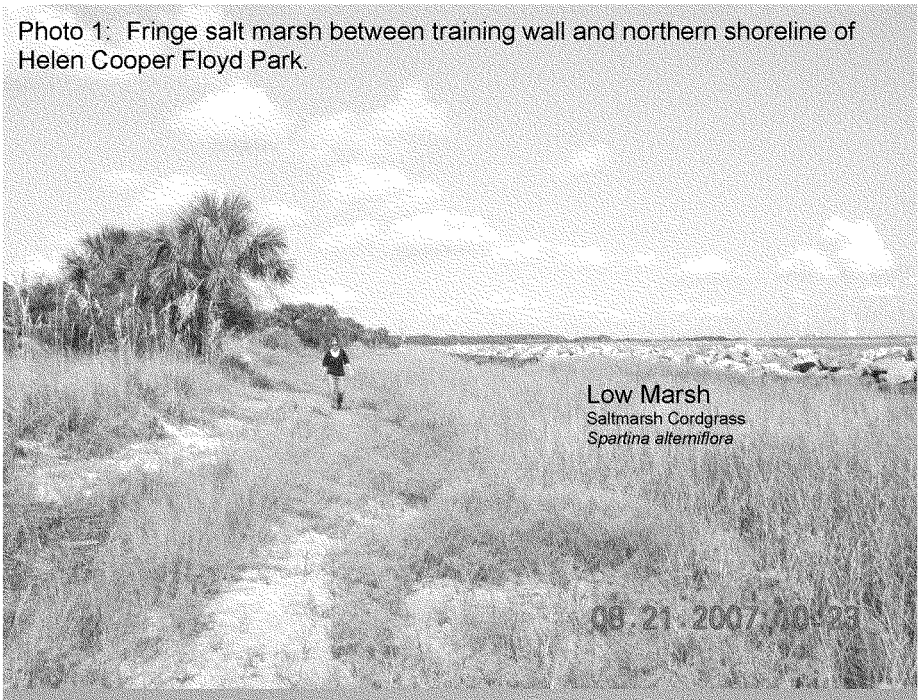


Photo 1: Fringe salt marsh between training wall and northern shoreline of Helen Cooper Floyd Park.

Photo 2: Salt marsh along southern shoreline of Helen Cooper Floyd Park. Photo taken in 2008.

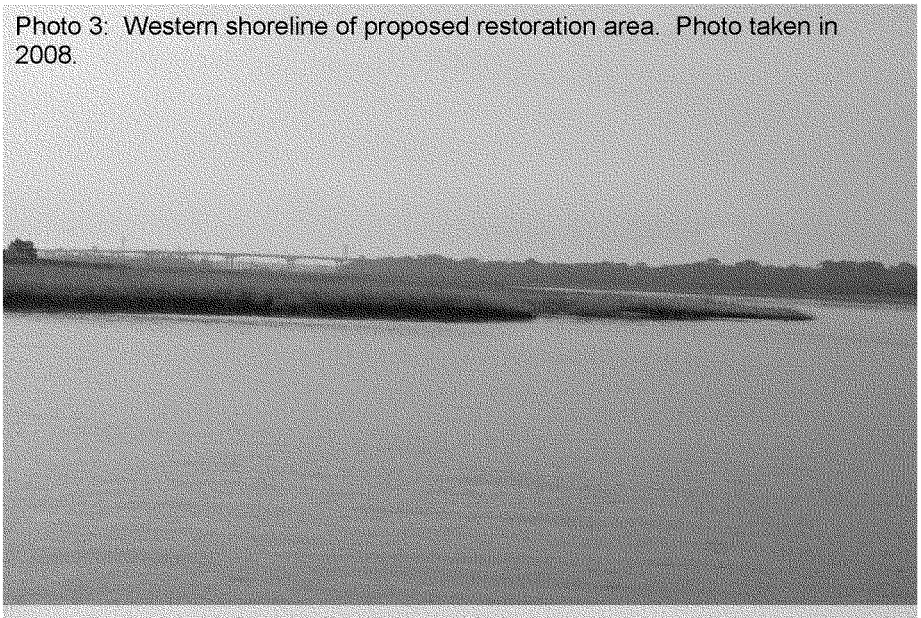


Photo 3: Western shoreline of proposed restoration area. Photo taken in 2008.

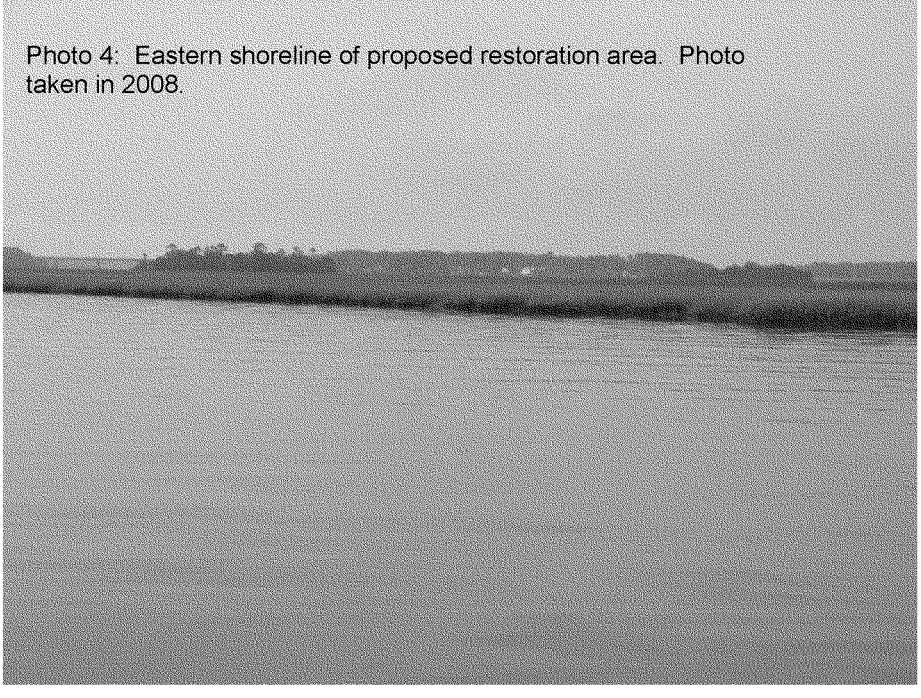


Photo 4: Eastern shoreline of proposed restoration area. Photo taken in 2008.

ATTACHMENT 4

UNIFORM MITIGATION ASESSMENT METHODOLOGY

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Mile Point		Mile Point Impact Site

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
642 Salt Marshes; 743 Spoil Areas; 540 Bays and Estuaries; 652 Shorelines, 654 Oyster Bars		Impact	8.15 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e. OFW, AP, other local/state/federal designation of importance)
St. Johns River	Class III	NMFS EFH and Habitat Area of Particular Concern

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Salt marsh on dredged material at Helen Cooper Floyd Park. Assessment area consists of a fringe salt marsh between a training wall and the park's uplands, and a second larger salt marsh area immediately south of the uplands. Both marsh areas are connected to, or are in the vicinity of, a much larger salt marsh system. Hydrologically connected to St. Johns River and Intracoastal Waterway.

Assessment area description

Low salt marsh dominated by saltmarsh cord grass (*Spartina alterniflora)* transitioning to black needlerush (*Juncus roemerianus*) and then to higher marsh species like sea oxeye (*Borrichia spp.*) and salt grass (*Distichlis spicata*). A small channel runs through the marsh and becomes innundated during incoming tides. The wetland area was identified and delineated by CZR, Inc. on behalf of the the landowners (US Navy). The site was field inspected by USACE Regulatory Division in 2005, and the USACE concurred that this area is jurisdictional.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
In addition to the St. Johns River, an American Heritage River, other significant features include the Timucuan National Ecological and Historic Preserve (over 46,000 acres). Much of the preserve consists of salt marsh.	Not unique, the impact area consists of salt marsh similar to surrounding marsh.

Functions	Mitigation for previous permit/other historic use
Provides foraging and sheltering habitat for wide array of marine organisms.	None

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found.)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
Fishes:over 30 species, e.g. red drum (*Sciaenops ocellata*), sheepshead minnow (*Cyprinodon variegatus*), gobies (Gobiidae), silverside (*Menida* spp.); Decopods: blue crab (*Callinectus sapidus*), penaied shrimp (*Penaeus* spp.), fiddler crabs (*Uca* spp.); Birds: shorebirds, wading birds, other species; Mammals: raccoon (*Procyon lotor*).	Wood stork (Mycteria americana) (E); Snowy egret (*Egretta thula)* (SSC), tri-colored heron (*Egretta tricolor*)(SSC), little-blue heron (*Egretta caerula*)(SSC), white ibis (*Eudocimus albus*) (SSC); foraging; periodic usage.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Fiddler crabs, blue crab, sheepshead minnows, wading birds (e.g. great egret, snowy egret, tri-colored heron, great blue heron, green heron), greater yellowlegs (*Tringa melanoleuca*), raccoon tracks and scat.

Additional relevant factors:

Helen Cooper Floyd Park is adjacent to an existing training wall (rock structure). The park and adjacent shallow water areas were formed when dredged marterial was sidecast to the south of the training wall many years ago. The wall has probably prevented the assessment area from eroding and disappearing.

Assessment conducted by:	Assessment date(s):
USACE, DEP, USFWS, FWC	8/19/2011

Form 62-345.900(1), F.A.C. { effective date }

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Mile Point		Mile Point Impact Site
Impact or Mitigation	Assessment conducted by:	Assessment date:
Impact	USACE, DEP, USFWS, FWC	8/19/2011

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland assessed	Condition is optimal and fully supports wetland functions	Condition is less than optimal, but sufficient to maintain most wetland functions	Minimal level of support of wetland functions	Condition is insufficient to provide wetland functions

	w/o pres or current	with	
.500(6)(a) Location and Landscape Support	8	1	CURRENT: An estimated 8.15 acres of salt marsh occur within the assessment area (AA). Habitats outside the AA represent nearly the full range of habitats required to fulfill life history requirements of wildlife in Part I. If present, invasive exotic plants are limited to upland area, e.g. chinaberry. Wildlife access to fringe wetland is somewhat obstructed by training wall (TW); south wetland area linked to other wetlands providing unobstructed wildlife corridors; upland wildlife corridors are limited by Mayport development. Functions of AA that benefit downstream fish/wildlife limited by barriers, e.g. nearby development. Land uses, i.e. adjacent development, has adverse impacts on fish and wildlife. TW is a hydrologic impediment for fringe wetland; no impediment or flow restrictions of south wetland to downstream areas. Downstream habitats are not critically linked to AA. WITH: The 8.15 acres of salt marsh would be eliminated and replaced with either open water or TW (rock) and therefore all wetland functions would be lost; however, the estuarine open water water habitat that would be created would be connected to the Intracoastal Waterway and St. Johns River.
.500(6)(b)Water Environment (n/a for uplands)	9	2	CURRENT: The water environment of the assessment area consists of flooded salt marsh and estuarine shallow water habitat under tidal influence. Except for slight flow impediments by TW on the fringe wetland, water levels and flows appear appropriate. Water level indicators are distinct and normal. Soil moisture appropriate. Highly modified area due to past dredged material side casting, but current deposition/erosion levels not atypical. Vegetation zonation is appropriate. Wildlife use is appropriate. Plant community not dominated by tolerant species. Standing water not degraded. Water quality near optimal for salt marsh community. TW affects depth, wave energy, etc. of the fringe wetland, but south wetland is optimal for type of community. WITH: The 8.15 acres of salt marsh and estuarine shallow water would be eliminated and replaced with either open water or TW (rock) and therefore all wetland functions would be lost.
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	9	1	CURRENT: Plant cover is appropriate and mostly desirable. Invasive plants, if present, are limited to uplands. Normal plant community regeneration. Age and distribution of plants normal. Cavities for nesting/denning limited due to marsh habitat but also by upland quality. Plants in good condition. Management practices are adequate for perpetuation of salt marsh. Topographic features altered by fill but now stable. Siltation and algal growth not excessive. WITH: The 8.15 acres of salt marsh would be eliminated and replaced with either open water or TW (rock) and therefore all wetland functions would be lost; however, the open water and rock habitat provided by the project would support benthos (i.e. oysters) as well as fish species native to this area.

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.87	0.13

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas
FL = delta x acres = 0.74 x 8.15 =6.03

Delta = [with-current]
0.74

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

Form 62-345.900(2), F.A.C. [effective date 2/2/04]

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Mile Point		Mile Point Mitigation Area

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
540 Bays and Estuaries		Mitigation	

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
St. Johns River	Class III	NMFS EFH and Habitat Area of Particular Concern.

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

Adjacent to remaining salt marsh at Great Marsh Island; part of the island consists of disturbed upland habitat created by past dredged material placement. Hydrologically connected to St. Johns River, Intracoastal Waterway (San Pablo Creek), Chicopit Bay, and Mt. Pleasant Creek.

Assessment area description

Shallow water estuarine habitat with unconsolidated sediment substrate; approximately 400-500 m west and south from impact area. This area was formerly salt marsh, but the marsh has eroded away and has become shallow water estuarine habitat devoid of emergent vegetation, e.g. saltmarsh cord grass (*Spartina alterniflora*).

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
In addition to the St. Johns River, an American Heritage River, other significant features include the Timucuan National Ecological and Historic Preserve (over 46,000 acres). Much of the preserve consists of salt marsh.	Not unique, the mitigation area would consist of salt marsh similar to surrounding marsh.
Functions	**Mitigation for previous permit/other historic use**
Mitigation area consisting of salt marsh and tidal creek(s) would provide foraging and sheltering habitat for wide array of marine organisms.	NA
Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found.)	**Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)**
Fishes:over 30 species, e.g. red drum (*Sciaenops ocellata*), sheepshead minnow (*Cyprinodon variegatus*), gobies (Gobiidae), silverside (*Menida* spp.); Decopods: blue crab (*Callinectus sapidus*), penaled shrimp (*Penaeus* spp.), fiddler crabs (*Uca* spp.); Birds: shorebirds, wading birds, other species; Mammals: raccoon (*Procyon lotor*).	Wood stork (*Mycteria americana*) (E), Snowy egret (*Egretta thula*)(SSC), tri-colored heron (*Egretta tricolor*)(SSC), little-blue heron (*Egretta caerula*)(SSC), white ibis (*Eudocimus albus)* (SSC); foraging, periodic usage.

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

Bottle-nosed dophin (*Tursiops truncatus*).

Additional relevant factors:

As described above, the mitigation area was historically salt marsh, which has eroded and decreased in size. As a beneficial use of dredged material, this project would restore up to 53 acres of low and high salt marsh, oyster beds, tidal channels, and coastal strand (dune) habitat at Great Marsh Island. This would more than offset the loss of 8.15 acres of salt marsh at the impact site, and would result in a significant increase in acreage of locally desirable marine habitats.

Assessment conducted by:	Assessment date(s):
USACE, DEP, USFWS, FWC	8/19/2011

Form 62-345.900(1), F.A.C. [effective date]

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Mile Point		Mile Point Mitigation Site
Impact or Mitigation	Assessment conducted by:	Assessment date:
Mitigation	USACE, DEP, USFWS, FWC	8/19/2011

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetlands assessed	Condition is optimal and fully supports wetland functions	Condition is less than optimal, but sufficient to maintain most wetland functions	Minimal level of support of wetland functions	Condition is insufficient to provide wetland functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	CURRENT: Estuarine shallow water habitat surrounded by salt marsh and disturbed upland habitat on Great Marsh Island as well as the St. Johns River and Intracoastal Waterway. Conditions in the mitigation area (MA) are insufficient to provide wetland functions; however, the exsiting shallow water habitat is connected to Chicopit Bay. WITH: Habitats outside the MA would provide nearly the full range of habitats required to fulfill life history requirements of wildlife in Part I. Invasive exotic plants would be limited to uplands of Great Marsh Island. Wildlife access to MA would temporarily be limited during construction. Functions of MA that would benefit downstream fish/wildlife. There would be no impediment or flow restrictions to downstream areas. Downstream habitats would not be critically linked to MA. The mitigation salt marsh would be placed in a location where the existing adjacent salt marsh as well as the nearby St. Johns River and Intracoastal Waterway could provide an optimal positive influence.	1	8
.500(6)(b)Water Environment (n/a for uplands)	CURRENT: Mitigation site is estuarine shallow water habitat, too deep for emergent vegetation. This area provides a different depth and hydrology than that required by salt marsh, but does allow for the flushing of Chicopit Bay. WITH: Water levels and flows would be appropriate in MA. Water level indicators would be normal. Soil moisture would be appropriate. Deposition/erosion levels would not be atypical. Vegetation zonation would be appropriate. Wildlife use would be appropriate. Plant community would not be dominated by tolerant species. Standing water would not be degraded. Water quality would be near optimal for salt marsh community. Depth, wave energy, etc. would be optimal for type of community. As stated earlier, the proposed training wall would protect the mitigation site from future erosion.	2	9
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	CURRENT: The estuarine shallow water habitat is too deep for emergent vegetation to become established and therefore salt marsh species are not supported; however, the shallow water habitat does provide habitat for some benthos and species of fish native to this area. WITH: Plant cover would be appropriate and desirable. Invasive plants would be limited to uplands. There would be normal plant community regeneration. Age and distribution of plants would be normal. Caveties for nesting/denning would be limited due to marsh habitat. Enviroment would provide desirable plant quality. Management practices would be adequate for perpetuation of salt marsh. Topographic features would be modified, but appropriate for salt marsh. Siltation and algal growth would not be excessive. Created depth, hydrology, as well planting the dominant plant species would provide near optimal support for a salt marsh community.	1	9

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.13	0.87

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

For impact assessment areas

Delta = [with-current]
0.87-0.13=0.74

If mitigation
Time lag (t-factor) = 1.14
Risk factor = 2.0

For mitigation assessment areas
RFG = delta/(t-factor x risk) = 0.74/(1.14 x 2.0) = 0.32

Form 62-345.900(2), F.A.C. [effective date 2/2/04]

Mitigation Determination Formulas
(See Section 62-345.600(3), F.A.C.)

For each impact assessment area:
(FL) Functional Loss = Impact Delta X Impact acres

For each mitigation assessment area:
(RFG) Relative Functional Gain = Mitigation Delta (adjusted for preservation, if applicable)/((t-factor)(risk))

(a) Mitigation Bank Credit Determination

The total potential credits for a mitigation bank is the sum of the credits for each assessment area where assessment area credits equal the RFG times the acres of the assessment area scored

Bank Assessment Area	RFG	X	Acres	=	Credits
example					
a.a.1					
a.a.2					
total					

(b) Mitigation needed to offset impacts, when using a mitigation bank

The number of mitigation bank credits needed, when the bank or regional offsite mitigation area is assessed in accordance with this rule, is equal to the summation of the calculated functional loss for each impact assessment area.

Impact Assessment Area	FL	=	Credits needed
example			
a.a.1			
a.a.2			
total			

(c) Mitigation needed to offset impacts, when not using a bank

To determine the acres of mitigation needed to offset impacts when not using a bank or a regional offsite mitigation area as mitigation, divide functional loss (FL) by relative functional gain (RFG). If there are more than one impact assessment area or more than one mitigation assessment area, the total functional loss and total relative functional gain is determined by summation of the functional loss (FL) and relative functional gain (RFG) for each assessment area.

	FL	/	RFG	=	Acres of Mitigation
example					
a.a.1	6.03		0.32		18.84
a.a.2					
total					

Form 62-345.900(3), F.A.C. [effective date]

ATTACHMENT 5

HISTORICAL MAPS AND AERIALS OF GREAT MARSH ISLAND

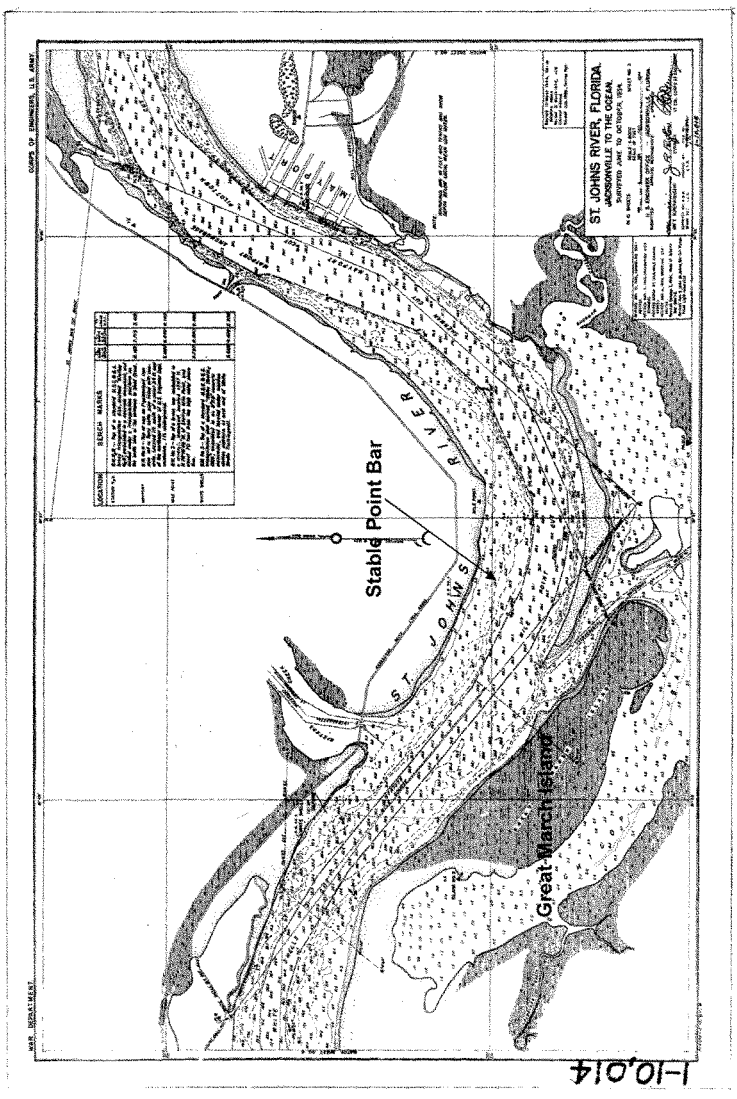
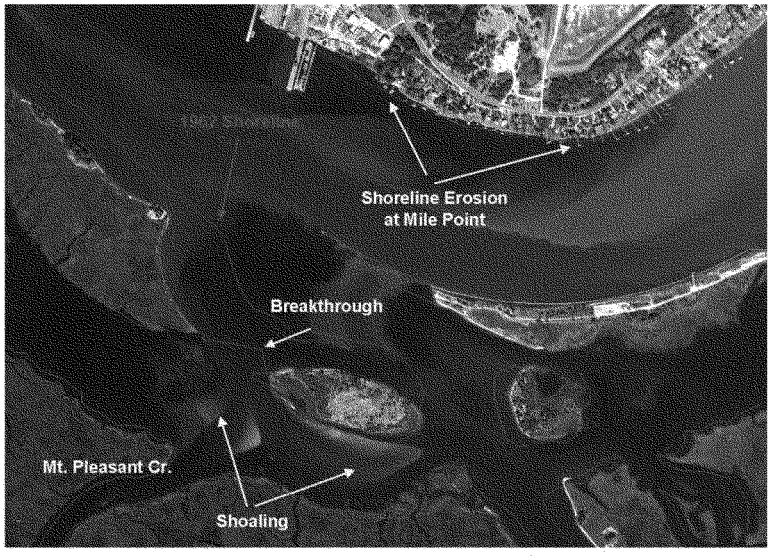


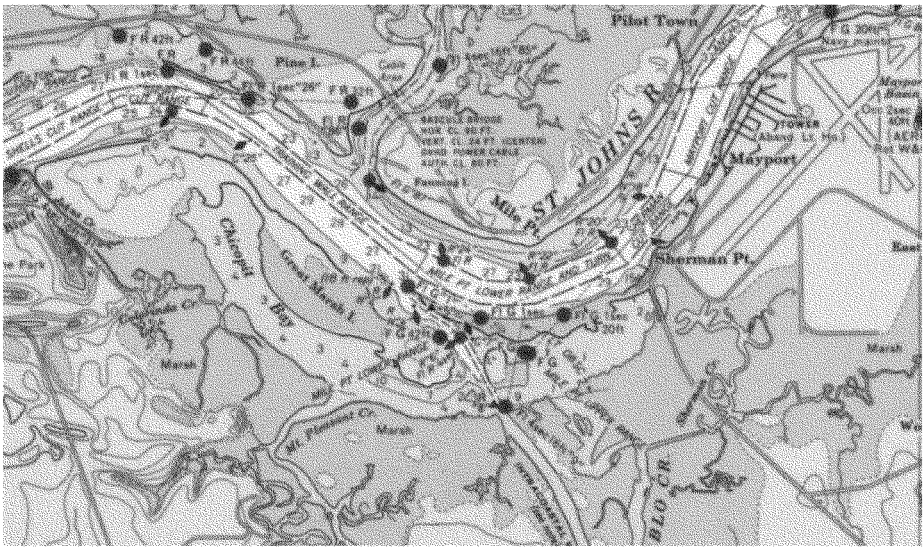
Figure 21. Hydrographic Survey (1934) shows a stable submerged point bar at Mile Point and a stable shoreline around Great March Island prior to the completion/expansion of the Intracoastal Waterway (1935).

Aerial photo (1962)



Aerial photo (2004) showing the change in river shoreline at Mile Point and Chicopit Bay since 1962. The erosion of Great Marsh Island's north shoreline continued until a breakthrough of the island occurred in the late 1990's.

NOAA NAUTICAL CHART 577 FEBRUARY 1957



APPENDIX E
PERTINENT CORRESPONDENCE

JACKSONVILLE HARBOR (MILE POINT) NAVIGATION PROJECT DUVAL COUNTY, FLORIDA, INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT

United States Department of the Interior
U. S. FISH AND WILDLIFE SERVICE
7915 BAYMEADOWS WAY, SUITE 200
JACKSONVILLE, FLORIDA 32256-7517

IN REPLY REFER TO:

FWS Log No. 41910-2011-I-0259

September 14, 2011

Colonel Alfred A. Pantano, District Engineer
Department of the Army
Jacksonville District Corps of Engineers
Planning Division, Environmental Branch
PO Box 4970
Jacksonville, Florida 32232-0019
(Attn: Paul Stodola)

Re: Review of and Response to Assessments of Impacts to Federal Trust and Other Natural Resources from the Jacksonville Harbor (Mile Point) Navigation Feasibility Study, Duval County

Dear Colonel Pantano:

Our office has reviewed your correspondence and accompanying information for subject study. The U.S. Army Corps of Engineers (Corps) and Jacksonville Port Authority (JPA) have entered into this study for the purpose of developing a plan to remove or reduce restrictions to navigation for deep-draft commercial vessels transiting the Mile Point area of Jacksonville Harbor. Those restrictions result from strong crosscurrents within the St. Johns River in the vicinity of its confluence with the Intracoastal Waterway (ICW). The combination of the currents and subsequent transit response by commercial vessels also has resulted in extensive erosion of upland and wetland habitats in the vicinity of the project study area. The redistribution of eroded sediments has further exacerbated historic water flows and navigation in nearby tributaries and Chicopit Bay.

The Tentatively Selected Plan (TSP) generally calls for a combination of the following: existing training wall removal and relocations, excavation/dredging of uplands and wetlands and dredging submerged sediments within and contiguous to the western end of Helen Cooper Floyd Park (HCFP), dredging to create a Flow Improvement Channel (FIC) within north Chicopit Bay, and the reconnection of Great Marsh Island by restoration of up to 53 acres of salt marsh and meandering tidal channel. Work duration is estimated at 465 days. The Mile Point study area is located at the confluence of the St. Johns River and Intracoastal Waterway. It encompasses uplands, wetlands, and other intertidal and submerged lands

associated with all or a portion of HCFP, the two separated segments of Great Marsh Island, Chicopit Bay, Pablo Creek, and Mount Pleasant Creek. The approximate center of the work area is located at 30° 22' 44.90" N; 81° 27' 15.74" W. We submit the following comments in accordance with Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), the Marine Mammal Protection Act of 1972, (MMPA) as amended (16 U.S.C. 1361 *et seq.*), the Fish and Wildlife Coordination Act, as amended (FWCA; 16 U.S.C. 661 et seq.) and the National Environmental Policy Act, as amended (NEPA; 42 U.S.C. 4321-4347).

Endangered Species Act/Marine Mammal Protection Act

The Corps evaluated the TSP for potential impacts to federally-listed species and determined that the TSP occurs within the range of the West Indian (Florida) manatee (*Trichechus manatus latirostris*) and its designated critical habitat, the wood stork (*Mycteria americana*), and piping plover (*Charadrius melodus*). The Corps is consulting with the National Marine Fisheries Service on listed species within that agency's jurisdiction. Those species include the loggerhead (*Caretta caretta*), leatherback (*Dermochelys coriacea*), green (*Chelonia mydas*), and Kemp's ridley (*Lepidochelys kempii*) sea turtles in open water, as well as the shortnose sturgeon (*Acipenser brevirostrum*), small tooth sawfish (*Pristis pectinata*) and Northern right whale (*Eubalena glacialis*).

The Corps determined that the proposed TSP may affect, but is not likely to adversely affect, the wood stork. The Corps identified the study area as within the core foraging area of at least one wood stork breeding colony (Pumpkin Hill); a second colony occurs at the Jacksonville Zoo. Suitable foraging habitat in the form of a tidal channel and slough occur within Helen Cooper Floyd Park adjacent to Chicopit Bay and the St. Johns River. Both waters total less than an acre of habitat. The Corps proposes to create in excess of 1.6 acres of suitable foraging habitat in the form of a tidal channel as part of salt marsh restoration and reconnection of Great Marsh Island. This mitigation represents habitat compensation for the expected project impacts, and is consistent with the Wood Stork Key for central and north Peninsular Florida. As a result, we support the proposed habitat restoration and concur with the Corps' determination of effects on the wood stork. **We recommend that the Corps and its contractors commit to working with our agency to insure that the final plan for salt marsh and tidal channel restoration adequately compensates for the expected impacts to suitable wood stork foraging habitat.**

Regarding the piping plover, the Corps acknowledged that the TSP would eliminate approximately 2,800 feet of shoreline and contiguous emergent tidal flats along the southwestern side of HCFP. This habitat is not within designated critical wintering habitat for this species, and is approximately 2.6 miles southwest of the westernmost extent of such habitat. The Corps did not observe piping plovers foraging or roosting at this location during multiple site visits conducted in the fall and winter months. As a result, the Corps determined that the proposed TSP may affect, but is not likely to adversely affect, the piping plover and its designated critical wintering habitat. Our view is that there is ample foraging and roosting habitat within the designated FL-Unit 35. Habitat similar to the expected impact area exists between it and the designated unit. Based on the preceding, we concur

with the Corps' determination of effect for this species and its critical habitat. We will address mitigation of the expected habitat impacts in our comments provided under the FWCA and NEPA.

With respect to the manatee and its designated critical habitat, the available information for Duval County indicates that significantly fewer manatees have been observed in the vicinity of the study area compared to more upstream locations of the St. Johns River and its tributaries. Those sightings decrease further as colder weather and declining water temperatures cause animals to migrate south to warmer environments. The ICW, however, is a critical travel corridor for manatees during their spring and fall migrations. We therefore anticipate a temporary increase in the number of animals transiting the study area from March through May, and again from September through November.

Based on the available information, the Corps anticipates that the in-water work to remove a portion of the existing training wall and construct the two new walls will only occur during daylight hours. This work likely will be performed using a crane and barge. The Corps will require a dedicated manatee observer to be present for all in-water work associated with the removal and/or placement of boulders or other structures. The Corps also anticipates using a 16 inch cutter-suction dredge operating 24 hours a day, seven days a week. The dredged material will be piped to the wetland mitigation site. The excavated material likely will be mixed with the wetland and submerged sediments into a liquid slurry that also will be piped to the mitigation site. That site will be enclosed on its northern boundary by means of rock and possibly some number of flow-through concrete structure units (CSUs) serving as Wave Attenuation Devices (WADs). The southern boundary will be enclosed using geotextile tubes or bags filled with excavated material. Those structures will be left in place and are expected to gradually degrade over time.

Based on the preceding and the inclusion of the most recent standard manatee conditions for in-water work into the project plans and specifications, the Corps has determined that the TSP may effect, but is not likely to adversely affect, the manatee or its designated critical habitat.

The Corps in support of the above cites lack of evidence of take of a manatee from any dredging equipment, or the type of waterborne construction equipment being proposed for this work. Since completion of the project biological assessment, one such mortality was confirmed this past July within the Miami River (Carol Knox, FWC, pers. com). The mortality occurred during a mechanical dredge operation that was using a backhoe in approximately 10 – 12 feet of water. The backhoe bucket struck the animal and caused fatal internal injuries. There was no requirement for a dedicated and experienced manatee observer to be present.

It is our view that a hydraulic dredge in general poses less of a risk of adverse effects to manatee than mechanical dredging. Although we expect manatee presence within the study area to increase during the migratory periods, animals in migration tend to move quickly through the transient areas in route to their specific winter and summer grounds. Based on this, we expect the standard in-water conditions to be sufficient. **We do, however,**

recommend that the Corps include in the project's plans and specifications a requirement for all lighting associated with this operation to be of sufficient intensity and direction so as to provide all personnel enough illumination to observe for manatees with the unaided eye within the distances required under the standard in-water conditions.

We support use of a dedicated manatee observer, **equipped with polarized sunglasses and binoculars,** during removal and placement of training walls and other in-water structures, and the restriction of this work to daylight hours. **In the event mechanical methods are used to conduct the dredging, we recommend that an additional one to two dedicated observers be assigned to this work. All such persons shall be experienced in manatee observation as described in the manatee observer guidelines developed by the Florida Fish and Wildlife Conservation Commission. The Corps shall require the contractor to submit the name(s) of the dedicated observer(s) and supporting information on that observer's qualifications, for our review and concurrence prior to the commencement of the in-water work.**

Regarding the hours of in-water operations, we further recommend that the Corps define in the project plans and specifications the term "daylight hours" as "that period between one-half hour after sunrise to one-half hour before sunset".

A review of the proposed mitigation area revealed additional potential risks for manatees. Those risks include entrapment within the mitigation enclosure, entrainment within a CSU, and physical impacts from the dredge pipeline. In order to reduce these risks of adverse impacts to insignificant or discountable levels, we recommend the Corps include the following additional measures in its project plans and specifications.

- A requirement to limit the size of the openings within the CSUs to no more than 8 inches in diameter, and/or the grating of openings larger than 8 inches
- A requirement to securing the dredge pipeline such that its' placement does not impede manatee movement nor pose a potential physical risk to manatee from crushing, etc.
- A requirement to elevate the mitigation enclosure training wall and southern boundary structures to elevations that would preclude manatees from swimming over the top of the training wall/boundary structures into the enclosure during monthly flood tides
- A requirement to thoroughly inspect the enclosure just prior to final closure from the bay and/or river to insure no manatees are present within the enclosure. In the event of manatee presence within the enclosure, the animal(s) must be allowed to leave it of its (their) own volition, prior to proceeding with final construction
- A requirement to thoroughly inspect the enclosure following its closing to insure no manatees are trapped within it. In the event that one or more animals are observed within the enclosure, all work related to the enclosure must cease immediately. The contractor must notify the Corps without delay, and the Corps likewise contact our office (904)-731-3098 and the Florida Fish and Wildlife

Conservation Commission (FWCC) at 1-888-404-FWCC(3922), to discuss the appropriate response(s)
- In the event take of a manatee occurs as a result of the project, the Corps shall immediately discontinue work and contact our office and FWCC at the above numbers

The Corps has agreed to include all preceding measures and recommendations in its project plans and specifications. As a result, we concur with the Corps' determination that the proposed project will not adversely affect the manatee or its designated critical habitat. In addition, because no incidental take of manatees is anticipated, no such authorizations under the MMPA will be needed.

Although this does not represent a biological opinion as described in section 7 of the Act, it does fulfill the requirements of the Act and no further action is required. If modifications are made to the project; if the Corps/contractor fails to comply with the project plans and specifications; if additional information involving potential effects to listed species becomes available; or if unauthorized take of manatees occurs during construction, consultation will be reinitiated.

Fish and Wildlife Coordination Act/National Environmental Policy Act

The following comments fulfill our coordination requirements and public interest review under FWCA and NEPA, respectively.

The Corps has considered and evaluated five general alternative plans intended to address two major study objectives: the erosion of the Mile Point shoreline and unsafe inbound transit of deep-draft commercial navigation through the Mile Point area during ebb tide. Those plans were characterized by one or more management measures that would address either or both of the major considerations. The No Action alternative was also considered. The results were a total of 14 management measures that the Corps subjected to hydrodynamic modeling.

The results of the initial modeling, and further modeling of the 150-foot training wall reach channel widening measure under different conditions, indicated that relocation of the existing Mile Point Training Wall was the only measure that demonstrated significant change in the distribution and direction of the currents within the navigation channel. These changes met both study objectives.

Based on the above, and an additional cost evaluation of the disposal of the excavated and dredged material from the above relocation, the Corps developed a Tentatively Selected Plan having the following specifications.

- Removal of the western 3110 feet of the existing Mile Point training wall and the construction of a relocated Eastern leg training wall of approximately 2050 feet
- Mechanical excavation and hydraulic dredge of approximately 889,000 cubic

yards of uplands, wetlands, and submerged sediment from within and around the western end of HCFP to a depth of –13 feet mean low water to accommodate the relocated Eastern leg training wall

- Disposal via pipeline of the above material across the ICW and into an enclosed water area created by construction of a 4250-foot training wall across the northern side of the breakthrough at Great Marsh Island. The southern boundary of this enclosure will extend approximately 1200 feet. Redistribution of this material and its seed/root source, supplemented by planting of marsh vegetation are expected to result in the restoration of up to 53 acres of vegetated high and low salt marsh and meandering tidal channel.
- Dredging of a 3623-foot Flow Improvement Channel to a depth of – 7 feet mean low water, along the western side of north Chicopit Bay. The resulting spoil will be placed into the Great March Island restoration area. The FIC is expected to offset any adverse effects to flow within the bay and contiguous Mount Pleasant Creek that may result from the closing of the breakthrough of Great Marsh Island

All usable stone material recovered from the existing training wall will be stockpiled for reuse in either the West or East Leg of the relocated training wall. That material, as well as additional stone and all other materials, equipment, and supplies required for this project are likely to be stockpiled within the middle section of HCFP. Off-loading is likely to occur via one or more barges. The additional materials include Concrete Structure Units that will be part of the West Leg training wall. These CSUs are designed to remain stable while having openings that will permit tidal flow into and out of the northern side of the restoration area. Containment along the southern boundary of the site will be accomplished by means of geotextile bags and tubes filled with excavated material. Both these structures are designed to degrade in time, leaving a natural marsh slope along the bay side of the restoration area.

The vegetated wetlands associated with the impact area represent typical high and low estuarine salt marsh and vegetation typical of the transitional zone between high marsh and uplands. There is an extensive, shallow tidal channel on the southern side of HCFP that supports a variety of benthic fauna and epifauna, including annelids, molluscs, gastropods, crustaceans, and finfish. A fringing salt marsh and tidal slough occurs along the northern side of HCFP between the uplands and existing training wall. Due to its narrowness and abrupt elevation changes, its vegetative community appears somewhat less diverse than the southern wetlands. A submerged, shallow littoral shelf is contiguous to the southern marsh, as is an approximately 1300-foot linear stretch of intertidal sand beach that lies within the impact area. The adjacent disturb uplands contain a variety of woody and herbaceous vegetation similar to that found on the numerous other spoil disposal sites along the St. Johns River and ICW. All of the above directly or indirectly support various species of shorebirds, wading birds, and passerines. The Corps intends to cut down the woody vegetation within the impact area and remove it off site to an approved landfill. The excavated sediment and remaining plant material will be mixed with the dredged sediments for pipeline transport to the restoration site. Elevations at the restoration site will be carefully calculated and field calibrated to insure successful establishment of both high and low marsh flora and fauna.

As noted throughout the Environmental Assessment, the U.S. Fish and Wildlife Service has generally been supportive of the Corps' proposal to restore salt marsh habitat and reconnect Great Marsh Island. We also agree in general with the results of the Unified Mitigation Assessment Methodology applied to both the impact and restoration areas. The current restoration plan does not, however, include re-establishment of the sand beach or littoral shelf as described previously. Such habitats as we noted above are vital components of the coastal strand. **As a result, we recommend that the Corps add the re-establishment of these important habitats in its wetland mitigation plan or as a separate item in its overall project plans and specifications.**

The dredging of the FIC is intended to recreate channel and tidal conditions present within north Chicopit Bay and Mt. Pleasant Creek prior to the breakthrough at Great Marsh Island. However, as a result of the breakthrough and the settling of sand and silt within north Chicopit Bay from that and other areas of erosion, significant emergent shoals have developed within the area. These habitats now provide importing foraging and roosting sites for shorebirds and seabirds on the ebb tide. It appears that the FIC has the potential to impact directly some of these shoals, while the expected increase in boat traffic indirectly may disturb the avifauna using the remaining shoals. **Based on this assessment, we also recommend that the Corps determine the extent of any such impacts, and mitigate for the loss of this habitat by creating additional emergent shoal habitat in more remote and protected locations within north Chicopit Bay.**

In summary, it is our position that the TSP contains actions that will impact terrestrial, aquatic, and semi-aquatic ecosystems and their communities. We support the proposed actions intended to mitigate and compensate for some of those impacts, and strongly urge the Corps to consider our additional recommendations to extend that mitigation to other habitats. Our finding is that as a result of those actions and the abundance of shallow, open-water habitat within and adjacent to the study area, the tentatively selected plan to improvement local navigation and shoreline erosion in the Mile Point area of Jacksonville Harbor will not have significant, long-term impacts on Federal Trust and other natural resources. This represents the finding of our agency and does not incorporate the comments or findings of other agencies of the Department of the Interior.

If you have any questions regarding this response, please contact Mr. John Milio of my staff at the address on the letterhead, or by calling (904) 731-3098.

Sincerely,

for David L. Hankla
Field Supervisor

cc:

Mr. George Getsinger, NMFS
Ms. Barbara Goodman, NPS, Timucuan Ecological and Historic Preserve
Ms. Carol Knox
Fish and Wildlife Conservation Commission
Division of Habitat and Species Conservation
Imperiled Species Management Section
620 South Meridian Street
Tallahassee, Florida 32399

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
263 13th Avenue South
St. Petersburg, FL 33701-5505
(727) 824-5312, FAX (727) 824-5309
http://sero.nmfs.noaa.gov

F/SER31:CH

JUL 13 2011

Mr. Eric Summa
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232

Re: Jacksonville Harbor Mile Point Navigational Study

Dear Mr. Summa:

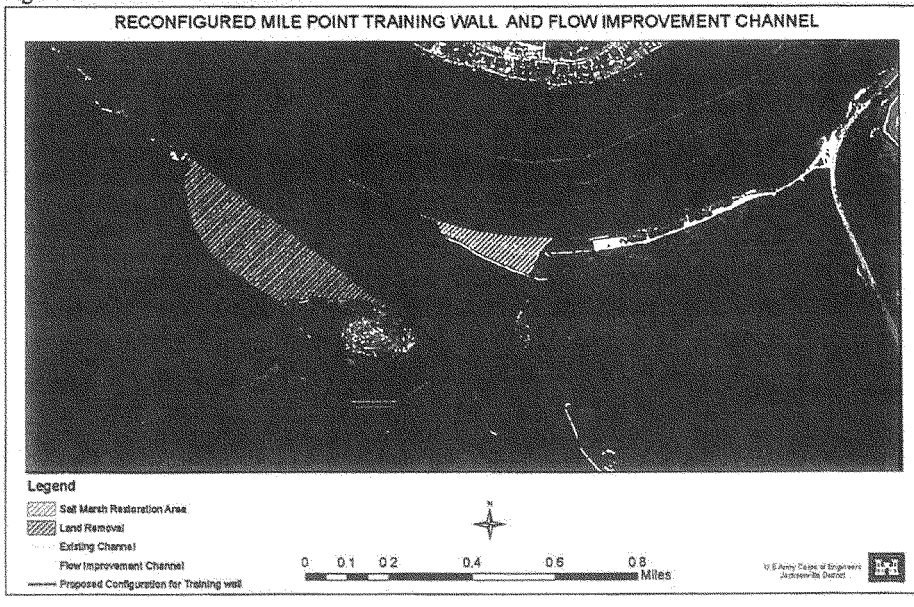
This letter responds to your April 25, 2011, letter regarding Jacksonville Harbor (Mile Point) Navigational study that proposes to alleviate erosive forces along the Mile Point shoreline and eliminate or reduce navigation restrictions to deep-draft vessels at Mile Point. Initially, the COE requested Endangered Species Act (ESA) consultation on the Mile Point Navigational study by letter dated August 14, 2008; however, the information that was provided to us was insufficient to evaluate the project's effects on listed species. Subsequently, NMFS requested additional information and completion of a biological evaluation via e-mail on October 1, 2008. The COE reinitiated consultation with NMFS via e-mail on March 17, 2011. During correspondence, NMFS requested that the COE demonstrate that the Mile Point Navigational study was a separate action from, and thus was not interrelated to, the Jacksonville Harbor Deepening action. On April 25, 2011, the COE provided a biological evaluation and an explanation that demonstrated that the Mile Point Navigation study is a separate action independent of the Jacksonville Harbor Deepening action and that both projects are operating under separate project authorities. You determined the Mile Point project may affect, but is not likely to adversely affect, smalltooth sawfish, swimming sea turtles, and shortnose sturgeon and requested our concurrence, pursuant to Section 7 the Endangered Species Act (ESA). NMFS' determinations regarding the effects of the proposed action are based on the description of the action in this informal consultation. You are reminded that any changes to the proposed action may negate the findings of the present consultation and may require reinitiation of consultation with NMFS.

The Mile Point project is located at 30.3836°N and 81.4522°W (North American Datum of 1983) on the St. Johns River, Jacksonville, Duval County, Florida. The project area (Mile Point) consists of 5,000 feet of shoreline located along the north shore of the St. Johns River between river mile 4 and 5, east of the Intracoastal Waterway (ICW). The ICW intersects with the St Johns River, at nearly a 90-degree angle approximately 5 river miles above the mouth of the St. Johns River. The confluence angle formed where the ICW meets the St. Johns River causes strong crosscurrents, primarily during ebb tides. The St. Johns River flows in a southeasterly direction during ebb tide while the ICW flows in a northwesterly direction; thus, the combination of high flow and the confluence angle causes a

deflection of the main channel's flow to the northeast. The proposed action would reduce crosscurrents on the Mile Point shoreline, thereby reducing and/or eliminating restrictions to navigation and slowing erosion in the project area.

The COE proposes to reconfigure the existing training wall, restore Great Marsh Island using dredged material, and create a flow improvement channel into Chicopit Bay (Figure 1). Relocation of the Mile Point Training Wall (MPTW) includes the removal of the western 3,110 feet of the existing training wall and the construction and relocation of approximately 2,050 feet of the East Leg Training Wall (ELTW). The ELTW incorporates a larger scour apron (25 feet) than the western training wall (10 feet), due to the predicted permanent shift of stronger currents from the east. The relocated ELTW consists of reconstructing 2,050 feet of the training wall and connecting it to the existing structure at Helen Cooper Floyd Park. The West Leg Training Wall (WLTW) consists of constructing 4,250 feet of the training wall across the breakthrough at Great Marsh Island. Construction and relocation activities will require the excavation of approximately 889,000 cubic yards of material. Dredged material will be used to restore 53 acres of salt marsh at the breakthrough at Great Marsh Island and as foundation for the relocated/constructed training walls. It is estimated that approximately14,600 cubic yards of suitable stone material will be recovered from training wall removal. Suitable material will be stockpiled and reused at either the ELTW or the WLTW.

Figure 1.



The salt marsh restoration area is located in an area where the Great Marsh Island had previously occurred, but has since been eroded by the strong crosscurrents at Mile Point. Restoring 53 acres of salt marsh at the breakthrough area at Great Marsh Island will prevent further erosion and

deterioration of the island and the marsh. The flow improvement channel will be constructed to offset any impacts caused by closing off and restoring the marsh area at the breakthrough. The flow improvement channel will improve water quality and flushing in Chicopit Bay. The construction of the flow improvement channel consists of dredging a channel 80 feet wide, 6 feet deep, and 3,623 feet in length through western Chicopit Bay. Dredged material will be used at the Great Marsh Island restoration area. Construction activities will be completed using landside excavators, a cutter-suction dredge, and cranes and barges. Landside excavators will be used to remove material above the mean high water line. A 16-inch cutter-suction dredge will be used to remove material to -13 feet mean low water and perform dredging for the flow improvement channel. Barge-mounted cranes will be required to remove stone segments of the training wall to be removed; this equipment will also be used during construction of the East and West legs of the training walls. The entire project is expected to take 16 months to complete. However, in order to achieve desired elevation, the salt marsh restoration area may need to be adjusted approximately 1 year after initial settling. The applicant will be required to comply with NMFS' Sea Turtle and Smalltooth Sawfish Construction Conditions, dated March 23, 2006.

Five species of sea turtles (loggerhead, green, hawksbill, Kemp's ridley, and leatherback), smalltooth sawfish, and shortnose sturgeon, protected by the ESA, can be found in or near the action area and may be affected by the project. The project is not located within designated critical habitat for any listed species under NMFS' purview. NMFS believes the proposed work is not likely to adversely affect any listed species or designated critical habitat under our purview. Sea turtles, smalltooth sawfish, and shortnose sturgeon could be injured or killed as a result of potential interactions with dredging equipment; however, we believe this effect is discountable because these species are highly mobile and likely to avoid the area during construction. Moreover, NMFS has previously determined that non-hopper-type dredging activities, including cutter-suction dredges, are not likely to adversely affect sea turtles, sturgeon, and sawfish.[1] Sea turtles, smalltooth sawfish, or shortnose sturgeon may be affected by being temporarily unable to forage at the site due to potential avoidance of dredging activities, but these effects will be temporary and there are adequate existing, adjacent foraging and refuge resources available outside of the construction area. Listed species may be affected by being temporarily unable to use the site due to potential avoidance of construction activities and related noise, and physical exclusion from areas contained by turbidity curtains, but these effects will be insignificant. Disturbance from construction activities and related noise will be intermittent and only occur during the day for part of the construction period and turbidity curtains will only enclose small areas at any one time in the project area, will be removed upon project completion, and will not appreciably interfere with use of the area by listed species.

This concludes your consultation responsibilities under the ESA for species under NMFS' purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action.

[1] November 19, 2003, biological opinion to U.S. Army Corps of Engineers, Combined Gulf of Mexico Districts, on the continued hopper dredging of channels and borrow areas in the Gulf of Mexico.

We have enclosed additional information on other statutory requirements that may apply to this action, and on NMFS' Public Consultation Tracking System to allow you to track the status of ESA consultations. If you have any questions, please contact Calusa Horn by e-mail at Calusa.Horn@noaa.gov. Thank you for your continued cooperation in the conservation of listed species.

Sincerely,

Miles M. Croom

for Roy E. Crabtree, Ph.D.
Regional Administrator

Enclosure

File: 1514-22.F.4
Ref: I/SER/2011/01796

PCTS Access and Additional Considerations for ESA Section 7 Consultations (Revised 7-15-2009)

Public Consultation Tracking System (PCTS) Guidance: PCTS is an online query system at **https://pcts.nmfs.noaa.gov/** that allows federal agencies and U.S. Army Corps of Engineers' (COE) permit applicants and their consultants to ascertain the status of NMFS' Endangered Species Act (ESA) and Essential Fish Habitat (EFH) consultations, conducted pursuant to ESA section 7, and Magnuson-Stevens Fishery Conservation and Management Act's (MSA) sections 305(b)2 and 305(b)(4), respectively. Federal agencies are required to enter an agency-specific username and password to query the Federal Agency Site. The COE "Permit Site" (no password needed) allows COE permit applicants and consultants to check on the current status of Clean Water Act section 404 permit actions for which NMFS has conducted, or is in the process of conducting, an ESA or EFH consultation with the COE.

For COE-permitted projects, click on "Enter Corps Permit Site." From the "Choose Agency Subdivision (Required)" list, pick the appropriate COE district. At "Enter Agency Permit Number" type in the COE district identifier, hyphen, year, hyphen, number. The COE is in the processing of converting its permit application database to PCTS-compatible "ORM." An example permit number is: SAJ-2005-000001234-IPS-1. For the Jacksonville District, which has already converted to ORM, permit application numbers should be entered as SAJ (hyphen), followed by 4-digit year (hyphen), followed by permit application numeric identifier with no preceding zeros. For example: SAJ-2005-123; SAJ-2005-1234; SAJ-2005-12345.

For inquiries regarding applications processed by COE districts that have not yet made the conversion to ORM (e.g., Mobile District), enter the 9-digit numeric identifier, or convert the existing COE-assigned application number to 9 numeric digits by deleting all letters, hyphens, and commas; converting the year to 4-digit format (e.g., -04 to 2004); and adding additional zeros in front of the numeric identifier to make a total of 9 numeric digits. For example: AL05-982-F converts to 200500982; MS05-04401-A converts to 200504401. PCTS questions should be directed to Eric Hawk at Eric.Hawk@noaa.gov. Requests for username and password should be directed to PCTS.Usersupport@noaa.gov.

EFH Recommendations: In addition to its protected species/critical habitat consultation requirements with NMFS' Protected Resources Division pursuant to section 7 of the ESA, prior to proceeding with the proposed action the action agency must also consult with NMFS' Habitat Conservation Division (HCD) pursuant to the MSA requirements for EFH consultation (16 U.S.C. 1855 (b)(2) and 50 CFR 600.905-.930, subpart K). The action agency should also ensure that the applicant understands the ESA and EFH processes; that ESA and EFH consultations are separate, distinct, and guided by different statutes, goals, and time lines for responding to the action agency; and that the action agency will (and the applicant may) receive separate consultation correspondence on NMFS letterhead from HCD regarding their concerns and/or finalizing EFH consultation.

Marine Mammal Protection Act (MMPA) Recommendations: The ESA section 7 process does not authorize incidental takes of listed or non-listed marine mammals. If such takes may occur an incidental take authorization under MMPA section 101 (a)(5) is necessary. Please contact NMFS' Permits, Conservation, and Education Division at (301) 713-2322 for more information regarding MMPA permitting procedures.

CESAJ-PD-EC 06 September 2011

MEMORANDUM FOR RECORD

SUBJECT: Coordination Act Report for the Jacksonville Milepoint Dredging and Dredge Materials Management Plan and Environmental Assessment.

PURPOSE: To document an informal understanding between the U.S. Army Corps of Engineers, Jacksonville District, and the U.S. Fish and Wildlife Service, North Florida Field Office.Project Information

Project Description. Mile Point is located within the City of Jacksonville, Duval County, Florida. It consists of 5,000 feet of shoreline located along the north shore of the St. Johns River, primarily between river miles 4 and 5, and east of the Intracoastal Waterway (IWW). The approximate center of the proposed work area is located at the following coordinates: 30° 22' 44.90" N; 81° 27' 15.74" W. The preferred alternative is to relocate the Mile Point Training wall along with adding a Chicopit Bay flow improvement channel. This is the Tentatively Selected Plan (TSP) which combines the reconfiguration of the existing training wall, restoration of Great Marsh Island which is the least cost dredged material disposal option, and the creation of a flow improvement channel in Chicopit Bay. The least cost disposal method is to restore the breakthrough at Great Marsh Island by placing dredged material at the Island and constructing a Western Leg Training Wall, approximately 4,250 feet. Restoration of this area provides 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 53 acres of salt marsh restoration. This alternative provides incidental environmental benefits in addition to providing mitigation for the 8.15 acres impacted by the training wall removal.

Coordination.

The Fish and Wildlife Coordination Act (FWCA; 16 U.S.C. 661 et seq., March 10, 1934, as amended 1946, 1958, 1978, and 1995) requires Federal agencies to consult with the U.S. Fish and Wildlife Service (Service) regarding the impacts to fish and wildlife resources and the proposed measures to mitigate these impacts. Additional coordination authorities exist through the National Environmental Policy Act (NEPA; 42 U.S.C. 4321-4347, January 1, 1970, as amended 1975 and 1982) review process and the consultations required under the Endangered Species Act of 1973 (ESA; 7 U.S.C. 136, 16 U.S.C. 1531 et seq., December 28, 1973). The Service has been in coordination and consultation with the Corps through NEPA and the ESA in which impacts to fish and wildlife resources adequately addressed via these two authorities. The Service will include comments relevant to FWCA in the Service's response to the Corps' Biological Assessment. The Corps and the Service agree to utilize the NEPA review and ESA consultation processes to complete coordination responsibilities under the FWCA. This agreement will avoid duplicate analysis and documentation as authorized under 40 CFR section 1500.4(k), 1502.25, 1506.4, and is consistent with Presidential Executive Order for Improving Regulation and Regulatory Review, released 18 January 2011.

Florida Department of Environmental Protection
Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Jennifer Carroll
Lt. Governor

Herschel T. Vinyard Jr.
Secretary

September 9, 2011

Mr. Paul E. Stodola
Jacksonville District, Planning Division
U. S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, FL 32232-0019

RE: U. S. Department of the Army, Jacksonville District Corps of Engineers
Draft Integrated Feasibility Report and Environmental Assessment
Jacksonville Harbor (Mile Point) Navigation Study – Duval County, Florida
SAI # FL201107115851C (Reference Previous SAI # FL200804024147C)

Dear Mr. Stodola:

The Florida State Clearinghouse has coordinated a review of the above-captioned Draft Integrated Feasibility Report and Environmental Assessment (IFR/EA) under the following authorities: Presidential Executive Order 12372; Section 403.061(42), *Florida Statutes;* the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Environmental Protection (DEP) staff notes that the project will require an Environmental Resource Permit (ERP) under Part IV of Chapter 373, *Florida Statutes,* from the Northeast District Office in Jacksonville. The proposed project impacts to jurisdictional wetlands and/or surface waters, and any proposed mitigation activities offsetting those impacts, will be assessed in accordance with Chapter 62-345, *Florida Administrative Code.*

DEP's Hydrographic Engineer has reviewed the Draft IFR/EA and concurs with the modeling study results for the Tentatively Selected Plan (TSP). Crosscurrents and eddies are key hydrodynamic factors affecting river shoreline stability, particularly in the river winding area. The study results showed that the TSP would reduce shoreline erosion and navigational impediments in the river to improve navigation in Jacksonville

Harbor. DEP's engineering and permitting staff have the following questions and concerns about the Chicopit Bay Flow Improvement Channel (FIC), the new western training wall and the reconfigured eastern training wall:

- The report indicated that post-construction, the peak flow velocities in the vicinity of the FIC (*i.e.*, near the mouth of the Chicopit Bay, leading to the Intracoastal Waterway) would be 3.6 feet per second. What are the peak flow velocities at the same location if the FIC is not constructed?

- Since related local water velocity will diminish after the initial dredging, the FIC may become a sediment/sand trap as tidal and riverine currents move sediments into the channel. Reportedly, port representatives stated in a public meeting that they have no plans to maintenance-dredge the FIC after its excavation. What are the Corps' plans for future maintenance-dredging of the FIC to keep it open?

- Currently, flows from Mt. Pleasant Creek enter the St. Johns River through the area that will become the material placement/mitigation restoration site (*i.e.*, between the eastern and western portions of Great Marsh Island). Upon construction of the new western training wall and the placement of the dredged material, this northward flow of the creek will be eliminated. Will the FIC improvements fully compensate for the loss of this flow vector? Again, what plans are available to maintain the FIC and sustain access to Mt. Pleasant Creek?

- If the western training wall is constructed prior to creation of the FIC, sediments from the upstream drainage basin will accumulate in West Chicopit Bay and flushing is at risk of deteriorating. The same risk would occur if the FIC is not maintained, as stated above. Until a sustainable maintenance commitment is identified and construction sequencing of the western wall, restoration site and FIC are addressed to prevent flushing impairment, the DEP may not have the reasonable assurance necessary to provide State Water Quality Certification for the project as presented in the Draft IFR/EA.

- The reconfigured eastern training wall will block an existing channel between Helen Cooper Floyd Park and a salt marsh island directly south of the park that leads to the eastern portion of Chicopit Bay. Another channel exists south of the salt marsh island between San Pablo Creek and eastern Chicopit Bay, but its bathymetry appears shallower than the planned FIC. Will the new eastern training wall significantly impact the channel hydrology to East Chicopit Bay? How will the change in flow velocities affect wetland habitat along the shoreline of the salt marsh island?

Further coordination with DEP's Northeast District staff is recommended to facilitate resolution of the above issues. For additional information and assistance, please contact Mr. Jim Maher, P.E., at (904) 256-1650 or Ms. Connie Webel at (904) 256-1652.

The Florida Fish and Wildlife Conservation Commission (FWC) advises that in-water work on the project could adversely affect the Florida manatee and marine turtles. Since no information was provided detailing the timing or duration of the proposed construction and dredging activities, FWC cannot recommend specific avoidance and minimization measures for the manatee, other than the 2011 Standard Manatee and Marine Turtle Construction Conditions for in-water work. As more details become available, further consultation with FWC staff will be necessary to determine the site-specific conservation measures for the project. The following additional information should be included in the Final IFR/EA to facilitate FWC's future review of the project: complete and detailed plans for the Great Marsh Island restoration, and habitat surveys identifying and quantifying affected marine habitats. For additional information and assistance, please refer to the enclosed FWC letter and contact Ms. Kristen Nelson Sella at (850) 922-4330.

The St. Johns River Water Management District (SJRWMD) notes that its staff has been communicating directly with the U. S. Army Corps of Engineers regarding the hydrologic effects of the project, such as the potential for erosion to affect the shoreline and emergent vegetation within Chicopit Bay, and will continue this coordination. The SJRWMD advises that a high mortality rate among young dolphins was reported during deepening of the St. Johns River navigation channel. Staff therefore recommends the careful placement of dredge spoil pipes along the river channel near active populations, to avoid potential impairment of communications between adult and juvenile dolphins. For additional information, please see the enclosed SJRWMD comments. Should you require further details or assistance, please contact Mr. Dean Campbell, SJRWMD Technical Program Manager, at (386) 329-4360.

Based on the information contained in the Draft IFR/EA and the enclosed state agency comments, the state has determined that, at this stage, the proposed federal action is consistent with the Florida Coastal Management Program (FCMP). To ensure the project's continued consistency with the FCMP, the concerns identified by reviewing agencies must be addressed prior to project implementation. The state's continued concurrence will be based on the activity's compliance with FCMP authorities, including federal and state monitoring of the activity to ensure its continued conformance, and the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be

determined during the environmental permitting process in accordance with Section 373.428, *Florida Statutes*.

Thank you for the opportunity to review the proposal. Should you have any questions regarding this letter, please contact Ms. Lauren P. Milligan at (850) 245-2170.

Yours sincerely,

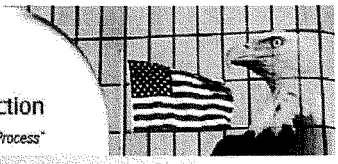
Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/lm
Enclosures

cc: Jodi Conway, DEP, Northeast District
Roxane Dow, DEP, BBCS
Joe Walsh, FWC
Steve Fitzgibbons, SJRWMD

Florida
Department of Environmental Protection
"More Protection, Less Process"



Categories

Project Information	
Project:	FL201107115851C
Comments Due:	08/19/2011
Letter Due:	09/20/2011
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - DRAFT INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT, JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY - JACKSONVILLE, DUVAL COUNTY, FLORIDA.
Keywords:	ACOE - JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY - DUVAL CO.
CFDA #:	12.107

Agency Comments:

NE FLORIDA RPC - NORTHEAST FLORIDA REGIONAL PLANNING COUNCIL

No Comments

DUVAL - DUVAL COUNTY

No comments from the Duval County Planning and Development Department.

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

The FWC advises that in-water work could adversely affect the Florida manatee and marine turtles. Since no information was provided detailing the timing or duration of the proposed construction and dredging activities, FWC cannot recommend specific avoidance and minimization measures for the manatee, other than the 2011 Standard Manatee and Marine Turtle Construction Conditions for in-water work. As more details become available, further consultation with FWC staff will be necessary to determine the site-specific conservation measures for this project. Staff requests that additional information be included in the Final IFR/EA to facilitate FWC's review and future state permitting of the proposal: complete detailed Great Marsh Island restoration plans and habitat surveys identifying and quantifying the affected marine habitats. For additional information and assistance, please refer to the enclosed FWC letter and contact Ms. Kristen Nelson Sella at (850) 922-4330.

STATE - FLORIDA DEPARTMENT OF STATE

No Comment/Consistent

TRANSPORTATION - FLORIDA DEPARTMENT OF TRANSPORTATION

The FDOT Seaport Office and District Two have no comments.

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

DEP staff notes that an ERP under Part IV of Chapter 373, F.S., will be required from the Northeast District Office in Jacksonville. The proposed project impacts to jurisdictional wetlands and/or surface waters, and any proposed mitigation activities offsetting those impacts, will be assessed in accordance with Chapter 62-345, F.A.C. The DEP's Hydrographic Engineer has reviewed the Draft IFR/EA and concurs with the modeling study results for the Tentatively Selected Plan (TSP). The crosscurrent/eddy is a key hydrodynamic factor affecting river shoreline stability, typically in the river winding area. The study results showed that this plan will reduce shoreline erosion and navigation restrictions to improve navigation in Jacksonville Harbor. Questions arise, however, from the engineer and ERP permitting staff regarding the new Chicopit Bay Flow Improvement Channel (FIC), new western training wall and reconfigured eastern training wall. Further coordination with DEP Northeast District staff is recommended to facilitate resolution of the referenced issues. For additional information and assistance, please refer to the state clearance letter and contact Mr. Jim Maher, P.E., at (904) 256-1650 or Ms. Connie Webel at (904) 256-1652.

ST. JOHNS RIVER WMD - ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

District staff have been communicating directly with the U.S. Army Corps of Engineers about this project (e.g., relative to concerns about hydrologic effects, such as the potential for erosion to affect the shoreline and emergent vegetation within Chicopit Bay) and will continue this coordination. The Tentatively Selected Plan includes adding a Chicopit Bay flow improvement channel, which involves dredging. USACE should work closely with the marine mammal experts at the University of North Florida to develop and use best management practices that will protect the resident dolphin population from dredging-related impacts. [-- Background information/note: Last year, the St. Johns River experienced a well-documented marine mammal mortality event. In addition, there was an unusually high death rate among young dolphins occurred coincident with the deepening of the St. Johns River Channel. Although it is not certain, it has been suggested that the placement of the dredge spoil pipes along the channel of the river in a location where the river's dolphin population is active, and at a time when young dolphins are still reliant upon their mothers, may have impaired the ability of mothers and their young to communicate. For further information, please contact District Technical Program Manager, Dean Campbell, at (386) 329-4360.--]

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Managing fish and wildlife resources for their long-term well-being and the benefit of people.

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MyFWC.com

September 2, 2011

Ms. Lauren P. Milligan
Department of Environmental Protection
Florida State Clearinghouse
3900 Commonwealth Boulevard, M.S. 47
Tallahassee, FL 32399-3000
Lauren.Milligan@dep.state.fl.us

RE: SAI #FL201107115851C, Jacksonville District Corps of Engineers – Draft Integrated Feasibility Report and Environmental Assessment – Jacksonville Harbor (Mile Point) Navigation Study – Duval County

Dear Ms. Milligan:

The Division of Habitat and Species Conservation, Imperiled Species Management Section, of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated our agency's review of the Draft Integrated Feasibility Report and Environmental Assessment (EA) for Jacksonville Harbor (Mile Point) Navigation Study-Duval County, Florida. We are providing the following input under the National Environmental Policy Act, the Fish and Wildlife Coordination Act, and the Coastal Zone Management Act/Florida Coastal Management Program (CZMA/FCMP).

Project Description

The project is located at Mile Point in Jacksonville Harbor, Duval County. Mile Point consists of approximately 5000 feet of shoreline located along the north side of the St. Johns River and east of the Intracoastal Waterway (IWW). The study evaluated the Mile Point erosion problem and analyzed options that would reduce or relocate difficult cross currents during the ebb flow. The Tentatively Selected Plan is to relocate the existing Mile Point training wall along with adding a Chicopit Bay flow improvement channel, locating both of these features along the south shore of the St. Johns River at the intersection with the IWW. This would include the removal of the western 3110 feet of the existing training wall and the construction of a relocated Eastern Leg training wall of approximately 2050 feet. The proposed estimate of dredged material is 889,000 cubic yards.

Potentially Affected Resources

Wildlife and their habitats: Once an alternative is selected and an application is submitted, the FWC will be able to more thoroughly review and provide more specific comments on the project; until then, we are submitting general comments. Listed species that may occur in the study area are included in the table below.

Scientific Name	Common Name	Status*
Trichechechus manatus latirostris	Florida manatee	FE
Eubalaena glacialis	Northern right whale	FE
Charadrius melodus	Piping plover	FT
Haemotopus palliatus	American oystercatcher	SSC
Mycteria americana	Wood stork	FE

Caretta caretta	Loggerhead sea turtle	FT
Chelonia mydas	Green sea turtle	FE
Lepidochelys kempii	Kemp's ridley sea turtle	FE
Acipenser brevirostrum	Shortnose sturgeon	FE
Pristis pectinate	Smalltooth sawfish	FE

* SSC – State Species of Special Concern; FT - Federally Threatened; FE - Federally Endangered. Federally listed species are also included on the Florida Endangered and Threatened Species list as "Federally designated endangered and threatened species."

The project would impact approximately 8.15 acres of saltmarsh habitat at Helen Cooper Floyd Park, which has been identified as Essential Fish Habitat. In addition, our staff notes that there may be impacts to potential nesting habitat for the American oystercatcher.

Issues and Recommendations

Impacts to wildlife: In-water work could adversely affect the Florida manatee and marine turtles. Since no information was provided in terms of the need for, or seasonality of, the length of or duration of project work, nor whether dredging will be utilized, it would be premature for us to recommend specific avoidance and minimization measures for the manatee at this time. While we have no preference regarding the alternatives, we do not foresee that potential adverse impacts associated with this work could not be adequately offset with appropriate conservation measures. Possible manatee conservation measures that may be recommended by our agency could include restrictions on blasting; monitoring of turbidity barriers; exclusionary grating on culverts; requiring the presence of qualified manatee observers during in-water work; a defined or limited construction window; and no nighttime work. Once more details become available, further coordination with our agency will be necessary in order to determine site-specific measures for this project. At a minimum, we suggest that the 2011 Standard Manatee and Marine Turtle Construction Conditions for in-water work (enclosed) be incorporated into these documents as conservation measures and followed for all in-water activity.

Impacts to habitat: There are currently multiple information gaps related to potential habitat impacts and habitat restoration aspects of the proposed project. If the Corps of Engineers includes the information requested below in the final EA, it would facilitate our review of the project and accelerate the future permitting process. In addition, this information will provide the FWC's marine habitat staff with information that will assist them in providing technical recommendations towards successful habitat minimization and mitigation. Therefore, we recommend that the following information be included in the final EA:

1. Complete detailed restoration plans so state agencies can assess the habitat restoration/mitigation aspects of this project, including:

    a) Potential effects that the newly proposed channel may have on the southeast portion of Great Marsh Island;
    b) The total amount of fill required to create the Great Marsh Island restoration site and identify the individual sources of fill and the amount of fill that will be used from each site;
    c) Proposed construction elevations for Great Marsh Island and the expected subsidence elevations; and

d) Origin of nursery stock that will be used for planting the restoration sites and the species that will be used.

2. The results of habitat surveys identifying and quantifying the existing marine habitats that would be impacted by the proposed project, other than the 8.15 acres of salt marsh at Helen Cooper Floyd Park.

3. Identify the material that would be used to construct the new training wall as well as the construction designs for the structures. If possible, include a discussion on the potential types of construction methodology.

Summary

As information is developed for this project that is not available at this time, FWC may have additional comments regarding appropriate conservation measures. We have confirmed the appropriateness of a phased consistency determination with the Corps of Engineers (*pers. communication* Paul Stodola, August 31st, 2011), and FWC and the Corps are in agreement that the final consistency determination will be provided during the permitting phase when all the details will be available. Therefore, FWC is evaluating this project for CZMA consistency using a phased approach pursuant to 15 CFR 930.36(d). The information available in the draft EA outlines the conceptual plan and design of the project, and FWC agrees that this concept is consistent with provisions in the FCMP. Because details are still forthcoming, the final CZMA consistency for the project will be evaluated during the environmental permitting process. As this project moves forward, please have your agency staff and the applicant's representatives coordinate with my office as needed. We can be contacted at FWCConservationPlanningServices@MyFWC.com or I can be called directly at 850-413-6966. If your staff has any specific questions regarding our comments in this letter, I encourage them to contact Kristen Nelson Sella at (850) 922-4330 or Kristen.Sella@MyFWC.com.

Sincerely,

Joseph Walsh, Ph.D.
Sub-section Leader
Habitat Conservation Scientific Services Section

jw/kns
ENV 1-3-2
Jacksonville Harbor Navigation Study_3534_090211
Enclosure
cc: Mr. Paul E. Stodola, USACE, Paul.E.Stodola@usacc.army.mil
Ms. Samantha J. Borer, USACE, Samanthat.J.Borer@usacc.army.mil

STANDARD MANATEE AND MARINE TURTLE CONSTRUCTION CONDITIONS FOR IN-WATER WORK

July 2011

The permittee shall comply with the following conditions intended to protect manatees and marine turtles from direct project effects:

a. All personnel associated with the project shall be instructed about the presence of marine turtles, manatees and manatee speed zones, and the need to avoid collisions with (and injury to) these protected marine species. The permittee shall advise all construction personnel that there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act, the Endangered Species Act, and the Florida Manatee Sanctuary Act.

b. All vessels associated with the construction project shall operate at "Idle Speed/No Wake" at all times while in the immediate area and while in water where the draft of the vessel provides less than a four-foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

c. Siltation or turbidity barriers shall be made of material in which manatees and marine turtles cannot become entangled, shall be properly secured, and shall be regularly monitored to avoid manatee entanglement or entrapment. Barriers must not impede manatee or marine turtle movement.

d. All on-site project personnel are responsible for observing water-related activities for the presence of marine turtles and manatee(s). All in-water operations, including vessels, must be shutdown if a marine turtle or manatee comes within 50 feet of the operation. Activities will not resume until the animal(s) has moved beyond the 50-foot radius of the project operation, or until 30 minutes elapses if the animal(s) has not reappeared within 50 feet of the operation. Animals must not be herded away or harassed into leaving.

e. Any collision with or injury to a marine turtle or manatee shall be reported immediately to the Florida Fish and Wildlife Conservation Commission (FWC) Hotline at 1-888-404-3922, and to FWC at ImperiledSpecies@myFWC.com. Collision and/or injury should also be reported to the U.S. Fish and Wildlife Service (for north Florida, Jacksonville 1-904-731-3336 or for south Florida Vero Beach 1-772-562-3909).

f. Temporary signs concerning manatees shall be posted prior to and during all in-water project activities. All signs are to be removed by the permittee upon completion of the project. Temporary signs that have already been approved for this use by the FWC must be used. One sign which reads *Caution: Boaters* must be posted. A second sign measuring at least 8 ½" by 11" explaining the requirements for "Idle Speed/No Wake" and the shut down of in-water operations must be posted in a location prominently visible to all personnel engaged in water-related activities. These signs can be viewed at MyFWC.com/manatee. Questions concerning these signs can be sent to the email address listed above.

CAUTION: MANATEE HABITAT
All project vessels
IDLE SPEED / NO WAKE
When a manatee is within 50 feet of work
all in-water activities must
SHUT DOWN
Report any collision with or injury to a manatee:
Wildlife Alert:
1-888-404-FWCC(3922)
cell *FWC or #FWC

COUNTY: DUVAL
SCH-CORPS-NEPA
2011-03436

DATE: 7/7/2011
COMMENTS DUE DATE: 8/19/2011
CLEARANCE DUE DATE: 9/5/2011
SAI#: FL201107115851C
REFER TO: FL200804024147C

MESSAGE:

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
ENVIRONMENTAL PROTECTION	ST. JOHNS RIVER WMD		
FISH and WILDLIFE COMMISSION			
X STATE			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.

X **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**

Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.

Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.

Project Description:

DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - DRAFT INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL ASSESSMENT, JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY - JACKSONVILLE, DUVAL COUNTY, FLORIDA.

To: Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)
3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

EO. 12372/NEPA

- ☑ No Comment
- ☐ Comment Attached
- ☐ Not Applicable

Federal Consistency

- ☑ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From:

Division/Bureau: Historical Resources

Reviewer: Michael Hart Laura A. Kammerer Deputy SHPO

Date: 8/24/11 8.25.11

RECEIVED
AUG 26 2011
DEP Office of Intergov't Programs

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

August 16, 2011

Samantha Borer
U.S. Army Corps of Engineers
Jacksonville District
Planning Division
P.O. Box 4970
Jacksonville, Florida 32232-0019

Subject: Review of the Navigation Study for Jacksonville Harbor (Mile Point), Draft Integrated Feasibility Report and Environmental Assessment, Duval County, Florida (dated June 2011)

Dear Ms. Borer:

Consistent with Section 102(2)(c) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) has reviewed the Navigation Study for Jacksonville Harbor (Mile Point), Draft Integrated Feasibility Report and Environmental Assessment, Duval County, Florida (the "Draft IFR/EA"). EPA understands that Mile Point is located in Duval County, Florida and consists of about 5000 feet of shoreline located along the north shore of the St. Johns River and east of the Intracoastal Waterway (IWW). The study's overall purpose is to determine plans to evaluate the on-going Mile Point erosion problem and to provide technical recommendations for reducing or relocating the difficult crosscurrents during the ebb flow at the confluence of the St. Johns River with the IWW. Due to safety concerns, the St. Johns Bar Pilots and the Captain of the Port, United States Coast Guard (USCG), have enacted a restriction which requires inbound vessels with a draft greater than 33 feet to be restricted to transiting "close to or on a flood tide before entering the harbor to avoid the difficult ebb flow currents." The U.S. Army Corps of Engineers (Corps) reports that any corrective action project will contribute to National Economic Development (NED) Plan and be in accordance with all national environmental statutes, applicable executive orders, and other Federal planning requirements.

EPA understands that the Jacksonville Port Authority has agreed to be a non-Federal financial sponsor of any corrective action, and we note that this Jacksonville Mile Point study assesses Federal interest in navigation improvements with a particular emphasis on erosion of the Mile Point shoreline. EPA notes that an evaluation of benefits, costs, and environmental impacts will determine the Federal interest. The feasibility study was authorized by a resolution of the House Committee on Transportation and Infrastructure adopted March 24, 1998 for Mile Point, Florida. between Florida Environmental Protection (FDEP) Monuments R-44 and R-51.

EPA notes that the Draft IFR/EA appropriately summarizes historical Corps activities and studies in the area related to the continued erosion of the Mile Point shoreline and the effects of the navigation restrictions. The Draft IFR/EA also appropriately recounts the history of geotechnical failures on the north Mile Point shoreline due to erosion, including a serious failure event at parcel no.8856, in which the head scarp appears to have eroded up to 100 feet back from the seawall. Other erosion events from 1986 to 1997 are also documented in the Draft IFR/EA. These failures have reportedly contributed to the difficult crosscurrents at the confluence of the IWW and the St. Johns River during the ebb tide, leading the St. Johns Bar Pilots to enact navigation restrictions for inbound vessels with a transit draft greater than 33 feet to avoid transiting during the ebb tide. The navigational restrictions reportedly affect many types of large ships such as Bulkers, Tankers, Container Vessels, and General Cargo vessels. Jacksonville Harbor is also experiencing growth for both Container and Bulk Vessels, and Container services for the new Mitsui terminal are now in operation.

EPA notes that the Draft IFR/EA appropriately concludes that any proposed corrective action(s) must be in the national interest and can only be constructed if the environment is protected from unacceptable impacts. EPA understands that any benefits of corrective action(s) should minimize the impacts of the flows out of the IWW during the ebb tide, slow or redirect the velocities away from the north bank, and slow the progression of erosion. Reducing or redirecting the difficult crosscurrents in the harbor will allow the pilots to reduce or eliminate navigational restrictions impeding the free movement of vessels. EPA notes that the Corps has demonstrated through computer modeling that the potentially dangerous crosscurrents exiting the IWW southern channel under ebb tide can be redirected to more closely parallel the alignment of the Federal navigation channel instead of being focused toward the erosion prone areas along the northern shoreline of Mile Point.

Corrective action will probably lead to some adverse impacts, though, including loss of salt marsh adjacent to the existing Mile Point training wall - -and this would have to be mitigated. EPA concurs with any measures taken by the Corps that will avoid, minimize, and compensate for adverse impacts to salt marsh. EPA also concurs with the Corps' goal of selecting the least cost dredging alternative that also features beneficial uses of dredged material. Finally, EPA also supports the Corps' proposal for creation of habitat beyond the required mitigation, and we also support flow improvement measures that prevent any adverse impacts to the restoration of Great Marsh Island.

EPA notes that the Draft IFR/EA appropriately evaluates a wide range of non-structural and structural alternatives, as well as evaluating combinations of these alternatives.

Non-structural alternatives evaluated included:

- *operational measures such as light-loading, use of tide, additional tugs,*
- *the No action alternative*

Structural alternatives evaluated included:

- *North shoreline groin field*
- *San Pablo Creek IWW Submerged Weir*
- *Rebuild Mile Point Training Wall*
- *150-Foot Training Wall Reach Widening*
- *Eastern Chicopit Bay Diversion*
- *Relocate (Reconfigure) Mile Point Training Wall*
- *Short Cut Widener*
- *Removal of the waterward portion of the Mile Point Training Wall under the O&M Program*

EPA notes the Draft IFR/EA features a Tentatively Selected Plan (TSP) which combines the reconfiguration of the existing training wall, restoration of Great Marsh Island (which is the least cost disposal option), and the creation of a flow improvement channel (FIC) in Chicopit Bay. The training wall reconfiguration includes removal of the western 3110 feet of the existing Mile Point training wall and the construction of a relocated Eastern Leg training wall of approximately 2050 feet. 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. All other material excavated will be placed as beneficial use in the Salt Marsh Mitigation Area at Great Marsh Island and as foundation construction material for the relocated training wall. The Draft IFR/EA notes that the Corps has estimated that approximately 14,600 cy of armor stone can be recovered for reuse purposes, but additional studies are recommended to precisely calculate the exact quantities of stone available for reuse.

The Corps' hydrodynamic computer modeling of the TSP has shown a reduction in the crosscurrents in the navigation channel. It is anticipated that the new realignment of the Mile Point training wall would produce flows coming out of the IWW from the south that are more aligned with the Federal channel. This is expected to provide a decrease in water velocity in the areas north of the channel at Mile Point and slow the progression of the erosion that has occurred at the north bank of Mile Point. A computer ship simulation was also appropriately run to test the effects of the alternatives on the crosscurrents at Mile Point. The Draft IFR/EA notes that members of the St. Johns Bar Pilot Association that participated in the computer ship simulation process found "favorable results in reducing the crosscurrents at Mile Point under the preferred alternative."

EPA notes that a majority of the St. Johns Bar Pilots support the TSP (as expressed in a letter 15 May 2008), and EPA also notes that these bar pilots consequently believe that the improvements will reduce or eliminate the restrictions associated with IWW crosscurrents. A second computer ship simulation was run on September 14-17, 2009, and reportedly confirmed the first analysis, demonstrating favorable results for the Relocation of the Mile Point training wall alternative in reducing or eliminating tidal restrictions at Mile Point. EPA concurs with the Corps' on-going NEPA outreach

program in meeting with the U.S. Coast Guard officials, harbor pilots, commercial towing company representatives, tug/barge operators, as well as the environmental resource agencies and adjacent landowners to discuss the Jacksonville Mile Point study and the hydrodynamic computer modeling results.

While, EPA finds Draft IFR/EA to be well written and very detailed, we recommend that the Final IFR/EA should conclusively address and resolve the following potential issues/problems that have been raised as part of the NEPA process. The resolution to these issues should be thoroughly documented in the Final IFR/EA:

- Official correspondence with the U.S. Coast Guard about risk analysis should be included with the Final IFR/EA.

- Specific and detailed information should be provided (or referenced) that addresses any changes in local sedimentation or shoaling rates that may be caused by the proposed work. In addition to shoreline erosion on the north shore of Mile Point, a breakthrough has occurred at Great Marsh Island on the southern bank of the St. Johns River, and this has led to severe shoaling in Chicopit Bay. The Corps should conclusively address the potential for increased shoaling in Chicopit Bay and flow alterations.

- Conclusive information about the eligibility for listing of the Great Marsh Island prehistoric site should be included in the Final IFR/EA.

- The Corps should conclusively address the north bank homeowners' concerns about increased future erosion of their property and subsequent property losses. These homeowners on the north bank of the river at Mile Point have experienced significant shoreline erosion to their property and have legitimate and serious concerns about future property losses; therefore, final recommendations for solving these erosion problems should be included in the Final IFR/EA in the Problems and Opportunities section.

- The Final IFR/EA should also include the computer model predicted velocities along Mile Point and demonstrate that they are within acceptable limits.

- The Corps should also show the proposed work will not adversely affect the salt marshes in the Greenfield and Four Pines Islands areas.

- Pursuant to Section 7 of the Endangered Species Act, coordination with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) reportedly has been initiated. The Corps and the USFWS have entered into an agreement on the review of the draft Fish and Wildlife Coordination Act Report for this project. The Final IFR/EA should include copies of all official correspondence with NMFS and USFWS, as well as the Jacksonville Port Authority (JPA).

- A report on any future real estate negotiations (that occurred after the Draft IFR/EA was issued) regarding the expansion of the Great Marsh Island

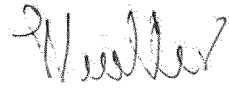
Restoration Area should be included, as well as an update on the efforts of the Mayport Naval Station and the Nature Conservancy on their real estate agreements.

- A report of issues raised at future public meetings should also be included in the Final IFR/EA.

- The status of the existing Mile Point training wall's eligibility for the National Register of Historic Places should be documented in the Final IFR/EA.

We appreciate the opportunity to review the project. EPA requests a copy of the signed Finding of No Significant Impact (FONSI) for our files if it is eventually issued for this project. Should you have questions, feel free to coordinate with Paul Gagliano, P.E., of my NEPA staff, at 404/562-9373 or at gagliano.paul@epa.gov, or EPA Region 4's Eric Hughes, located in your Jacksonville District office.

Sincerely,



Heinz J. Mueller, Chief
NEPA Program Office
Office of Policy and Management

cc Eric Hughes, USEPA Region 4 -Jacksonville District office

SEMINOLE TRIBE OF FLORIDA
TRIBAL HISTORIC PRESERVATION OFFICE

TRIBAL HISTORIC
PRESERVATION OFFICE
SEMINOLE TRIBE OF FLORIDA
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PRISCILLA D. SAYEN
TREASURER
MICHAEL D. TIGER

Paul Stodola
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

THPO#: 008548

July 25, 2011

Subject: Comments on the EA for the Jacksonville Harbor (Mile Point) Navigation Study, Duval County, Florida

Dear Mr. Stodola,

The Seminole Tribe of Florida's Tribal Historic Preservation Office (STOF-THPO) has received the Jacksonville District Corps of Engineers' correspondence concerning the aforementioned project. The STOF-THPO has no objection to your findings at this time. However, the STOF-THPO would like to be informed if cultural resources that are potentially ancestral or historically relevant to the Seminole Tribe of Florida are inadvertently discovered during the construction process. We thank you for the opportunity to review the information that has been sent to date regarding this project. Please reference ***THPO-008548*** for any related issues.

We look forward to working with you in the future.

Sincerely,

Direct routine inquiries to:

Willard Steele
Tribal Historic Preservation Officer
Seminole Tribe of Florida

Anne Mullins
Compliance Review Supervisor
annemullins@semtribe.com

JP:am:ws

St. Johns Bar Pilot Association

PORT OF JACKSONVILLE
FLORIDA
4910 OCEAN STREET
ATLANTIC BEACH, FLORIDA 32233
Telephone - 904-249-5631
FAX - 904/249-7523

September 3, 2010

Mr. Steve Ross
Project Manager
Jacksonville District
U.S. Army Corps of Engineers
701 San Marco Blvd
Jacksonville, FL 32207

Dear Mr. Ross,

As per our previous May 15, 2008 letter, the river pilots of the St. Johns Bar Pilot Association remain concerned with the very strong currents and cross currents that exist on the St. Johns River. Over the last several decades one area in particular has received much attention. It is the junction of the St. Johns River and the Atlantic Intracoastal Waterway – the Mile Point Area. This condition has unfortunately gone uncorrected and continues to impact the safe movement of maritime trade in and out of the Port of Jacksonville. The southern side of this intersection holds particular hazards to passing ship traffic as it has a "training wall". This rock structure was used in the last century to "train" river currents in the desired direction, using the strong river currents to keep the river swept, thus reducing the need for dredging. The drawback of this old method of channel design in this particular application is that the current coming out of the Intracoastal Waterway during outgoing tides is forced to pass around the end of this rock structure. It does this at nearly a ninety degree angle with surprising strength – sometimes as much as 4 knots. This cross current is strong enough to push a deeply loaded ship across and possibly out of the ship channel with all of the negative consequences including grounding. With BAE Systems (Ex-Atlantic Marine) Shipyard located on the north bank this creates a hazard of considerable concern.

We have been very fortunate to date that no serious incidents or accident has occurred at Mile Point despite the considerable hazard to navigation and safety concerns these current conditions represent. The way in which our pilots have dealt with this hazard to date has been to avoid it with deep draft vessels by limiting start in times on all vessels with draft over 33' to the flood current only, while this cross current doesn't exist. This restriction causes significant delays for individual vessels as well as concentrating deep draft traffic during times of flood current, creating traffic congestion throughout the waterway.

In addition to the safety and hazards to navigation; these conditions and subsequent restrictions result in the port and its new 40' channel being underutilized.

This issue becomes even more critical as the size and capacity of ships calling on Jacksonville has increased over the past 15 years to take advantage of economy of scale. With the advent of Post-Panamax vessels calling on Jacksonville expected to increase in the years to come; this condition is only going to become a greater hazard and safety issue.

In order to facilitate the modernization of the Jacksonville Harbor channel and correct the Mile Point issue, the St. Johns Bar Pilots has in the past worked closely with the U.S. Army Corps of Engineers (USACE) through Ship Simulation Studies of various proposed solutions at their Vicksburg, Mississippi facility. Members of the St. Johns Bar Pilot Association continue to participate regularly in a USACE Ship Stimulation Study of proposed solutions to this cross current problem at Mile Point. I would like to note the existing currents in this area have been very difficult to replicate or model. Even so, our members reviewed the results of the ongoing feasibility study and have found it to be an excellent starting point that field experience will help to validate and refine. The St. Johns Bar Pilots and the port/maritime community continue to depend on USACE selecting and implementing a solution to correct this issue. We also urge you to expedite any corrective action and give serious consideration to the training wall modification, channel widening, and hopefully, a combination of both. We remain confident in the ability of the USACE to select the alternative that will ensure safe transit of all vessels, especially deep draft vessels through the Mile Point area. Time is of the essence.

Upon completion of the USACE recommended solution for the Mile Point area and a short testing period for validation of Ship Simulation results, the St. Johns Bar Pilot Association will be able to remove the Mile Point restrictions on deep draft vessels that are currently in effect. This commitment is the best we can offer given the complicated current effects in the Mile Point Area and our dedication to the safety of vessel transits. We will continue to coordinate with the U.S. Army Corps of Engineers and the Jacksonville Port Authority during the design and construction of this project as well as future improvement projects, hopefully to include a significant deepening and widening of the Federal Channel.

Thank you for your time and consideration to this very important matter of safety.

Sincerely,

James P. Winegeart
President, St. Johns Bar Pilot Association

St. Johns Bar Pilot Association

PORT OF JACKSONVILLE
FLORIDA
4910 OCEAN STREET
MAYPORT, FLORIDA 32233
Telephone - 904-249-5631
FAX - 904/249-7523

May 15, 2008

Mr. Steve Ross
Project Manager
Jacksonville District
U.S. Army Corps of Engineers
701 San Marco Blvd.
Jacksonville, Fl. 32207

Dear Mr. Ross,

The river pilots of the St Johns Bar Pilot Association have dealt with the very strong currents and cross currents that exist on the St Johns River for many decades, safely facilitating the movement of maritime trade in and out of the Port of Jacksonville. Over the years, especially in recent years, ships have increased in size and carrying capacity to take advantage of economy of scale. To facilitate this increased efficiency ports must be capable of handling these larger vessels with dredged channels that are deeper and wider with consideration for cross currents. In order to facilitate the modernization of our ship channel the St Johns Bar Pilots have worked closely with the US Army Corps of Engineers (USACE) through Ship Simulation Studies of various proposed solutions at their Vicksburg, Mississippi facility.

Over the last several decades one area in particular that has received much attention is the junction of the St Johns River and the Atlantic Intracoastal Waterway- the Mile Point Area. The southern side of this intersection holds particular hazards to passing ship traffic as it has a training wall. This rock structure was used in the last century to "train" river currents in the desired direction, using the strong river currents to keep the river swept, thus reducing the need for dredging. The drawback of this old method of channel design in this particular application is that the current coming out of the Intracoastal Waterway during outgoing tides is forced to pass around the end of this rock structure which it does at nearly a ninety degree angle with surprising strength- sometimes as much as 4 knots. This cross current is strong enough to push a deeply loaded ship across and possibly out of the ship channel with all of the negative consequences including grounding.

The way in which we have dealt with this hazard to date has been to avoid it with deep draft vessels by limiting start in times on all vessels with a draft over 33' to the flood current only, while this cross current doesn't exist. This restriction causes delays for individual vessels as well as concentrating deep draft traffic during times of flood current, creating traffic congestion throughout the waterway.

Members of the St Johns Bar Pilot Association have participated in a USACE Ship Simulation Study of proposed solutions to this cross current problem at Mile Point. The currents that exist in this area are very difficult to model with the various currents that meet in this area. Even so, our members have reviewed the results of this study and have found it to be a very good starting point that field experience should validate. The St Johns Bar Pilots and the port community are depending on the USACE to select and implement one or more of the proposed solutions. We urge you to give serious consideration to the training wall modification, channel widening, and hopefully, a combination of both. We are confident in the ability of the USACE to select the alternative that will ensure safe transit of all vessels, especially deep draft vessels through the Mile Point area.

Upon completion of the USACE recommended solution for the Mile Point area and a short testing period for validation of Ship Simulation results, the St Johns Bar Pilot Association will be able to remove the Mile Point restrictions on deep draft vessels that are currently in effect. This commitment is the best we can offer given the complicated current effects in the Mile Point Area and our dedication to the safety of vessel transits. We will continue to coordinate with the U.S. army Corps of Engineers during the design and construction of this project as well as future improvement projects, hopefully to include a significant deepening and widening of the Federal Channel.

Thank you for your time and consideration to this very important matter of safety.

Sincerely,

John Atchison, President
St Johns Bar Pilot Association

St. Johns Bar Pilot Association

DP-6

PORT OF JACKSONVILLE
FLORIDA
4910 OCEAN STREET
MAYPORT, FLORIDA 32233
Telephone - 904-249-5631
FAX - 904/249-7523

July 24, 2003

Mr. Jerry Scarborough
U.S. Army Corps of Engineers
701 San Marco Blvd.
Prudential Building
Jacksonville, Fl. 32207-8175

Subject: Jacksonville Harbor, Mile Point Range

Dear Mr. Scarborough,

The St. Johns Bar Pilots requests that improvements be made to the Mile Point Range. The present situation of the Mile Point Range presents draft restrictions and navigation hazards that must be remedied in order for ship traffic to pass safely.

We strongly recommend that the Mile Point Range be widened to the south side of the river to alleviate this problem.

Sincerely,

Joseph J. Brown,
President

cc: Anthony F. Orsini,
Jacksonville Port Authority

JJB\jmm

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

May 15, 2008

Mr. Paul E. Stodola
Planning Division, Jacksonville District
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

RE: Department of the Army, Jacksonville District Corps of Engineers – Scoping Notice
Navigation Improvement Study of Jacksonville Harbor in the Vicinity of Mile Point
Jacksonville, Duval County, Florida.
SAI # FL200804024147C

Dear Mr. Stodola:

The Florida State Clearinghouse, pursuant to Presidential Executive Order 12372, Gubernatorial Executive Order 95-359, the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended, and the National Environmental Policy Act, 42 U.S.C. §§ 4321, 4331-4335, 4341-4347, as amended, has coordinated a review of the referenced scoping notice.

The Florida Department of Environmental Protection's (DEP) Northeast District office in Jacksonville advises that an Environmental Resource Permit (ERP) and a sediment and erosion control plan will be required. Because the proposed activities will have significant impacts on the hydrologic flows of the St. Johns River and issues regarding the location and effectiveness of the Little Jetty and Training Wall are unresolved, each of the listed alternatives should be carefully studied. The Corps of Engineers is advised to coordinate with the DEP Bureau of Beaches and Coastal Systems and Florida Fish and Wildlife Conservation Commission and provide additional information regarding: potential wetland resource and protected species impacts, structural plans, design alternatives, area hydrodynamics/hydraulics, navigational effects, etc. For further information on ERP permitting requirements, please contact Mr. Martin Seeling at (850) 414-7728.

Based on the information contained in the scoping notice and the enclosed state agency comments, the state has determined that, at this stage, the proposed federal action is consistent with the Florida Coastal Management Program (FCMP). The concerns identified by our reviewing agencies must, however, be addressed prior to project implementation. The state's continued concurrence with the project will be based, in part, on the adequate resolution of issues identified during this and subsequent reviews. The

state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting stage.

Thank you for the opportunity to review the proposal. Should you have any questions regarding this letter, please contact Ms. Suzanne E. Ray at (850) 245-2172.

Yours sincerely,

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/ser
Enclosure

cc: Beth Weatherford, DEP Northeast District

AIRPORTS
- Jacksonville International
- Craig
- Herlong

JAXPORT

JACKSONVILLE PORT AUTHORITY
Post Office Box 3005
2831 Talleyrand Avenue
Jacksonville, Florida 32206-0005
http://www.jaxport.com

SEAPORTS
- Blount Island Terminal
- Talleyrand Terminal
- Ed Austin Terminal

December 12, 2000

Mr. Jerry Scarborough, Project manager
U. S. Army Corps of Engineers
Jacksonville District
400 West Bay Street
P.O. Box 4970
Jacksonville, FL 32232-0019

Subject: Jacksonville Harbor Deepening Extension to Talleyrand

Dear Mr. Scarborough;

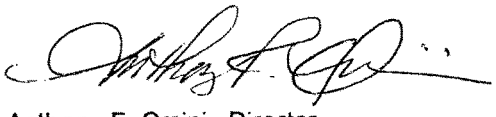
The Jacksonville Port Authority has an opportunity to bring a significant new business to our City. Columbus Lines USA and their consortium partners will select a southeastern port for consolidation of their South American service. Columbus lines, the leading partner in this consortium is currently a tenant at our newly renovated Talleyrand terminal. This expanded service will require the significant rail advantage of the Talleyrand terminal.

The Jacksonville Port Authority has been working on this project for some time and sees this new business as vital to the economic growth of the Authority and to the City of Jacksonville. As you can see by the enclosed letter from Mr. Rudolph Ramm, Vice President of Operations for Columbus Lines, the Talleyrand terminal is the favored choice for consolidation of this new service except for the water depth currently available. Their present fleet and the six (6) new 3,700 TEU ships will need the advantage of a –40 foot or greater harbor to realize the efficiencies of their operation.

We request that the Corps of Engineers immediately proceed to reopen the Feasibility Study on the Jacksonville Harbor and provide due consideration to this new development. The Jacksonville Port Authority considers this promise of new business, combined with the economic advantages previously identified for ST Services as justification for continuing the deepening process to the Talleyrand terminal. Failing our effort to attain suitable water depth at the Talleyrand terminal, Jacksonville may face the loss of current cargo utilizing this port.

We offer our total support to the Corps to expedite this process.

Sincerely,



Anthony F. Orsini, Director
Marine Engineering & Construction

Enclosure (1)

Copy: Rick Ferrin
Rudolph Ramm
T. Martin Fiorentino
Ed Austin
Mark Hulsey
Linda Scherrer

HAMBURG SÜD

COLUMBUS LINE USA, INC.

December 6, 2000

Mr. Fredrick R. Ferrin
Vice President, Marine
Jacksonville Port Authority
2831 Talleyrand Ave.
Jacksonville, FL 32206

Dear Mr. Ferrin:

Hamburg-Süd and its affiliate Columbus Line has enjoyed an excellent relationship with the Port of Jacksonville over the course of many years which association was strengthened earlier this year through the purchase of Crowley American Transport.

Our continued expansion into the South American market has resulted in partnerships with other lines such as our sister company Alianca, P&O Nedlloyd, CSAV, Maersk Sealand, Evergreen, APL and Lykes. We are also looking forward to the delivery of six (6) new 3,700 TEU container ships scheduled for delivery in the first quarter of 2001. In order to maximize the efficiency of our service, we are actively looking to consolidate our operations into fewer southeastern ports. The Port of Jacksonville offers a variety of advantages to our company that would favor our selection, but the water draft available at your Talleyrand Terminal may not be sufficient for our needs. A project channel depth of -40 feet or greater will offer a distinct advantage for our new ships.

Given an assurance of adequate depth at Talleyrand Marine Terminal, we will be able to give Jacksonville favorable consideration in our port selection process.

Sincerely,

Rudolph Ramm
Vice President - Operations

RR:mmo

AIRPORTS
- Jacksonville International
- Craig
- Cecil Field

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- Talleyrand Terminal
- Ed Austin Terminal

March 30, 2001

Mr. Jerry Scarborough, Project Manager
U.S. Army Corps of Engineers
400 West Bay Street
P.O. Box 4970
Jacksonville, FL 32232-0019

Subject: Hazards to Navigation

Dear Mr. Scarborough,

The primary mission of the Jacksonville Port Authority is to grow the port of Jacksonville and increase the economic and employment base of the city. To this end, we are at the cusp of bringing a major container carrier load center to Jacksonville. The impact of this load centering serves our mission and brings new business and jobs to Jacksonville. Unfortunately, two safety issues have come to the front that may prevent our city from realizing this economic boost. Two places in the St. Johns River present hazards to navigation and restrict the movement of deep draft ships to certain tidal conditions. These restrictions are unacceptable to the container carrier. Even without the issue of new business, these hazards must be addressed and cured.

The first issue is the dangerous currents that exist in the Training Wall Reach at the confluence of the St Johns River and the Intracoastal Waterway (ICW) to the north and south. Ships entering the port on an ebb tide must "set" to the extreme southern side of the Training Wall Reach in order to prepare for the concentrated current flowing north into the river from the ICW to the south. This current is very strong on an ebb flow and pushes the ship to the north side of the channel towards the docks at Atlantic Marine. As soon as the bow of the ship manages the passage beyond Atlantic Marine, a strong current exiting the ICW from the other side of the river then pushes it from the opposite direction,. The ship is already in a left-rudder condition to steer away from the facilities at Atlantic Marine. The new "push" from the north moves the bow of the ship back to the south side of the channel, requiring the pilot to call for extreme reversal of rudder settings and power to correct for the external influences on the ship. While this maneuver can be (and is) safely negotiated by the Pilots, a limitation is enacted by the Pilots and Captain of the Port to restrict this passage to vessels that draw

32 feet or less under an ebb tide condition. Ships deeper than 32 feet must wait for the tidal (and current) conditions to subside before entering the port.

We see two possible solutions to this problem. One involves the dispersion of concentrated flow exiting the ICW from the south. This reduction in flow may be accomplished by opening a flow channel at the eastern end of the "Little Jetties Park." This opening will permit a significant amount of the tidal flow to exit into the river through the eastern portion of Chicopit Bay, thus reducing the flow at the ICW exit. A bridge could be constructed over this new exit point from Chicopit Bay that would continue public access to the park. The addition of this bridge will actually provide an improvement to the park as the shoulders of the present roadway are constantly eroding and are difficult to maintain.

The second solution is to provide an area for increased "set" of the inbound ship in preparation for encountering the flow from the ICW to the south. This can be accomplished by widening the Training Wall Reach to the south by 100 to 150 feet. Pilots would then be able to direct the bow of the ship at a more acute angle to the ebb flow of the current from the ICW. This angle would result in less movement of the ship and additional channel width for the resultant movement that does occur. Less radical rudder movements would be required and a safer passage would be assured for deeper draft vessels.

While each of these solutions will help significantly to reduce hazardous conditions experienced at this juncture, both improvements are probably necessary in order to remove all vessel draft restrictions.

The other condition of concern is the Chaseville Turn. This is another portion of the river where navigation hazards require vessel draft restrictions. Negotiating this turn outbound on an ebb current again requires extreme rudder positions and power demands on the ship. The problems of the turn are compounded by the unfortunate placement of the dock at ST Services. A ship at this berth is essentially "in the channel" and presents unusual circumstances that need effective rudder response from the passing ship. Effective rudder response means speed, but due to the proximity of the moored ship to the channel, the passing vessel cannot exceed six knots or risk a wake suction that would break the docked ship from its moorings. This situation again places restrictions on deeper draft vessels as the deeper ships are naturally less maneuverable and by nature of the channel are limited in their options.

The only solution we see to this condition is a significant widening of the channel to the east, from a point in the Long Branch Range to marker G"69". This widening will permit ships passing a moored vessel to maintain a safe distance from the ST Services dock. A safer distance will allow better speed for rudder response and room to maneuver.

It is unfortunate that we have spent considerable time and effort to provide a deeper channel for the Port of Jacksonville, while issues such as these will continue to place significant restrictions on movement of deep draft vessels. The benefits of the deeper channel may not be realized if deep draft vessels cannot endure the restrictions and move their cargo to another port. The nature of the shipping industry is focusing intently on time and efficiency. The Jacksonville Port Authority has invested hundreds of millions of dollars to provide one of the most efficient cargo ports on the east coast; but if shippers cannot meet their schedules due to draft restrictions, then all the benefits of our port may be lost if they move to another city.

These issues are very serious and need immediate attention and resolution. Please contact me as soon as possible for a time and place to meet and start the process. The continued viability of the port of Jacksonville may be at stake.

Sincerely,

Anthony F. Orsini
Director, Marine Engineering & Construction

C: Col. Greg May
Richard Bonner
Rick Ferrin
David Kaufman
Randy Murray
Victoria Robas
Frank Jones

APR-30-2001 MON 02:03 PM JAXPORT FAX NO. 0303001 P. 01

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- Jacksonville International
- Craig
- Herlong
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Jacksonville, Florida 32206-0005
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SEAPORTS
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- Talleyrand Terminal
- Ed Austin Terminal

April 30, 2001

Mr. Jerry Scarborough, Project Manager
U.S. Army Corps of Engineers
Jacksonville District
400 West Bay Street
P.O. Box 4970
Jacksonville, FL 32232-0019

Subject: Crosscurrents @ St. Johns River & ICW

Dear Jerry,

At our meeting on the 23rd of April, 2001, we discussed the crosscurrents at the confluence of the St. Johns River and the Intracoastal Waterway. This intersection of waterways is a safety concern that has resulted in draft restrictions on deep draft vessels. The main cause of concern is the velocity at which the water exiting the south ICW impacts transiting vessels on an ebb tide flow.

We have furthered this discussion with the tug and barge pilots who agree that the currents at this location pose a hazard to safe navigation. Our concept of resolving this problem includes widening the exit of the south ICW as it enters into the St. Johns River or opening the eastern end of Little Jetties Park with a bridge, thus decreasing the velocity. We would ask that the Corps of Engineers include this concept into your present erosion study of Mile Point. We feel that the solution to the navigation problem may also benefit the erosion situation encountered on the north bank of the river.

We also request that the Corps postpone the reconstruction of phase 2 of the Little Jetties Training Wall until a solution to the navigation issue is reached.

If you have any questions or comments on the content of this letter, please contact me directly at (904) 630-3062.

Sincerely,

Anthony F. Orsini,
Director, Marine Engineering & Construction

Cc: Rick Ferrin
Victoria Robas

Post-it® Fax Note 7671	Date 4-30-01	# of pages ▶ 1
To Jerry Scarborough	From Tony Orsini	
Co./Dept. C.O.E.	Co. Jaxport	
Phone #	Phone #	
Fax # 232-1213	Fax # 630-3067	

Florida
Department of Environmental Protection

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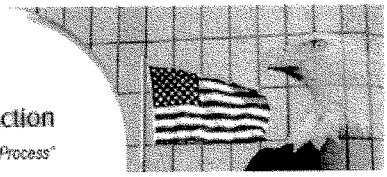

Categories

Project Information	
Project:	FL200804024147C
Comments Due:	05/02/2008
Letter Due:	05/16/2008
Description:	DEPARTMENT OF THE ARMY, JACKSONVILLE DISTRICT CORPS OF ENGINEERS - SCOPING NOTICE - NAVIGATION IMPROVEMENT STUDY OF JACKSONVILLE HARBOR IN THE VICINITY OF MILE POINT - JACKSONVILLE, DUVAL COUNTY, FLORIDA.
Keywords:	ACOE - JACKSONVILLE HARBOR NAVIGATION STUDY AT MILE POINT - DUVAL CO.
CFDA #:	12.107

Agency Comments:

NE FLORIDA RPC - NORTHEAST FLORIDA REGIONAL PLANNING COUNCIL

No Comments

DUVAL - DUVAL COUNTY

FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

No Comments Received

ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

The Florida Department of Environmental Protection's (DEP) Northeast District office in Jacksonville states that all of the proposed activities are navigational and will, thus, fall under the DEP's permitting authority. Staff advises that an Environmental Resource Permit (ERP) and a sediment and erosion control plan will be required. Because the proposed activities will have significant impacts on the hydrologic flows of the St. Johns River and issues regarding the location and effectiveness of the Little Jetty and Training Wall are unresolved, each of the listed alternatives should be carefully studied. The Corps of Engineers is advised to coordinate with the DEP Bureau of Beaches and Coastal Systems and Florida Fish and Wildlife Conservation Commission (FWC) and provide additional information regarding: potential wetland resource and protected species impacts, structural plans, design alternatives, area hydrodynamics/hydraulics, navigational effects, etc. For further information on ERP permitting requirements, please contact Mr. Martin Seeling at (850) 414-7728.

ST. JOHNS RIVER WMD - ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

No Comments Received

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

Visit the Clearinghouse Home Page to query other projects.

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10-E

Florida Fish and Wildlife Conservation Commission

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Dennis David
Regional Director
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(352) 732-1391FAX

Managing fish and wildlife resources for their long-term well-being and the benefit of people.

Northeast Region
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Hearing/speech impaired:
(800) 955-8771 (T)
(800) 955-8770 (V)
MyFWC.com

April 22, 2008

Department of the Army
Jacksonville District Corps of Engineers
Ms. Rebecca S. Griffith, Ph.D., PMP
Chief, Planning Division
P. O. Box 4970
Jacksonville, FL 32232-0019

Dear Ms. Griffith:

We received your recent documents concerning the change to the Jacksonville Harbor project in the vicinity of Mile Point, Duval County, Florida. We forwarded the information to Regional Director Roland Garcia in the Fish and Wildlife Commission's Lake City office which is located at 3377 E. US Highway 90, Lake City, FL 32055.

LTC Garcia's region covers the Duval County area, and you may wish to send all future correspondence directly to him for faster response.

Thank you, and if we can be of further assistance, please let us know.

Sincerely,

Elaine Richardson

Elaine Richardson
Regional Operations Manager

IN REPLY REFER TO:

United States Department of the Interior

National Park Service
Timucuan Ecological and Historic Preserve
Fort Caroline National Memorial
13165 Mt. Pleasant Road
Jacksonville, Florida 32225

L7619 (RM-rb)

April 10, 2008

Paul Stodola
Environmental Branch
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Stodola:

Thanks you for the opportunity for the Timucuan Ecological and Historic Preserve to comment on the proposed alterations to the Mile Point area of the St. Johns River. The informal meeting held on January 30, 2008 was very informative. As you know, representatives from the Preserve have been following this discussion for many years. After reviewing aerial photographs and the information provided by the Army Corps, we would like to make the following suggestions for additional investigations so that we may more fully understand the proposed undertaking:

1. Examination of aerial photographs from 1943 show the eastern end of Great Marsh Island covered in sand, assumed to be dredge spoil. Do any records or charts of the area exist prior to the placement of the dredge spoil? Knowledge of the size and shape of Great Marsh Island would be necessary to understand the circulation of water in Chicopit Bay prior to the alterations that have been made in association with the creation of the Intracoastal Waterway and the training walls on the St. Johns River.

2. It appears there are several proposals for the placement of new training walls adjacent to Great Marsh Island. During the Harbor Deepening Scoping Meeting on February 7, 2008, a proposed training wall running from Great Marsh Island to Buck Island was shown. However, in the March 31, 2008 letter requesting comments, the length of the proposed training wall is shown much shorter. No information was presented as to the heights or additional walls or dikes that will be needed to retain the proposed fill to be placed. More information as to exact length, height, type of material, and plans to prevent the movement of the fill is needed. Where will the fill needed to create the wetlands originate?

3. More detailed hydrological modeling is needed to determine the water flow into and out of Chicopit Bay. Historic aerial photographs and local lore suggests that in past decades Chicopit Bay was significantly deeper than today. The tidal marshes in and around Chicopit Bay have both ecological and recreational significance to Timucuan Preserve and the Theodore Roosevelt Area, which has extensive hiking trails and a bird observation tower.

TAKE PRIDE IN AMERICA

4. Additional hydrological modeling is needed to determine the potential for increased erosion to the eastern end of Great Marsh Island or the salt marshes around Greenfield Islands should the proposed training walls be constructed..

We look forward to the continued review of information concerning the Mile Point area of the St. Johns River. If there are any questions, please do not hesitate to contact the Preserve's Chief of resource Stewardship, Richard Bryant, at (904) 221-7567 x15 or via email at Richard_Bryant@nps.gov.

Sincerely,

Barbara Goodman

Barbara Goodman
Superintendent

cc: TNC, Stevens
North Florida Aquatic Preserves, Myers
The River Keeper, Armingeon

FLORIDA DEPARTMENT OF STATE
Kurt S. Browning
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Paul Sodola
Jacksonville USACE
P.O. Box 4970
Jacksonville, FL 32232-0019

May 9, 2008

Re: DHR No.: 2008-2599/Received by DHR: April 2, 2008
Project: Jacksonville Harbor- Mile Point
County: Duval

Dear Mr. Sodola:

Our office reviewed the referenced project for possible impact to historic properties listed, or eligible for listing in the *National Register of Historic Places*. The review was conducted in accordance with the Section 106 of the National Historic Preservation Act of 1966 as amended, and 36 CFR Part 800: Protection of Historic Properties; and the National Environmental Policy Act of 1969, as amended and the implementing state regulations. The State Historic Preservation Officer is to advise and assist state and federal agencies when identifying historic properties (archaeological, architectural, and historical) listed, or eligible for listing, in the *National Register of Historic Places* (NRHP), assessing the project's effects on such properties, and considering alternatives to avoid or reduce adverse effects.

Our review of our Florida Master Site File data and other available environmental data indicates that unrecorded archaeological properties may occur within the proposed project area. Additionally, according to our records the project area has never been subjected to a systematic remote sensing archaeological survey to identify and evaluate submerged cultural resources. Therefore, it is the opinion of this office that a systematic remote sensing survey should be conducted for the project. Archaeological investigations should be conducted in correlation with the proposed project in order to avoid duplication of investigation efforts.

The typical remote sensing archaeological survey utilizes modern remote sensing technology, that includes magnetometer data, side-scan sonar data, and depth recorded capabilities. The remote sensing data should be real-time correlated with Differential Global Positioning System

positioning data and recorded at 25-30 meter intervals (line spacing). Most importantly, an accredited nautical archaeologist should direct archaeological survey investigations with experience in the operation of remote sensing instrumentation and specific knowledge of maritime history in the St. Johns River study area. All anomalies determined to indicate a potential significant cultural resource should be ground-truthed by divers with specific training in underwater archaeological techniques; otherwise they must be identified for avoidance with a 500-foot buffer during sand removal activities.

The resultant survey report must conform to the specification set forth in Chapter 1A-46, *Florida Administrative Code,* and will need to be forwarded to this agency in order to complete the reviewing process for the proposed sand borrow project and its impacts. The results of the analysis will determine if significant cultural resources would be disturbed. In addition, if significant remains are located, the data described in the report and the consultant's conclusions will assist this office in determining measures that must be taken to avoid, minimize, or mitigate adverse impacts to archaeological sites and historical properties listed, or eligible for listing in the NRHP, or otherwise significant.

If there are any questions concerning our comments or recommendations, please contact Michael Hart, Historic Sites Specialist, by phone at (850) 245-6333, or by electronic mail at mrhart@dos.state.fl.us. We appreciate your continued interest in protecting Florida's historic properties.

Sincerely,

Frederick P. Gaske

Frederick P. Gaske, Director, and
State Historic Preservation Officer

Xc: Grady Caulk, Planning Division- Corps of Engineers

The Nature Conservancy
Protecting nature. Preserving life.™

The Nature Conservancy
9953 Heckscher Drive
Jacksonville, FL 32226-2503

Tel (904) 598-0004
Fax (904) 251-0008

nature.org

April 14, 2008

Paul Stodola
Environmental Branch
U.S. Army Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Stodola:

The Nature Conservancy appreciates the opportunity to comment on the proposed changes to the Mile Point area of the St. Johns River. As neighbors of the project, the notification meeting held on January 30, 2008 was very informative. After reviewing all of the information provided by the Army Corps of Engineers we do have some concerns and would like more information on the following question so that we may more fully understand the proposed undertaking.

1) The proposed project will remove 8.15 acres of saltmarsh from Helen Cooper Floyd Park, is the proposed marsh creation the only mitigation for the removal of salt marsh?

2) During the meeting in January, there were two proposed scenarios for marsh creation. The first scenario is the creation of 18.2 acres and the second scenario proposes to create 41.4 acres. Where will the fill to create marsh beyond the 8.15 acres of removed salt marsh come from? How would the flows and flushing be affected in Chicopit Bay between the two scenarios? Would oyster reefs in the area be impacted?

3) Marsh creation would include plantings. What is the plan for monitoring success of the sand placement into productive saltmarsh?

4) As of the date of our meeting the length and height of the training wall was unknown. As adjacent land owners we are concerned about the length of the training wall. Will the training wall be extended beyond the property line and what effects will it have on the erosion of our property?

5) We are interested in the sediment movement along the training wall. Will the position of the training wall change the flows in Chicopit Bay and cause sedimentation? What is the potential for increased erosion on the southern end of Great Marsh Island?

100% post-consumer materials

6) Does the marsh creation and associated fill serve a design purpose for the training wall?

7) This proposed project is part of the Jacksonville Harbor project. How do the different scenarios in the Mile Point project fit into the whole Harbor project?

Again, we thank you for the opportunity to be involved in this process. We look forward to the continued review of information concerning the Mile Point area of the St. Johns River.

Sincerely,

Hallie Stevens
NE Florida Program Director
The Nature Conservancy

Nelson Eason
1965 Ivylgail Drive East
Jacksonville, FL 32225
904-219-3469

April 10, 2008

Department of The Army
Jacksonville District Corps of Engineers
Planning Division, Environmental Branch
PO Box 4970
Jacksonville, FL 32232-0019

Dear Mr. Stodola;

In response to a letter I received from Representative Andrew Crenshaw pertaining to the "Chicopit Bay situation", I would like to address The Corps of Engineer's Planning Division with my concern as a representative, and resident of the impacted area known as Spanish Point, Spanish Marsh, Blackhawk Bluff, Bennet Estates, and Greeenfield Creek. I would like to emphasize that the economic, environmental, and recreational impact of the Planning Division's decision is vital to our community. It is without residential opinion, but simply fact that the Chicopit Bay area should be restored to its condition prior to the failing of the "Little Jetties". The neglect for maintenance in this area has created the desperate need for restoration and preservation.

Personally, I have resided on Mt. Pleasant Creek for twenty-one years. During my years I have witnessed the evolution of Great Marsh Island eroding into Chicopit Bay as a result of the incoming tides overtaking the neglected "Little Jetties". A few years ago that evolution had personally forced me to sell my 36' trawler due to obvious navigational degradation in the area. My situational reaction was met with assurance from Representative Tilly Fowler that action would be taken. Following Representative Fowler's term, Representative Andrew Crenshaw said he would continue the legacy and assist the community with the solution. This response was eight years ago, and our community is eagerly awaiting restoration to the Bay.

Our fundamental understanding regarding the relationship between cause and effect disassociates itself with budgetary limitations, time restraints, and office terms. The beneficial effects of The Planning Division's decision for restoring and preserving the bay will span generations of residents and wildlife in the area. The effect of neglecting the area by the Corps of Engineers, and the Jacksonville Port Authority has brought forth the necessity, and consequently a cause for action. The effects of dredging the channel have been instrumental in the degradation of the Jetties, erosion of Great Marsh Island, and the disappearance of Chicopit Bay. Further channel-dredging will increase devastation to our community if the "no action alternative" referenced in Representative Crenshaw's letter is chosen. That choice will stimulate our community as the affected class to proceed with a class action suit based on wrongful neglect, diminished property values, and compensatory damages. Our legal reaction to "no-action" would hope to stall further dredging implementation. Your correspondence is very much appreciated.

Thank you;

Nelson Eason

Cc: Rep. Andrew Crenshaw
Rick Ferrin – Jacksonville Port Authority
Rebecca Griffith – Jacksonville District Corps of Engineers
Mayor John Peyton
William Bishop – Jacksonville City Council District 2

ANDER CRENSHAW
4TH DISTRICT, FLORIDA
DEPUTY MINORITY WHIP

COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON
MILITARY CONSTRUCTION,
VETERANS' AFFAIRS, AND RELATED AGENCIES
SUBCOMMITTEE ON
STATE, FOREIGN OPERATIONS, AND
RELATED PROGRAMS

UNITED STATES
HOUSE OF REPRESENTATIVES

April 3, 2008

Mr. Nelson E. Eason
1965 Ivylgail Dr E
Jacksonville, FL 32225

Dear Mr. Eason:

Over the last year you have contacted me to express your concern over the Chicopit Bay situation and the much anticipated Mile Point Study. I appreciate you taking the time to share your thoughts on this matter and your understanding that the hydrological modeling takes time.

As you know we have kept your issue very much on the front burner with the Army Corps of Engineers, and I am pleased to enclose an informational letter about the project in the vicinity of Mile Point. You will find enclosed a letter from Dr. Rebecca Griffith, Chief of Planning for the ACOE. A second sheet outlines the project actions that may take place. There is also a no-action alternative that will be considered. A third enclosure is a map of the Mile Point Area that shows the possible changes.

Please review the material and if you wish to comment about environmental and cultural resources, study objectives and features described in the study or if you wish to suggest improvements, please send your comments or inquiries to Paul Stodola at the Post Office Box on the ACOE letterhead by April 30.

Again, I want to thank you for taking the time to contact me. Please feel free to contact me if I can be of any further assistance on this matter.

Sincerely,

ANDER CRENSHAW
Member of Congress

AC: js
Enclosures

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HECKSCHER DRIVE COMMUNITY CLUB

9364 HECKSCHER DRIVE JACKSONVILLE, FL 32226

TOWN MEETING

Position Paper on Proposed Dredging of the St. Johns River

PROBLEM:

Local residents' concern over damage to river banks and loss of property caused by dredging of river.

BACKGROUND:

Erosion along the St. Johns River (SJR) banks greatly increased since the late 1970's. Several sink holes claimed much of the north bank at Mile Point. Some properties in that area lost over 100' of land. In the opinion of affected land owners, dredging causes accelerated erosion. The absence of adequate research by any government agency, before dredging, can only be considered negligent.

Dr. Barry Beck, Director, Florida Sinkhole Research Institute, University of Central Florida in Orlando, stated that in his expert opinion the sink holes (termed subaqueous slumps) were probably the result of dredging. The Metropolitan Insurance Company denied a claim at the advice of Forensic Engineer Consultants, Yaxley and Gilmore, who agreed with Dr. Beck. These sinkholes and this accelerated erosion are caused occurrences rather than natural disasters.

The US Army Corps of Engineers (CoE) investigated. At the encouragement of US. Representative Charles Bennett, the CoE enlisted the assistance of the CoE Experiment Station in Vicksburg, Mississippi.

The Vicksburg report clouded the assertion by the CoE that the occurrence of sinkholes and accelerated erosion are definitely not caused by CoE dredging.

All the land owners at Mile Point believe that CoE dredging does cause accelerated erosion (as indicated by a previous petition).

The Vicksburg Report acknowledges that the opinions of the land owners have merit.

DISCUSSION:

Elimination of those sandbars at the NE corner of the Intracoastal Waterway (ICW) and the St. Johns River rerouted the ebbing tides against the North Bank. This resulted in increased water velocities of 6 knots (occasionally greater) in very active eddies and vortices. One can only speculate whether dredging is also responsible for the elimination of those sandbars that had forced the water flow into the center of the river.

> NOTE: Long time residents state that, in the 1960's, one could ride a bicycle on a beach extending from the ferry slip to the ICW. Today that bike ride would be in 30 feet of water 200 feet off shore.

One idea that warrants consideration is to build a training wall (retention wall) 400' into the river and parallel to the north bank in the Mile Point area. This wall should be about eight feet below the surface on low tide. When dredging, the CoE could place the dredge material between the wall and the bank. Several other areas along the SJR, that are routinely dredged, have experienced severely abnormal erosion. The problems in these areas also needs to be addressed.

PROPOSAL:

HDCC requests that the banks of the river be given the same priority of concern and action as the channel. HDCC requests that independent geologists and hydrologists be retained by Jacksonville Port Authority to study and recommend solutions to solve sinkhole and erosion problems along both sides of the river for the entire 14 miles where dredging is proposed.

SUMMARY:

HDCC is intensely interested in the St. Johns River Dredging Plan. We request timely notice and a standing invitation to any meeting held by any agency involved in planing and implementing this project. HDCC believes the protection of the banks deserves the same priority as channel dredging and that solutions to these problems should be funded by both the government and industry in and around Jacksonville who will profit from a deeper channel.

Approved January 11, 1998 by HDCC Board of Directors, Jessie Sammons President

APPENDIX F - SECTION 404(B) (1) EVALUATION

SECTION 404(b) (1) EVALUATION

JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY
DUVAL COUNTY, FLORIDA

I. Project Description

a. Location. The study area is located in the City of Jacksonville, Duval County, Florida. It includes the confluence of the St. Johns River and Intracoastal Waterway (IWW), the Mile Point training wall, the Mile Point shoreline, the western portion of Helen Cooper Floyd Park, and Great Marsh Island.

b. General Description. The work would involve the reconfiguration of the Mile Point training wall (see Appendix A: Engineering Design and Cost Estimates for detailed drawings and more info). The existing western portion of the Mile Point Training Wall as well as the western portion of Helen Cooper Floyd Park would be removed, and the area dredged to a depth of -12 feet plus -1 foot of overdepth, total of -13 feet. This would open up the confluence of the Intracoastal Waterway (IWW) with the St. Johns River, on the south side of the river. Two new sections of training wall would also be constructed. The east leg would tie into the remaining portion of the existing wall, and turn to the south along the eastern side of the IWW. The west leg of the new wall would be built along the western side of the IWW, and would wrap around the northern shoreline of Great Marsh Island. As described in the main report, the objectives of this work are to provide navigation benefits as well as reduce erosion along Mile Point.

The proposed work would impact 8.15 acres of salt marsh at Helen Cooper Floyd Park. Using the Uniform Mitigation Assessment Method, the Corps has determined that 18.84 acres of mitigation would be required to offset this loss. Mitigation would be performed by restoring eroded salt marsh at nearby Great Marsh Island. As a beneficial use of dredged material, the Corps proposes to restore the entire eroded area at the island, which is an estimated 53 acres. . The restoration would close off the current connection between Chicopit Bay and the St. Johns River. This connection was created in the 1990's when the salt marsh in this location eroded away. Consequently, the Corps proposes to construct a flow improvement channel in Chicopit Bay which would help restore the bay's historic eastern connection with the IWW, improve flushing within the bay, and provide deeper water Essential Fish Habitat. The channel would begin at the IWW, go through the bay, and end at the mouth of Mt. Pleasant Creek. All dredged material generated by the project would be used to restore salt marsh at Great Marsh Island (see Appendix D: Mitigation Plan and Incremental Analysis for more detail).

c. Authority and Purpose. Resolution, Docket 2550, of House Committee on Transportation and Infrastructure adopted March 24, 1998 for Mile Point, Florida states: "Resolved by the Committee on Transportation and Infrastructure of the United States House of Representatives, That, the Secretary of the Army is requested to review the report of the Chief of Engineers on Jacksonville Harbor, Florida, published as House Document 214, Eighty-ninth Congress, 1st Session, and other pertinent reports to determine whether any modifications of the recommendations contained therein are advisable at the present time in the interest of navigation and related purposes, with particular reference to erosion of the Mile Point shoreline."

d. General Description of Dredged or Fill Material.

(1) General Characteristics of Material. Dredged material from the project area consists primarily of sand, with some silt, clay, and shell. Quarry rock or concrete structures would be used to reconfigure the Mile Point Training Wall.

(2) Quantity of Material. An estimated 890,000 cubic yards (cy) of dredged material would be removed from the project footprint. Approximately 26,900 cy of armor stone (boulders) would be used to create the east leg of the new training wall, and 11,900 cy of smaller stone would be used for bedding. Concrete structures or an estimated 36,900 cy of armor stone would be used to construct the west leg of the wall, and 18,400 cy of smaller stone would be used for bedding. Approximately 14,600 cy of armor stone from the existing western portion of the Mile Point training wall would be relocated and used to build the new wall.

(3) Source of Material. Dredged material would come from the western portion of Helen Cooper Floyd Park, IWW, and the flow improvement channel. Rock would be quarried.

e. Description of the Proposed Discharge Site(s).

(1) Location. Salt marsh restoration area at Great Marsh Island.

(2) Size. Approximately 53 acres.

(3) Type of Site: Proposed salt marsh restoration site.

(4) Type(s) of Habitat. Historically salt marsh, but has eroded away and become open water.

(5) Timing and Duration of Discharge. Timing of project is undetermined and duration should be less than 16 months. However, additional material may need to be added to the restoration site after initial settling in order

to achieve the desired elevation for salt marsh which would lengthen the duration (see Appendx D: Mitigation Plan and Incremental Analysis for more detail).

f. Description of Disposal Method. A cutter-head dredge shall be used and the dredged material pumped through a pipeline to the restoration site. The restoration site shall be confined with the use of water dams or geo-tubes.

II. Factual Determinations

a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The IWW has a sloped bottom with an authorized depth of -12 feet plus 2 feet of allowable overdepth, for a total of -14 feet authorized depth. Actual depths can vary widely through the year due to shoaling. The western portion of Helen Cooper Floyd Park has an estimated average maximum upland elevation of + 6 feet and slopes downward to salt marsh and then open water. The depths of the restoration site vary widely from -0.7 feet to -37.5 feet.

(2) Sediment Type. Unconsolidated with sand, silt, clay and shell.

(3) Dredged/Fill Material Movement. Dredged material will be contained within the restoration area with geo-tubes and water dams (see Appendix A: Engineering Design and Cost Estimates).

(4) Physical Effects on Benthos. Benthic organisms would be impacted by dredging activity and rock placement operations. Re-colonization should begin in less than one year. However, full recovery may require additional time.

(5) Actions to minimize impacts. Dredge location and placement operations would be monitored to insure that construction activities are performed in authorized project areas only, turbidity sampling shall be conducted, and containment structures used at the restoration site.

b. Water Circulation. Fluctuation and Salinity Determinations.

(1) Water Column Effects.

(a) Salinity: No significant effect.
(b) Water Chemistry: No significant effect.
(c) Clarity: Turbidity would temporarily decrease clarity.
(d) Color: Turbidity would temporarily change color.
(e) Odor: No significant effect.
(f) Taste: No significant effect.
(g) Dissolved Gas Levels: No significant effect.

(h) Nutrients: No significant effect.

(2) Current Patterns and Circulation.

(a) Current Patterns and Flow: Dredging and rock placement operations would affect current patterns or flow, which should provide navigation benefits and reduce erosion along Mile Point. The proposed restoration of Great Marsh Island would close the northern connection between Chicopit Bay and the St. Johns River. This connection was created by the erosion and loss of salt marsh. Shoaling within the bay has also decreased the amount of flow or flushing effect coming from the east, or from the bay's historic connection with the Intracoastal Waterway. Therefore, the Corps proposes to construct a flow improvement channel within Chicopit Bay, which should improve the flushing of the bay as well as provide deeper water Essential Fish Habitat.
(b) Velocity: Velocities would change within the study area, but significant impacts are not anticipated.
(c) Stratification: No significant effect.
(d) Hydrologic Regime: Currents in the project area are primarily tidal, and the tidal regime would not be affected.

(3) Normal Water Level Fluctuations. Tides in the project area are semi-diurnal with varying levels throughout the year. The project would not affect normal water level fluctuations.

(4) Salinity Gradients. The project would not affect salinity gradients.

(5) Actions to minimize impacts. Turbidity would be monitored per the requirements of the state permit. If at any time the turbidity standard were exceeded, those activities causing the violation would cease.

c. Suspended Particulate/Turbidity Determinations.

(1) Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Disposal Site. There will be a temporary increase in suspended particulates and turbidity levels in the vicinity of the disposal site.

(2) Effects (degree and duration) on Chemical and Physical Properties of the Water Column.

(a) Light Penetration: Light penetration would decrease during dredging and placement operations in open water sites.
(b) Dissolved Oxygen: Dissolved oxygen levels would not be significantly altered by this project.
(c) Toxic Metals and Organics: Sediments in the study area are not known to contain toxic metals and organics.
(d) Pathogens: This project would not cause any release of pathogens.
(e) Aesthetics: Turbidity would temporarily impact aesthetic quality of the project channel and open water placement locations.

(3) Effects on Biota.

(a) Primary Production, Photosynthesis: The project would not have a significant impact on primary production or photosynthesis.
(b) Suspension/Filter Feeders: Turbidity would affect suspension/ filter feeders, but the effects would be temporary.
(c) Sight Feeders: Sight feeders would be affected by turbidity, but the effects would be temporary.

(4) Actions to minimize impacts. As stated earlier, turbidity would be monitored per the requirements of the state permit. If at any time the turbidity standard were exceeded, those activities causing the violation would cease.

d. Contaminant Determinations. Levels of contaminants are not expected to have a significant impact on plankton, benthos, nekton, or the aquatic food web.

e. Aquatic Ecosystem and Organism Determinations. .

(1) Effects on Plankton: Significant effects on plankton are not anticipated.
(2) Effects on Benthos: Benthos would be impacted by the project, but benthic organisms would be expected to begin recovery within one year. However, full recovery may take a longer period of time.
(3) Effects on Nekton: Significant effects on nekton are not anticipated.
(4) Effects on Aquatic Food Web: As stated earlier, benthos would be impacted, but additional significant effects on the food web are not anticipated.
(5) Effects on Special Aquatic Sites.

(a) Sanctuaries and Refuges: Dredging of the project area is not expected to have a significant impact on the nearby Nassau River-St. Johns River Marshes Aquatic Preserve or the Timucuan Ecological and Historic Preserve. This work would be performed in compliance with the Water Quality Certification issued by the state of Florida.
(b) Wetlands: The proposed work would affect 8.15 acres of salt marsh, which shall be mitigated.
(c) Mud Flats: Significant impacts to mud flats are not anticipated.
(d) Vegetated Shallows: Other than impacts to salt marsh, impacts to other vegetated shallows are not anticipated.
(e) Coral Reefs: There are no coral reefs in the project area.
(f) Riffle and Pool Complexes: There are no riffle and pool complexes in the project area.

(6) Threatened and Endangered Species. The project would not have a significant impact on threatened and endangered species.

(7) Other Wildlife. Loss of wetlands and uplands at Helen Cooper Floyd Park would affect other wildlife. The project as planned includes adequate mitigation for the habitat impact from the navigation project. Impacts to wildlife using upland areas should be minimal.

(8) Actions to Minimize Impacts. Measures shall be taken to avoid or minimize impacts to threatened and endangered species as well as other wildlife (see Section 7.2 of the main report).

f. Proposed Disposal Site Determinations

(1) Mixing Zone Determination. This determination will be in accordance with the Water Quality Certification issued for this project.

(2) Determination of Compliance with Applicable Water Quality Standards.
The work would be conducted in accordance with the Water Quality Certification issued for this project.

(3) Potential Effects on Human Use Characteristic.
(a) Municipal and Private Water Supply: No effects are anticipated.
(b) Recreational and Commercial Fisheries: Impacts to fisheries would not be significant.
(c) Water Related Recreation: Construction activities would temporarily disrupt water related recreation.

(d) Aesthetics: Construction would temporarily impact aesthetics.
(e) Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves: Dredging of the project area is not expected to have a significant impact on the nearby Nassau River-St. Johns River Marshes Aquatic Preserve or the Timucuan Ecological and Historic Preserve. This work would be performed in compliance with the Water Quality Certification issued by the state of Florida.

g. Determination of Cumulative Effects on the Aquatic Ecosystem. Dredging and placement operations would have impacts on the aquatic ecosystem. However, the proposed salt marsh restoration would provide substantial wetland functions and values that should offset these losses. Most impacts during construction should be relatively short-term. The project in conjunction with other on-going activities should not have a significant cumulative effect on the aquatic ecosystem (see Section 7.2.25 for more information).

h. Determination of Secondary Effects on the Aquatic Ecosystem. The proposed work may provide a stimulus for economic growth, which could encourage further deepening of the port. These actions could further impact the aquatic ecosystem.

III. Findings of Compliance or Non-Compliance With the Restrictions on Discharge

a. Adaptation of the Section 404(b)(l) Guidelines to this Evaluation: No significant adaptations of the guidelines were made relative to this evaluation.

b. Evaluation of Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impact on the Aquatic Ecosystem: The proposed discharge site is a salt marsh restoration area, and the restoration shall provide a substantial increase in wetland acreage.

c. Compliance with Applicable State Water Quality Standards: Dredging and material placement activities would be performed in compliance with the Water Quality Certification issued by the state of Florida.

d. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 Of the Clean Water Act: The discharge operation would not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

e. Compliance with Endangered Species Act of 1973: The proposed project would not jeopardize the continued existence of any species listed as threatened or endangered or result in the destruction or adverse modification of any critical habitat as specified by the Endangered Species Act of 1973.

f. Compliance with Specified Protection Measures for Marine Sanctuaries Designated by the Marine Protection. Research, and Sanctuaries Act of 1972: This act does not apply to this project.

g. Evaluation of Extent of Degradation of the Waters of the United States

(1) Significant Adverse Effects on Human Health and Welfare

(a) Municipal and Private Water Supplies: No effect.
(b) Recreation and Commercial Fisheries: No substantial adverse impacts are anticipated.
(c) Plankton: No substantial adverse impacts are anticipated.
(d) Fish: No substantial adverse impacts are anticipated.
(e) Shellfish: No substantial adverse impacts are anticipated.
(f) Wildlife: No substantial adverse impacts are anticipated.
(g) Special Aquatic Sites: No substantial adverse impacts are anticipated.

(2) Significant Adverse Effects on Life Stages of Aquatic Life and Other Wildlife Dependent on Aquatic Ecosystems: Most impacts should be relatively short-term, and not significant.

(3) Significant Adverse Effects on Aquatic Ecosystem Diversity, Productivity and Stability: No significant adverse effects on aquatic ecosystem diversity, productivity and stability are anticipated.

(4) Significant Adverse Effects on Recreational, Aesthetic, and Economic Values: Recreation and aesthetic values would be temporarily disrupted due to construction activity, but significant effects are not anticipated.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem: Measures shall be taken to minimize impacts (please see Section 7 of the main report for more information).

i. On the basis of the guidelines the proposed disposal site(s) for the discharge of dredged or fill material is specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem.

FINDING OF COMPLIANCE
FOR
JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY
DUVAL COUNTY, FLORIDA

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

2. The proposed reconfiguration of the Mile Point Training Wall would affect current patterns or flow, which should provide navigation benefits and reduce erosion along Mile Point.

3. The work would impact 8.15 acres of salt marsh. This loss would be offset by restoring an estimated 53 acres of salt marsh at nearby Great Marsh Island. All dredged material generated by the project would be placed within the proposed restoration site. The restoration would close the existing northern connection between Chicopit Bay and the St. Johns River. This connection was created by the erosion and loss of salt marsh. Shoaling within the bay has also decreased the amount of flow or flushing effect coming from the east, or from the bay's historic connection with the Intracoastal Waterway. Therefore, the Corps proposes to construct a flow improvement channel within Chicopit Bay, which should improve the flushing of the bay as well as provide deeper water Essential Fish Habitat.

4. The placement of dredged material at the salt marsh restoration site would not violate any applicable state water quality standards with the possible exception of turbidity. Therefore, turbidity standards would be monitored per the Water Quality Certification issued by the state of Florida. If a turbidity violation is noted, then those activities causing the violation shall be terminated. The disposal operation will not violate the Toxic Effluent Standards of Section 307 of the Clean Water Act.

5. The proposed work will not harm any endangered species or their critical habitat, or violate protective measures for the nearby Nassau River-St. Johns River Marshes Aquatic Preserve or the Timucuan Ecological and Historic Preserve.

6. The proposed dredge work and disposal of dredged material within the salt marsh restoration site will not result in significant adverse effects on human health and welfare, including municipal and private water supplies, recreation and commercial fishing, plankton, fish, shellfish, wildlife, and special aquatic sites. Significant adverse effects on life stages of aquatic life and other wildlife, aquatic ecosystem diversity, productivity and stability, and recreational, aesthetic and economic values will not occur.

7. Appropriate steps shall be taken to minimize potential adverse impacts of the discharge on aquatic systems.

8. On the basis of the guidelines the proposed disposal sites for the discharge of dredged material is specified as complying with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects to the aquatic ecosystem.

APPENDIX G-COASTAL ZONE MANAGEMENT CONSISTENCY

FLORIDA COASTAL ZONE MANAGEMENT PROGRAM
FEDERAL CONSISTENCY EVALUATION PROCEDURES

JACKSONVILLE HARBOR (MILE POINT) NAVIGATION STUDY

1. Chapter 161, Beach and Shore Preservation. The intent of the coastal construction permit program established by this chapter is to regulate construction projects located seaward of the line of mean high water and which might have an effect on natural shoreline processes.

Response: The proposed plans and information will be voluntarily submitted to the state in compliance with this chapter.

2. Chapters 163(part II), 186, and 187, County, Municipal, State and Regional Planning. These chapters establish the Local Comprehensive Plans, the Strategic Regional Policy Plans, and the State Comprehensive Plan (SCP). The SCP sets goals that articulate a strategic vision of the state's future. It's purpose is to define in a broad sense, goals, and policies that provide decision-makers directions for the future and provide long-range guidance for an orderly social, economic and physical growth.

Response: The proposed project shall be coordinated with various federal, state and local agencies during the planning process. The project meets the primary goal of the State Comprehensive Plan through preservation and protection of the shorefront development and infrastructure.

3. Chapter 252, Disaster Preparation, Response and Mitigation. This chapter creates a state emergency management agency, with the authority to provide for the common defense; to protect the public peace, health and safety; and to preserve the lives and property of the people of Florida.

Response: The proposed project would provide safer navigation conditions as well as reduce erosion along Mile Point. Therefore, this project would be consistent with the efforts of Division of Emergency Management.

4. Chapter 253, State Lands. This chapter governs the management of submerged state lands and resources within state lands. This includes archeological and historical resources; water resources; fish and wildlife resources; beaches and dunes; submerged grass beds and other benthic communities; swamps, marshes and other wetlands; mineral resources; unique natural features; submerged lands; spoil islands; and artificial reefs.

Response: The proposed project would comply with state regulations pertaining to the above resources. Impacts to marshes would be mitigated and fully coordinated with the state. The work would comply with the intent of this chapter.

5. Chapters 253, 259, 260, and 375, Land Acquisition. This chapter authorizes the state to acquire land to protect environmentally sensitive areas.

Response: Since the affected property already is in public ownership or is under an easement for public placement use, this chapter does not apply.

6. Chapter 258, State Parks and Aquatic Preserves. This chapter authorizes the state to manage state parks and preserves. Consistency with this statute would include consideration of projects that would directly or indirectly adversely impact park property, natural resources, park programs, management or operations.

Response: The proposed project shall be coordinated with the state of Florida regarding project activities in the vicinity of the Nassau River-St. Johns River Marshes Aquatic Preserve. The project shall be consistent with this chapter.

7. Chapter 267, Historic Preservation. This chapter establishes the procedures for implementing the Florida Historic Resources Act responsibilities.

Response: This project shall be coordinated with the State Historic Preservation Officer (SHPO). Surveys shall be conducted in order to determine the presence of historic properties. The project will be consistent with this chapter.

8. Chapter 288, Economic Development and Tourism. This chapter directs the state to provide guidance and promotion of beneficial development through encouraging economic diversification and promoting tourism.

Response: The proposed work would encourage commercial and recreational use which in turn would provide economic benefits to the area. This would be compatible with tourism for this area and therefore, is consistent with the goals of this chapter.

9. Chapters 334 and 339, Transportation. This chapter authorizes the planning and development of a safe balanced and efficient transportation system.

Response: No public transportation systems would be impacted by this project.

10. Chapter 370, Saltwater Living Resources. This chapter directs the state to preserve, manage and protect the marine, crustacean, shell and anadromous fishery resources in state waters; to protect and enhance the marine and estuarine environment; to regulate fishermen and vessels of the state engaged in the taking of such resources within or without state waters; to issue licenses for the taking and processing products of fisheries; to secure and maintain statistical records of the catch of each such species; and, to conduct scientific, economic, and other studies and research.

Response: The proposed work would impact salt marsh, and these impacts shall be offset by performing adequate mitigation. Benthic organisms may also be adversely affected by the work, but should recover. The project footprint is relatively small and lies adjacent to similar habitat which should accelerate benthic recolonization. Therefore, substantial impacts to the aquatic ecosystem are not anticipated. Based on the overall impacts of the project, the project is consistent with the goals of this chapter.

11. Chapter 372, Living Land and Freshwater Resources. This chapter establishes the Fish and Wildlife Conservation Commission and directs it to manage freshwater aquatic life and wild animal life and their habitat to perpetuate a diversity of species with densities and distributions which provide sustained ecological, recreational, scientific, educational, aesthetic, and economic benefits.

Response: The project would not have a substantial adverse impact on living land and freshwater resources. Loss of upland habitat would be minimal.

12. Chapter 373, Water Resources. This chapter provides the authority to regulate the withdrawal, diversion, storage, and consumption of water.

Response: This project does not involve water resources as described by this chapter.

13. Chapter 376, Pollutant Spill Prevention and Control. This chapter regulates the transfer, storage, and transportation of pollutants and the cleanup of pollutant discharges.

Response: The contract specifications will prohibit the contractor from dumping oil, fuel, or hazardous wastes in the work area and will require that the contractor adopt safe and sanitary measures for the disposal of solid wastes. A spill prevention plan will be required.

14. Chapter 377, Oil and Gas Exploration and Production. This chapter authorizes the regulation of all phases of exploration, drilling, and production of oil, gas, and other petroleum products.

Response: This project does not involve the exploration, drilling or production of gas, oil or petroleum product and therefore, this chapter does not apply.

15. Chapter 380, Environmental Land and Water Management. This chapter establishes criteria and procedures to assure that local land development decisions consider the regional impact nature of proposed large-scale development. This chapter also deals with the Area of Critical State Concern program and the Coastal Infrastructure Policy.

Response: The proposed work shall be coordinated with the local regional planning commission. Therefore, the project shall be consistent with the goals of this chapter.

16. Chapters 381 (selected subsections on on-site sewage treatment and disposal systems) and 388 (Mosquito/Arthropod Control). Chapter 388 provides for a comprehensive approach for abatement or suppression of mosquitoes and other pest arthropods within the state.

Response: The project shall not further the propagation of mosquitoes or other pest arthropods.

17. Chapter 403, Environmental Control. This chapter authorizes the regulation of pollution of the air and waters of the state by the Florida Department of Environmental Regulation (now a part of the Florida Department of Environmental Protection).

Response: An Environmental Assessment addressing project impacts has been prepared and will be reviewed by the appropriate resource agencies including the Florida Department of Environmental Protection. Environmental protection measures will be implemented to ensure that no lasting adverse effects on water quality, air quality, or other environmental resources will occur. Water Quality Certification will be sought from the state prior to construction. The project complies with the intent of this chapter.

18. Chapter 582, Soil and Water Conservation. This chapter establishes policy for the conservation of the state soil and water through the Department of Agriculture. Land use policies will be evaluated in terms of their tendency to cause or contribute to soil erosion or to conserve, develop, and utilize soil and water resources both onsite or in adjoining properties affected by the project. Particular attention will be given to projects on or near agricultural lands.

Response: The proposed project is not located near or on agricultural lands; therefore, this chapter does not apply.

Appendix H: Public Comment on the Integrated Feasibility Study and Environmental Assessment

Stodola, Paul E SAJ

From: Sharon Suggs [SSuggs@allstatesteel.com]
Sent: Friday, August 19, 2011 4:56 PM
To: Stodola, Paul E SAJ
Cc: Karin Tucker
Subject: Jaxport/Mile Point

Dear Mr. Stodola,

As a member of the community here in Jacksonville, Florida and the surrounding areas, I am urging the U.S. Army of Engineers to proceed with the solution to the navigational hazard at Mile Point. I am submitting the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth for our area and the entire region and it must be addressed quickly. The public and private port terminals serve as a major economic catalyst and the benefits generated by this will positively impact a region of 1.5 million people, as well as the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints, as well as serve as a catalyst to create 3,500 new jobs in our region.

I will be looking forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and the restrictions are eliminated.

Sincere Regards,

Sharon J. Suggs

CEO/Owner

Allstate Steel Co., Inc.

Office (904) 781-6040

Fax (904) 781-8863

Cell (904) 607-5238

cid:image002.png@01CAD5AB.2833D590 cid:image002.jpg@01CC148D.B36A63A0

"Quality and Service Since 1963"

cid: 1 0C8662740C8657CC005BB6938525754D Do you really need to print this email? Think green!

Stodola, Paul E SAJ

From: Karin Tucker [ktucker@abcfirstcoast.com]
Sent: Friday, August 19, 2011 3:43 PM
To: Stodola, Paul E SAJ
Subject: Mile Point solution

Dear Mr. Stodola:

As a leader in the Jacksonville business community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. This common sense solution will bring much-needed jobs and economic growth to our community.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and these frustrating restrictions are eliminated.

Sincerely,

Karin Tucker

President/CEO

Associated Builders and Contractors

Florida First Coast Chapter

(904) 731-1506

Stodola, Paul E SAJ

From: Susan Verbeck [VerbeckS@c1cufl.org]
Sent: Sunday, August 21, 2011 11:14 AM
To: Stodola, Paul E SAJ
Subject: FW: Solve the navigational hazard at Mile Point!

From: Susan Verbeck
Sent: Sunday, August 21, 2011 11:11 AM
To: 'paul.e.stodola@usace.arym.mil'
Subject: Solve the navigational hazard at Mile Point!

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Susan Verbeck

A concerned citizen of Jacksonville

Stodola, Paul E SAJ

From: Russo, Michael [mrusso@aerotek.com]
Sent: Sunday, August 21, 2011 11:38 AM
To: Stodola, Paul E SAJ
Subject: Aerotek Follow Up

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Michael Russo
Commercial Recruiter
Aerotek Inc.
7077 Bonneval Road, Ste. 500
Jacksonville, Fl 32216

Tel: 904-527-5571
Fax: 904-527-5590
mrusso@aerotek.com <mailto:mrusso@aerotek.com>

Named to Inavero's 2011 Best of Staffing Client List

Awarded 2010 FCMA Associate Company of the Year

Stodola, Paul E SAJ

From: Rick Perkins [Rick.Perkins@PulteGroup.com]
Sent: Sunday, August 21, 2011 12:47 PM
To: Stodola, Paul E SAJ
Subject: Urgent Matter needed for Northeast Florida

Dear Mr. Stodola,

As a member of the residential and business community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Rick Perkins

PulteGroup

Rick Perkins

Division General Sales Manager
office (904) 217-0005

cell (352) 266-1944

August 21st 2011

Dear Mr. Stodola,

As a member of the community, and because of the business we are doing in Jacksonville, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. My company relies on oversea shipment monthly and the public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Francois KLOC
Vice President
Buffet Crampon USA, Inc
14125 Beach Boulevard
Jacksonville, FL, 32250
904-422-7662

Stodola, Paul E SAJ

From: Barry Dunkley [barrydunkley@acousti.com]
Sent: Sunday, August 21, 2011 7:50 PM
To: Stodola, Paul E SAJ
Cc: 'Ray Verner'
Subject: Mile Point Navigational Hazard

Dear Mr. Stodola,

By way of introduction, we are long time members of the Jacksonville and state of Florida business communities and ask you to please note that we support and agree with the JAXPORT request to proceed with the solution to the navigational hazard at Mile Point. Valuing the many obvious benefits of solving this problem, we urge the Corps to move forward with the solution and submit the recommendation to Congress via the Chief of Engineers report in February of 2012.

Noting the positive economic impact which repairing Mile Point will have on this region and the entire state of Florida, we look forward to the Corps timely recommendation to Congress and speedy commencement of repairs.

Sincerely,

Barry Dunkley - Executive Vice President

James R. Verner - Chairman,CEO

Acousti Engineering Co of Florida

6959 Stuart Ave

Jacksonville, Fl 32254

barry

This email may contain information that is legally privileged, confidential, or exempt from disclosure. If you are not the intended recipient, please note that any dissemination, distribution, or copying is strictly prohibited. If you have received this message in error

Stodola, Paul E SAJ

From: SANDY NORSE [sandin@clear.net]
Sent: Sunday, August 21, 2011 8:16 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the Jacksonville community, and living here for 36 years I have seen the growth and changes in Jacksonville. We built a beautiful port so that we could grow jobs in our community and the issue of Mile Point is holding us back. This country needs jobs! We need to help our people to help themselves. That was the purpose of spending all those dollars to build that port. I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. Let's put our people to work!

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Sandi Norse

Arlington Assistant Branch Manager

Community First Credit Union

Invested in You

p 904.371.8065*f 904.371.8067

pward@c1cufl.org <mailto:pward@c1cufl.org>

ALLSOUTH SPRINKLER COMPANY

11762 MARCO BEACH DRIVE, SUITE 4 • JACKSONVILLE, FL 32224
904-928-9099 FAX 904-517-5092
www.allsouthsprinkler.com

August 22, 2011

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

The obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource cost from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

John J. McCullough, CEO

American Fire Sprinkler Association

CELEBRATING 35 Years of Excellence

e-mail:
Paul.E.Stodola@usace.army.mil

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Sandra Kidd

Stodola, Paul E SAJ

From: Ed W. White [ewhite@auld-white.com]
Sent: Monday, August 22, 2011 9:12 AM
To: Stodola, Paul E SAJ
Subject: Mile Point Jacksonville, Fl

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. As well as other areas of our country that will benefit from an improved transportation system.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Ed White

Ed White
Auld & White Constructors, LLC
4168 Southpoint Parkway, Suite 101
Jacksonville, FL 32216
Phone: (904) 296-2555
Fax: (904) 296-6990

Please visit our website http://www.auld-white.com <http://www.auld-white.com/>

P Please consider the environment before printing this e-mail.

Stodola, Paul E SAJ

From: Renninger, James B. [JBRENNIN@fscj.edu]
Sent: Monday, August 22, 2011 9:16 AM
To: Stodola, Paul E SAJ
Subject: Jacksonville Port Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result opportunity costs from the shipping industry which make alternate ports of entry much more lucrative. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

JB

JB Renninger

Description: FCCT_horiz_clean.tif

Phone: (904) 361-6254 | Fax: (904) 634-0316

Stodola, Paul E SAJ

From: Jean Judy [JudyJ@c1cufl.org]
Sent: Monday, August 22, 2011 9:52 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Importance: High

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jeannie K. Judy

Jeannie K. Judy

Teller Supervisor- Arlington

Community First Credit Union

Invested In You

Ph 904.354.8537 Ext. 7454 * Fax 904.371.8187

judyj@c1cufl.org <mailto:judyj@c1cufl.org> * www.CommunityFirstFL.org

Stodola, Paul E SAJ

From: Kirk Wendland [kirk.wendland@sjcchamber.com]
Sent: Monday, August 22, 2011 11:11 AM
To: Stodola, Paul E SAJ
Cc: chris.quinn@myjaxchamber.com; Carol Saviak; kirk.wendland@sjcchamber.com
Subject: Mile Point - Jacksonville

Dear Mr. Stodola,

On behalf of the St. Johns County Chamber of Commerce and business owners in the greater Jacksonville region, I am writing to encourage the U.S. Army Corps of Engineers to advance a solution to the navigational hazard at Mile Point and submit recommendations to Congress in the Chief of Engineer's report in February 2012.

This navigational problem has a regional impact on jobs and economic growth in the greater Jacksonville region. The public and private port terminals are vital to our region's economy. A remedy will positively impact the region and the State of Florida.

Current restrictions which limit the time available for shipping vessels entering the St. Johns Rivers vessels to a 4 ½ hour window twice daily is untenable.

The current situation not only limits the accessibility and functionality of the Port, but results in higher fuel and labor costs for ships waiting to enter the St. Johns River. The international reputation of the Port of Jacksonville as a convenient and easily accessible destination for vessels must be safeguarded.

Thank you for your thoughtful consideration of the economic importance of alleviating the current constraints at Mile Point just as quickly as possible.

Sincerely,

Kirk Wendland

President

St. Johns County Chamber of Commerce

kirk.wendland@sjcchamber.com

ELKINS
CONSTRUCTORS, INC.

August 22, 2011 Via Email: Paul.E.Stodola@usace.army.mil

Mr. Paul Stodola
U.S. Army Corps of Engineers – Jacksonville District
701 San Marco Boulevard
Jacksonville, Florida 32207

Re: Navigational Hazard at Mile Point

Dear Mr. Stodola,

Jacksonville is a great city and our river is important to its citizens in numerous ways. The river is a great source of recreational and "quality of life" pride. However, as a member of the business community and someone who leaves relatively close to the St Johns River, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012

This obstacle is a major hurdle to JaxPort's efforts to expand our port's capacity. We need the creation of jobs and economic growth and request that this issue be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated. Thank you for taking the time to listen to a concerned business leader and vested Jacksonville citizen.

Sincerely,
Elkins Constructors, Inc.

David W. Hamilton
Vice President

Stodola, Paul E SAJ

From: Cynthia Holt [HoltC@c1cufl.org]
Sent: Monday, August 22, 2011 5:05 PM
To: Stodola, Paul E SAJ
Cc: John Hirabayashi
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region. We need a deeper harbor to prepare for Post-Panamax Ships in order to grow our port and create additional jobs in the future. It also important for us to compete with the other ports in the Southeast to increase our share of the revenues from the shipping industry.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Cynthia M. Holt

Branch Manager Northside Location

Community First Credit Union

Invested In You

Stodola, Paul E SAJ

From: Mark Manwell [ManwellM@etminc.com]
Sent: Monday, August 22, 2011 5:31 PM
To: Stodola, Paul E SAJ
Subject: Mile Point Improvements

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to help identify potential solutions to the navigational hazards at Mile Point (in Jacksonville, Florida) and submit these recommendations to Congress in the upcoming "Chief of Engineer's Report" in February 2012.

As you know, a public workshop was recently held to discuss potential solutions that would resolve the navigational hazards at Mile Point. Existing conditions currently restrict ships from entering the St. Johns River to a 4 ½ hour window twice a day. This problem is preventing the creation of jobs and economic growth and must be addressed quickly. In northeast Florida, public and private port terminals serve as a major economic catalyst. As such, solving the Mile Point problem will positively impact a region of 1.5 million people, as well as the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter/exit the St. Johns River. A remedy would immediately alleviate these constraints and could create 3,500+ new high-wage jobs and jump-start economic growth in our region. The Mile Point problem needs to be corrected so that all navigational restrictions/hazards are eliminated.

Thank you for considering this request.

Sincerely,

Mark

Mark S. Manwell, PE, PTOE

Traffic Engineer

logo-etm1

Direct:

Stodola, Paul E SAJ

From: Ross, Steven R SAJ
Sent: Monday, August 22, 2011 5:18 PM
To: Stodola, Paul E SAJ; Borer, Samantha J SAJ
Cc: Ross, Steven R SAJ
Subject: Fw: Mile Point Feasibility

Fyi

From: Kenneth R. Craig [mailto:KCraig@Taylorengineering.com]
Sent: Monday, August 22, 2011 02:35 PM
To: Ross, Steven R SAJ
Subject: Mile Point Feasibility

Dear Mr. Ross,

On behalf of the Northeast Florida Chapter of the Florida Engineering Society (FES), I am pleased to write in support of the Mile Point Feasibility project. FES represents registered professional engineers in the north Florida area. As presented, the Mile Point fix will provide important opportunities for economic growth throughout the region. The board of directors of our chapter voted unanimously in support of your project at our recent board meeting.

Best of luck on implementation of the Mile Point project!

Ken Craig

President

Northeast Florida Chapter

Florida Engineering Society

Kenneth R. Craig, P.E.

Vice President of Coastal Engineering

Taylor Engineering, Inc.

10151 Deerwood Park Blvd., Bldg 300, Suite 300

Stodola, Paul E SAJ

From: Jill Schicker [jschicker@trinitytile.com]
Sent: Monday, August 22, 2011 5:02 PM
To: Stodola, Paul E SAJ
Subject: Jaxport

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jill Schicker

small logo

Jill Schicker

Architectural Representative

115 SW 49th Ave. Ste 105

Ocala, FL 34474

P~352.482.1619

C~904.477.7949

Stodola, Paul E SAJ

From: Jack Manilla [jack.manilla@portofinopools.com]
Sent: Monday, August 22, 2011 3:51 PM
To: Stodola, Paul E SAJ
Cc: Spinning, Jason J SAJ
Subject: St. Johns River Mile Point Remedy

Dear Mr. Stodola,

I strongly support a rapid resolution to the impediment to maritime commerce that exists as a result of the St. Johns River Mile Point problem.

JCCI recently completed a 7-county regional study on recession recovery and beyond that included site visits and inputs from citizens, economic development experts and the political leadership of Baker, Clay, Duval, Flagler, Nassau, Putnam and St. Johns counties. I was a member of this study. Our study process is unique in that it is community-based, requires full consensus on its findings, conclusions and recommendations, and includes a two-year advocacy phase to see study recommendations implemented. I now serve on the advocacy steering committee.

There was full consensus of the Recession Recovery & Beyond Study Committee on the importance of addressing Mile Point and the additional actions required for the Port of Jacksonville to accommodate Post-Panamax shipping. A copy of the full study report is available. Please contact me and I will have a copy forwarded to you. Should you have any questions, please don't hesitate to contact me.

Kind Regards,

Jack Manilla

President/Owner

Portofino Pools and Technical Institute

6005 Powers Avenue

Suite 101

Jacksonville, Florida 32217

Jack.Manilla@PortofinoPools.com

www.PortofinoPools.com <http://www.portofinopools.com/>

P 904-731-3144 o F 904-731-9291

Dear Mr. Stodola,

As a long-time resident and member of the business community in Jacksonville, I would encourage the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in your Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly, especially given the current economic doldrums we are experiencing and the job opportunities that would come with a remedy of the navigation issue.

The public and private port terminals serve as a major economic catalyst and the benefits from the remedy will positively impact our region – and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Thanks for your consideration.

Sincerely,

Ron Whittington
Senior Account Executive
Mulberry Marketing Communications
315 E. Bay St., Suite 302
Jacksonville, FL 32250

Stodola, Paul E SAJ

From: Adams, Bettie [badams@unf.edu]
Sent: Monday, August 22, 2011 2:46 PM
To: Stodola, Paul E SAJ
Subject: Mile Point Fix

Dear Mr. Stodola:

After reading about the obstacle to large ships at the Mile Point location, I urge the U. S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point. I recommend that the report presented by the Chief of Engineer's to Congress in February 2012 include the recommendation to proceed with the fix.

I am a concerned citizen of Clay County who works at the University of North Florida(UNF) in Jacksonville. This obstacle is preventing the economic growth of our community and impacts jobs in the First Coast area, including future jobs of our UNF students. I believe this remedy will have a positive impact on our area and the entire state of Florida.

The current restrictions which cause the larger ships to wait for high tides results in increased fuel consumption and increases in other costs. The remedy proposed will alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region. This economic impact will affect everyone in the First Coast area.

This decision is an important one for economic development in Northeast Florida, and I support the decision to fix this navigation hazard.

Sincerely,

Bettie M. Adams

Part-time faculty at UNF and

Director of the Financial Services Program

Stodola, Paul E SAJ

From: Jeff Smith [hitthatjivejeff@hotmail.com]
Sent: Monday, August 22, 2011 2:44 PM
To: Stodola, Paul E SAJ
Subject: Mile Point solutions

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jeff Smith

Stodola, Paul E SAJ

From: cathy bercheni [cece927@att.net]
Sent: Monday, August 22, 2011 2:09 PM
To: Stodola, Paul E SAJ
Subject: Navagational Hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Cathy Bercheni

Stodola, Paul E SAJ

From: Amber Mckimm [amber_mckimm@yahoo.com]
Sent: Monday, August 22, 2011 2:03 PM
To: Stodola, Paul E SAJ; Congressman Nelson; ashley_cook@rubio.senate.gov
Subject: Restricting Ships from Entering St. Johns River

Mr. Stodola,

As a member of the community, and as an individual that is all too aware of our current unemployment rate of 10.4 percent, I strongly urge the the U.S. Army of Engineers to submit recommendations to Congress to proceed with the solution to navigational hazzard at Mile Point. Last week alone, 47 people were downsized by Sea Star Line any many more jobs will be eliminated in Jacksonville if we do not proceed with this solution. This obstacle is not only preventing job growth but it is steadily putting people out of jobs in the transportation/logistics/in-port/export business. As well as many others in manufacturing ect.

This must be addressed quickly for both public and private sector growth. The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. John's River.

A solution will immediately serve as a catalyst to create many jobs, fueling our economy and making our city even more attractive to come live in.

I am a Branch Manager of a very large staffing firm and see the negative affects of restricting ships to a 4 and a half hour window, twice daily everyday, all day.

I very much look forward to the future of NE Florida and the development of our economy once Mile Point is repaired and restrictions are eliminated.

Sincerely,
Amber Mckimm
A NE Florida citizen for economic growth.

Stodola, Paul E SAJ

From: Carolyn Clark [c.clark@comcast.net]
Sent: Monday, August 22, 2011 12:02 PM
To: Stodola, Paul E SAJ
Cc: donshea@jaxciviccouncil.com
Subject: Jacksonville Civic Council - Mile Point

Dear Mr. Stodola,

I am sending this email on behalf of Don Shea and the Jacksonville Civic Council.

Our organization is committed to a vision of a city that is safe, personally satisfying, and an economically rewarding place to live and work. As you know, the Jacksonville Port is an integral part of this city's welfare and economic vitality. Mile Point will make Jacksonville open for business 24/7....it must be fixed!

We are urging the U.S. Army Corps of Engineers to proceed with the correction of Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. If you would like to discuss the impact of Mile Point further, please feel free to contact me or Executive Director Don Shea at donshea@jaxciviccouncil.com.

Sincerely,

Carolyn Clark

Jacksonville Civic Council

904.955.3656 cell

904.285.8176 fax

Stodola, Paul E SAJ

From: Brad Davis [BDavis@prosserhallock.com]
Sent: Monday, August 22, 2011 11:29 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the Jacksonville business community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Description: prosserhallock_PCsig

J. Bradford Davis, PE, LEED AP
Principal

13901 Sutton Park Drive South, Suite 200 Jacksonville, Florida 32224

bdavis@prosserhallock.com <mailto:bdavis@prosserhallock.com>

p 1 904.739.3655 ext. 134

Stodola, Paul E SAJ

From: Kampfe, Matthew [Matthew.Kampfe@bmcjax.com]
Sent: Monday, August 22, 2011 6:01 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As an active and engaged member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. Research indicates that the benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida and create 3,500 new jobs in our region. .

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst for our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Best regards,
Matthew

NOTICE: This message is confidential, intended for the named recipient(s) and may contain information that is (i) proprietary to the sender, and/or,(ii) privileged, confidential and/or otherwise exempt from disclosure under applicable Florida and federal law, including, but not limited to, privacy standards imposed pursuant to the federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA"). Receipt by anyone other than the named recipient(s) is not a waiver of any applicable privilege. Thank you in advance for your compliance with this notice.

OFFICE OF THE CITY COUNCIL

WILLIAM BISHOP, AIA
VICE PRESIDENT
COUNCIL MEMBER, DISTRICT 2
OFFICE (904) 630-1392
FAX (904) 630-2906
E-MAIL: wbishop@coj.net

117 West Duval Street
SUITE 425
JACKSONVILLE, FLORIDA
32202

August 18, 2011

Mr. Paul E. Stodola
Jacksonville District
Army Corp of Engineers
Via E-Mail

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

William Bishop, AIA
Vice President
Council Member, District 2

WB/sgw

How tomorrow moves [CSX]

500 Water Street, J820
Jacksonville, FL 32202
Phone (904) 359-3480
Fax (904) 357-7902

August 22, 2011

Paul Stodola
Environmental Lead and NEPA Coordinator
US Army Corps of Engineers
PO Box 4970
Jacksonville, FL 32232

Via E-Mail: paul.e.stodola@usace.army.mil

Dear Mr. Stodola,

CSX Transportation (CSXT) is a Class I railroad serving the eastern United States with connecting service to Western US, Canada and Mexico. CSXT serves both domestic and international customers. We market our service as a logistics solution which offers environmental benefits and helps to reduce highway congestion.

CSXT supports the United States Army Corps of Engineers' recommended plan for Mile Point and encourages the approval of this endeavor. As you know, the Port of Jacksonville (JAXPORT) is one of the largest commercial cargo ports on the Atlantic Coast. The port is Northeast Florida's primary economic engine, supporting 65,000 jobs and generating over $19 billion in annual economic impact.

The future growth of the port is threatened by a navigational restriction in the St. Johns River known as Mile Point. Because of this restriction, large ships have a severely limited timeframe that they are able to traverse this portion of the St. Johns River, increasing transportation costs. Fixing this issue will help to bring more cargo to JAXPORT and create more than 3,500 jobs throughout the region now and in the years ahead. Jacksonville is uniquely equipped to maximize the benefits of a harbor capable of handling today's growing fleet of deep draft container ships that will soon be able to come through the widened Panama Canal. In conjunction with JAXPORT's efforts to deepen the harbor, fixing the Mile Point issue will help grow JAXPORT and create thousands of high-quality, good paying jobs throughout Northeast Florida.

Nathlyn Hemmingway
7403 Petrell Drive Jacksonville Fl 2222

Dear Mr. Stodola,

As a member of the community, I'd like to express my support for the solution to the navigational hazard at mile point and I urge the U.S. Army Corps of Engineers to proceed and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

I understand that economic growth and the creation of jobs is not possible as long as this obstacle remains and the problem must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact our immediate region and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region which is a great need.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Nathlyn Hemmingway

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Robert W. Selton, III
Principal, Colliers International Northeast Florida

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Hobart Joost Jr.

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Elmer Bury

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Ernie Saltmarsh

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

John Saoud

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

John Lining

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jason Ryals

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Guy Preston

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Bart Hinson

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Kimberly Norman

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Judy Franklin

August 18, 2011

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Lisa Dennis

Lisa Dennis

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Julie Owens

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Laura Seeback

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Megan Brown

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Erika Bjork

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Paul Scull

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Ryan Landers

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Forrest Ozburn August 8, 2011

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Matt Entriken

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Douglas Blair

Colliers International
Northeast Florida

1 Independent Drive
Suite 2401
Jacksonville, FL 32202
Office +1 904 358 1206
Fax +1 904 353 4949

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Gary Montour

US Army Corps of Engineers.
Jacksonville District

Comments/ Questions

See Privacy Act Statement on reverse side

EVENT: Jacksonville Harbor Mile Point Navigation Study
DATE: August 15, 2011

☐ Check box if you would like to make a statement

MAIL TO: U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970, Jacksonville, FL 32232-0019
ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

Please fix mile point to improve the port access.

Thanks, RSR

Robert W Hooper Sr
NAME AND TITLE (PLEASE PRINT)

12058 San Jose Blvd Suite 100
MAILING ADDRESS

Jacksonville FL 32223
CITY STATE ZIP CODE

904.886.1110
PHONE NUMBER

rob@shipatlantic.com
EMAIL ADDRESS

US Army Corps of Engineers. Jacksonville District

Comments/ Questions

See Privacy Act Statement on reverse side

EVENT: Jacksonville Harbor Mile Point Navigation Study

DATE: August 15, 2011

☐ Check box if you would like to make a statement

MAIL TO: U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970, Jacksonville, FL 32232-0019
ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

I stand in support of this project. Jacksonville is truly a port city and in order to maintain its face in the commerce side of the port equation we need to do this project. I represent workers from the maritime industry and we understand the issue of the Mile point. A support the recommended plan. Please do this project

Vincent S. Cameron
NAME AND TITLE (PLEASE PRINT)

2589 College St
MAILING ADDRESS

Jax Fl 32209
CITY STATE ZIP CODE

904 290-0043
PHONE NUMBER

VCAm65@aol.com
EMAIL ADDRESS

US Army Corps of Engineers.
Jacksonville District

Comments/ Questions

See Privacy Act Statement on reverse side

EVENT: Jacksonville Harbor Mile Point Navigation Study
DATE: August 15, 2011

☒ Check box if you would like to make a statement

MAIL TO: U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970, Jacksonville, FL 32232-0019
ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

Fix Mile Point to
Bring Jobs to Jacksonville
It is imperative
to the growth
of our region
Supportourport.com

Jennifer Yoder England-Thims & Miller
NAME AND TITLE (PLEASE PRINT) & Support our Port
Bring the NOISE
14775 Old St. Augustine Rd Community Camp
MAILING ADDRESS
Jacksonville FL 32258
CITY STATE ZIP CODE
904-642-8990
PHONE NUMBER
Yoderj@etminc.com
EMAIL ADDRESS & info@Supportourport.com

US Army Corps of Engineers
Jacksonville District

Comments/ Questions

See Privacy Act Statement on reverse side

EVENT: Jacksonville Harbor Mile Point Navigation Study
DATE: August 15, 2011

☒ Check box if you would like to make a statement

MAIL TO: U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970, Jacksonville, FL 32232-0019
ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

Fix Mile Point to
Bring Jobs to Jacksonville
It is imperative
to the growth
of Our region
Supportourport.com

Jennifer Yoder — England-Thims & Miller / Support our Port / Bring the Noise / Community Camp
NAME AND TITLE (PLEASE PRINT)

14775 Old St. Augustine Rd
MAILING ADDRESS

Jacksonville FL 32258
CITY STATE ZIP CODE

904-642-8990
PHONE NUMBER

Yoderj@etminc.com
EMAIL ADDRESS
2 info@Supportourport.com

Stodola, Paul E SAJ

From: Johnson, Cerella [Cerella.Johnson@bcbsfl.com]
Sent: Friday, August 19, 2011 10:10 AM
To: Stodola, Paul E SAJ
Subject: Navigational Hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Cerella Johnson

OPL Compliance Unit

DCC4-4

800-477-3736, EXT 52804

Fax 904-357-6055

Confidentiality Notice: The information contained in this email document may be confidential and intended solely for the use of the individual or entity to whom it is addressed. This document may contain material that is privileged, attorney work product, or protected from

Dear Mr. Stodola,

As a Jacksonville native and member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

As a commercial lender in Jacksonville I have seen the impact the port has had on this community and the economic development in its surrounding area. This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Andrew Corwin

2257 Fairway Villas Ln N

Atlantic Beach, FL 32233

904-881-6249

Stodola, Paul E SAJ

From: Dan Stover [dstover@phoenixrealty.net]
Sent: Friday, August 19, 2011 9:31 AM
To: Stodola, Paul E SAJ

Dear Mr. Stodola,

As a long standing and proud citizen of Northeast Florida, I'm writing to urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. Throughout the course of conducting business with companies who are affected by the inability of ships to enter our ports around the clock, I'm confident that this is having a negative financial impact on our region as many of these companies chose to go elsewhere.

This obstacle is also preventing the creation of new jobs and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions also result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 much needed new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Dan Stover, Vice President

Grubb & Ellis/Phoenix Realty Group
10739 Deerwood Park Blvd., Suite 310
Jacksonville, FL 32256
P 904-399-5222 F 904-399-0330 C 904-923-1907 dstover@phoenixrealty.net
www.phoenixrealty.net <http://www.phoenixrealty.net/>

Stodola, Paul E SAJ

From: Susan Alexander [salexander@clayutility.org]
Sent: Friday, August 19, 2011 9:28 AM
To: Stodola, Paul E SAJ
Cc: jschechter@claychamber.com
Subject: Jax Port Accessibility

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. As you know our economy is struggling and this will be a very positive step toward recovery.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

CLAY COUNTY UTILITY AUTHORITY

Ray O. Avery

Executive Director

cc: Jill Schechter, Clay County Chamber of Commerce

Susan L. Alexander

Office Administrator

Clay County Utility Authority

Office (904) 213-2482

Fax (904) 213-2438

Stodola, Paul E SAJ

From: Zimmerman, Samuel R. [szimmerman@GFNET.com]
Sent: Friday, August 19, 2011 8:48 AM
To: Stodola, Paul E SAJ
Subject: Urgent Action Needed - Issue Impacts Jobs

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Sam Zimmerman

10751 Deerwood Park Blvd, Suite 140

Jacksonville, FL 32256

(904)998-9809

Excellence Delivered As Promised

Gannett Fleming is ISO 9001:2008 Certified.

Stodola, Paul E SAJ

From: Terry Brown [tbrown@icslogistics.com]
Sent: Friday, August 19, 2011 7:46 AM
To: Stodola, Paul E SAJ
Subject: JaxPort Mile Point Issue

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Terry Brown

President

ICS Logistics LLC

2625 West 5th Street

Jacksonville, FL 32254

Office (904) 786-8038 ext 4103

Fax (904) 486-6007

Cell (904) 838-0958

Stodola, Paul E SAJ

From: Kester, Steven L. [SKester@cemexusa.com]
Sent: Friday, August 19, 2011 7:09 AM
To: Stodola, Paul E SAJ

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

cid:image001.gif@01CC0686.CB4AC100

Steven Kester

Production Manager - Jacksonville Block Plant - United States of America

Office: (904) 886-2970 Fax: (904) 886-2971 Mobile: (904) 424-2692

Address: 14770 Old St. Augustine Rd., Jacksonville, FL 32258

e-Mail: skester@cemexusa.com

www.cemexusa.com

MAYO CLINIC

4500 San Pablo Road
Jacksonville, Florida 32224
904-953-2000

August 19, 2011

Paul E. Stodola
U.S. Army Corps of Engineers
Jacksonville District Office
Attn.: CESAJ-PD-EC
701 San Marco Boulevard
Jacksonville, Florida 32207

Dear Mr. Stodola,

As a resident of Northeast Florida, I am writing you to urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

The port of Jacksonville is an economic engine for high-wage job creation and growth in our region. The public and private port terminals serve as a major economic stimulus. Infrastructure improvements are critical to attracting new economic development opportunities.

The navigational hazard at Mile Point is currently restricting ships from entering the St. Johns River to a 4 ½ hour window twice daily. These time restrictions result in high fuel and resource costs preventing the creation of much needed jobs for our region. A remedy will alleviate these constraints so that ships can operate more efficiently and cost effectively resulting in significant job growth for Northeast Florida. The benefits from the remedy will positively impact not only this region but the entire state of Florida as well.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

William C. Rupp, M.D.
Chief Executive Officer
Mayo Clinic in Florida

WCR:bsk

AKEL□LOGAN□SHAFER
ARCHITECTS / PLANNERS

August 19, 2011

Paul E. Stodola, Biologist, Environmental Lead
Jacksonville District Corps of Engineers
701 San Marco Boulevard
Jacksonville, FL 32207

Submitted via Paul.E.Stodola@usace.army.mil

Re: Jacksonville Harbor (Mile Point) Navigational Study
Jacksonville, Florida

Dear Mr. Stodola,

The US Army Corp of Engineers-Jacksonville District, has served our region admirably and a pivotal role in our success. Continuing that success, I'd like to share with you an opportunity I've had serving on the Mayor's Transportation Policy Committee for Jacksonville where we focused on numerous key topics significant to the economic success of Jacksonville. The topics ranged from Roadways, Port Activity, Neighborhood Streets, Transit, *but it was clear that none were so critical for their singular ability to stimulate our economy and job creation as Mile Point!*

Therefore, I urge the U.S. Army Corps of Engineers to proceed with the alternative plans to reduce the effects of the crosscurrents on vessels transiting Jacksonville Harbor, allowing the navigation restrictions to be lifted and to reduce the effects of the crosscurrents on the Mile Point shoreline.

- The benefits from this remedy will positively impact a region of 1.5 million people and the entire state of Florida.
- This remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.
- Expedition of the submittal recommendation to Congress in the Chief of Engineer's report in February 2012 can equate to JOBS.

Thank you for your time; the economic development opportunities in Northeast Florida that will arise after Mile Point's solution are huge.

Respectfully Yours,

Melody S. Bishop, AIA

704 Rosselle Street Jacksonville, FL 32204

Stodola, Paul E SAJ

From: Ambar, Raphael [rambar@aerotek.com]
Sent: Friday, August 19, 2011 1:19 PM
To: Stodola, Paul E SAJ
Subject: JAXPORT

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Raphael Ambar

Raphael Ambar
Recruiter
Aerotek Scientific, LLC
7077 Bonneval Road.
Jacksonville, FL
Suite 500 of the Liberty Center

Work: 904-527-5586
Fax: 904-527-5591
E-mail: rambar@aerotek.com
www.aerotek.com <http://www.aerotek.com/>

Stodola, Paul E SAJ

From: Dennis Kelly [dennis.kelly@trapac.com]
Sent: Friday, August 19, 2011 1:16 PM
To: Stodola, Paul E SAJ
Subject: FW: Mile Point

Importance: High

Dear Mr. Stodola,

MOL/TraPac has made an enormous investment in the Jacksonville Maritime Industry. Unfortunately, the timing of this investment has not been kind to MOL/TraPac for three unexpected factors, a historically high cost of raw materials during TraPac's construction timeframe, the global recession, and Mile Point Tidal restrictions. As you may already know financial experts are predicting a slow and somewhat painful recovery to the recession.

Regarding the Mile Point Tidal Restrictions, MOL/TraPac has for the past six years been lead to believe that a "remedy" for Mile Point would be approved and construction would already be under way. With that said, I strongly urge the U.S. Army Corps of Engineers to proceed with a solution to the navigational hazard at Mile Point and submit their recommendation to Congress in the Chief of Engineer's Report in February of 2012.

TraPac's commitment to the Jacksonville Business community has been and continues to be the creation of new high paying jobs along with putting the Port of Jacksonville on the global map for International trade for the first time in its history. The MOL/TraPac Marine terminal serves as a major economic catalyst, and the benefits for the Mile Point remedy will positively impact a region of 1.5 million people and the entire state of Florida.

Presently, MOL and their shipping partners have employed two Panama Canal Services and a Suez Canal Service. These three services represent eight to twelve vessels with an average service investment of nearly $1 Billion dollars in assets. As you can imagine, any amount of vessel lost time due to the tidal restrictions will continue to have a considerable negative effect on the vessels owners and operators, which are required to operator their assets at an optimum business mode. The elimination of the Mile Point Tidal restrictions will allow Jacksonville 24/7 deep water vessel transits, just like our competing ports to the north.

Sincerely,

Dennis Kelly

Reg. VP & General Manager,

Stodola, Paul E SAJ

From: Lumb, Robin [RLumb@coj.net]
Sent: Friday, August 19, 2011 12:47 PM
To: Stodola, Paul E SAJ
Cc: Barrow, Donna
Subject: Mile Point Issue Urgent to Jacksonville's Future

Dear Mr. Stodola,

As a long time Jacksonville resident, a small business owner and an elected official representing 865,000 residents of Duval County I would like to underscore the urgency of resolving the Mile Point issue.

My father was an officer in the U.S. Merchant Marine for many years. He often told stories of the high cost that his ships incurred whenever they were delayed in transit or otherwise kept from docking and unloading as quickly as possible. It is difficult to imagine that Jacksonville will ever be able to position itself as a major port if merchant vessels are only able to navigate the channel for a few hours each day.

As a member of Jacksonville's City Council I urge the U.S. Army Corps of Engineers to do all within its power to resolve the Mile Point hazard and submit such a recommendation to Congress at the earliest possible date.

Failure to address this issue within the shortest possible time frame will result in substantial economic harm to the economy of Northeast Florida and will further delay plans to modernize and upgrade Jacksonville's port facilities. Time is of the essence.

Sincerely,

Rom Lumb
Jacksonville City Council
At-Large Group 5

Stodola, Paul E SAJ

From: Martin, W. Anthony [VIS] [WMARTIN1@its.jnj.com]
Sent: Friday, August 19, 2011 12:41 PM
To: Stodola, Paul E SAJ
Cc: chris.quinn@myjaxchamber.com
Subject: ECONOMIC DEVELOPMENT-Navigational hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

Speaking from my personal point of view and not as a representative of the firm I work for, I believe this improvement will have significant impact on the businesses in the area which are engaged in international commerce. The company I work for brings raw materials and equipment into the area from foreign sources and produces medical device products for distribution around the globe from one of its facilities located in the Jacksonville area. From my point of view, this improvement would offer significant potential economic opportunity for not only manufacturing companies in the area but also connect the entire country to the global community through the strong logistics capabilities in the area.

According to information provided by the Jacksonville Regional Chamber of Commerce, this obstacle is preventing the creation of jobs and economic growth and should be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people, the entire state of Florida and the country in these tough global economic times. The current time restrictions result in high fuel and resource costs from ships having to wait to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

W. Anthony Martin

Vistakon

Worldwide Vice President

Stodola, Paul E SAJ

From: Ben Patterson [ben_antmod@bellsouth.net]
Sent: Friday, August 19, 2011 12:34 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Ben Patterson

Antique & Modern Cabinets, Inc.

Office 904-393-9055

Fax 904-393-7930

Visit our website at:

www.antigueandmoderncabinets.com

Stodola, Paul E SAJ

From: Bruce Ferguson [BFerguson@worksourcefl.com]
Sent: Friday, August 19, 2011 12:23 PM
To: Stodola, Paul E SAJ
Subject: Navigational Issue at Mile Point

Dear Mr. Stodola,

As President of WorkSource, the regional workforce development board, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

The positive resolution of this issue will directly impact the creation of thousands of much needed jobs in Northeast Florida. With an unemployment rate of 10.5% in this region we need all impediments to job creation eliminated. This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. Our regional port terminals are a major economic catalyst for the area. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Bruce Ferguson, Jr.

President

1845 Town Center Boulevard, Suite 250

Fleming Island FL 32003

(904) 213-3800

WorkSource

Member: EMPLOY FLORIDA

Stodola, Paul E SAJ

From: Jan E. Conwell [jconwell@auld-white.com]
Sent: Friday, August 19, 2011 12:10 PM
To: Stodola, Paul E SAJ
Subject: recommendation to Congress

Importance: High

Dear Mr. Stodola,

As a member of the Northeast Florida Community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth which is devastating our community. This must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Janet E. Conwell

Jan Conwell
Auld & White Constructors, LLC
4168 Southpoint Parkway, Suite 101
Jacksonville, FL 32216
Phone: (904) 296-2555
Fax: (904) 296-7718

Stodola, Paul E SAJ

From: kmannel@imagepartners.net
Sent: Friday, August 19, 2011 11:38 AM
To: Stodola, Paul E SAJ
Subject: Jacksonville Port

Dear Mr. Stodola,

As a member of the business community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

--

Kelly

Kelly A. Mannel, SPHR
ImagePartners
312 East Coast Drive
Atlantic Beach, FL 32233
904.707.7650
www.imagepartners.net
http://www.linkedin.com/in/kellymannel

Stodola, Paul E SAJ

From: Edie Ousley [eousley@flchamber.com]
Sent: Friday, August 19, 2011 11:08 AM
To: Stodola, Paul E SAJ
Cc: paul.anderson@jaxport.com
Subject: FL Chamber of Commerce: Resolving Mile Point Obstacle Will Boost Jobs and Capital Investment

FCClogo.jpg

August 19, 2011

Paul Stodola

U.S Army Corps of Engineers

Jacksonville District

701 San Marco Boulevard

Jacksonville, FL 32207-0019

RE: Resolving Mile Point Obstacle Will Boost Jobs and Capital Investment

Dear Mr. Stodola:

As the leading voice of Florida's business community, the Florida Chamber of Commerce supports resolving the Mile Point obstacle. In order to fully capitalize on the once-in-a-generation opportunity Florida has to become a leader in international trade, we must support economic growth and let the world know that Florida is open for business. For JaxPort, a critical transportation region to the Southeast United States, there is no better way to achieve this mission than to include the Mile Point navigational hazard solution in the Chief of Engineer's report that will be submitted to Congress in February, 2012.

The Mile Point obstacle is putting JaxPort at a severe disadvantage. Terminals are turning away business because of time restrictions and fuel and resource costs involved with ships waiting to enter the St. Johns River.

The Mile Point navigational hazard is not only restricting ships and their cargo from entering the St. Johns River, its preventing jobs and capital investment in North Florida.

Resolving the Mile Point obstacle will immediately create 3,500 new jobs, and completing the project would add up to nearly 400,000 more containers annually.

The Florida Chamber of Commerce is a strong proponent of diversifying Florida's economy, and has made it a priority to help double Florida-origin exports within the next five years. With trade and logistics now added to Florida's Qualified Targeted Industry list, and with increased potential for Congress to finally pass the pending free trade agreements with Korea, Panama and Columbia, now is the right time to resolve the Mile Point obstacle and help put JaxPort in the right position to become a leader in international trade.

My best,

MarkWilson signature

Mark Wilson

President

cc: Paul Anderson, CEO, JaxPort

Edie Ousley

Director of Public Affairs

Florida Chamber of Commerce

136 S. Bronough Street

Tallahassee, FL 32301

850.521.1231 direct

850.251.6261 cell

850.521.1203 fax

eousley@flchamber.com <mailto:jschleuning@flchamber.com>

www.floridachamber.com <http://www.floridachamber.com/>

Stodola, Paul E SAJ

From: Louise Davis [DavisL@c1cufl.org]
Sent: Friday, August 19, 2011 1:34 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated. Again, Jacksonville and the surrounding counties need the jobs and revenues that those additional jobs will bring.

Sincerely,

Louise L. Davis

Branch Manager - Westside

Community First Credit Union

Invested in You

Ph 904.371.8033 * Fax 904-549-8760

davisl@c1cufl.org <mailto:davisl@c1cufl.org> * www.communityFirstFL.org <http://www.communityFirstFL.org>

Stodola, Paul E SAJ

From: Brenda Campbell [bcampbell@omnihotels.com]
Sent: Friday, August 19, 2011 1:33 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a grandmother to a four year old boy and a working member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point. It is essential that we continue our growth and expansion and I ask that you submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

As a member of the downtown professionals responsible for paying taxes and having a career that depends upon bringing in more revenue to the community, It is clear that this obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River and could result in a detrimental loss of revenues to this area. A remedy could immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to seeing and enjoying the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Brenda Campbell

Brenda Campbell, Senior Sales Manager
Religious, Government, Sports and Specialty Markets

Direct Line 904-791-4827
Omni Jacksonville Hotel
245 Water Street

Jacksonville FL 32202

Family-Discover

Stodola, Paul E SAJ

From: Dennis Curtis [DennisC@c1cufl.org]
Sent: Friday, August 19, 2011 1:31 PM
To: Stodola, Paul E SAJ
Subject: Mile Point on St. Johns River project in Jacksonville, FL

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Dennis W. Curtis, Jr.

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Stodola, Paul E SAJ

From: Kruayai, Christopher D. [Christopher.Kruayai@haskell.com]
Sent: Friday, August 19, 2011 1:27 PM
To: Stodola, Paul E SAJ
Subject: FW: Urgent Action Needed: Email Corps Today on JAXPORT

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Christopher D. Kruayai

Cell 904-545-3124

Christopher.kruayai@haskell.com <mailto:Christopher.kruayai@haskell.com>

Stodola, Paul E SAJ

From: Sharon Kramer [sharonk@c1cufl.org]
Sent: Friday, August 19, 2011 1:25 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Sharon D Kramer

Fleming Island Branch Manager

Community First. Invested In You

p904.371.8043 f904.371.8044

sharonk@c1cufl.org <mailto:sharonk@c1cufl.org>

www. CommunityFirstFL.org

<html>

Stodola, Paul E SAJ

From: John Hirabayashi [johnh@c1cufl.org]
Sent: Friday, August 19, 2011 1:20 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

August 19, 2011

Dear Mr. Stodola,

As a member of the community and CEO of a $1.1 billion credit union with 104,000 members in Jacksonville, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. Our unemployment rate in Jacksonville remains unacceptably high and the public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River and lost business opportunities for our region. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

John Hirabayashi

President and CEO

Community First Credit Union of Florida

JIM POOLE
193 NW DOGWOOD TERRACE
LAKE CITY, FLORIDA 32055

August 19, 2011

Mr. Paul Stodola
U S Army Corps of Engineers

Dear Mr. Stodola,

Lake City-Columbia County is proud to be a partner with JAXPORT and JAX USA to develop the number one logistics area in the world. I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

Columbia County along with 13 other rural counties working with the State of Florida has designated 800 acres to serve as an Intermodal Logistics Center. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida and the southeastern U.S.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jim Poole
Chair
Enterprise Florida Rural/Urban Working Group

Stodola, Paul E SAJ

From: TJ Harden [tharden@duvalasphalt.com]
Sent: Friday, August 19, 2011 2:01 PM
To: Stodola, Paul E SAJ

Dear Mr. Stodola,

As a member of the community and small business owner, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. Should operations at the port expand my company would have to hire additional employees to service the additional activities. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

T.J. Harden

Stodola, Paul E SAJ

From: Kristin Parkinson [kristin.parkinson@jokell.com]
Sent: Friday, August 19, 2011 2:01 PM
To: Stodola, Paul E SAJ
Subject: Army Corp of Engineers Mile Point Navigational hazard

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

Not moving forward with this project effects the creation of jobs and delays the economic growth of our city. The public and private port terminals serve as a major economic catalyst for many business sectors in Jacksonville.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Kristin Parkinson
Branch Manager
kristin.parkinson@jokell.com

Jo-Kell Inc.
9655 Florida Mining Blvd W. • Jacksonville, FL 32257 Phone (904) 260-8420 • Fax (904) 260-8401 www.jokell.com <http://www.jokell.com>

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Dear Mr. Stodola,

As a citizen of Jacksonville, I would like to urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This dilemma is preventing job creation and economic growth in our community; we must act quickly. The public and private port terminals can really help stimulate the local economy if given the chance. The benefits from the remedy will have an immediate and long-lasting impact on this region of 1.5 million people, and the entire state of Florida.

The current time restrictions result in excessive fuel costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and boost the local economy by creating as much as 3,500 new jobs.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Scott Davey
2041 Matefield Rd
Jacksonville FL 32225

Stodola, Paul E SAJ

From: Mandy Secrest [mls@auld-white.com]
Sent: Friday, August 19, 2011 1:58 PM
To: Stodola, Paul E SAJ
Subject: Soultion to the navigational hazard at Mile Point

Dear Mr. Stodola,

I was born and raised here in sunny Jacksonville, Florida and I strongly urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. Many other residents feel this way as well, as I am sure you will receive many other messages.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. Many families in Florida are experiencing economic crisis and could greatly benefit from this.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Mandy Secrest

Stodola, Paul E SAJ

From: Joe R. Pafford [jpafford@auld-white.com]
Sent: Friday, August 19, 2011 1:51 PM
To: Stodola, Paul E SAJ
Subject: St. Johns River Navigational Hazards

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Thank you,

Joe Pafford

Joe Pafford
Auld & White Constructors, LLC
4168 Southpoint Parkway, Suite 101
Jacksonville, FL 32216
Phone: (904) 296-2555
Fax: (904) 296-6990

Please visit our website http://www.auld-white.com <http://www.auld-white.com/>

P Please consider the environment before printing this e-mail.

Stodola, Paul E SAJ

From: Carla Romano [RomanoC@c1cufl.org]
Sent: Friday, August 19, 2011 1:47 PM
To: Stodola, Paul E SAJ
Subject: Correcting the navigational hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Carla Romano

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Stodola, Paul E SAJ

From: Gesek, Brad [bgesek@aerotek.com]
Sent: Friday, August 19, 2011 1:44 PM
To: Stodola, Paul E SAJ
Subject: Brad Gesek

Dear Mr. Stodola,

I am writing you to express my desire for the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. The public and private port terminals serve as a major economic catalyst. The benefits at Mile Point will positively impact a region of over 1 million people here in Jacksonville and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region. I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

All the best,

Brad Gesek

Brad Gesek
Regional Contracts Manager
Aerotek Inc.
7077 Bonneval Rd. Suite 500
Jacksonville, FL 32216

Tel: 904-527-5601
Fax: 904-527-5590

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Stodola, Paul E SAJ

From: Blount, Jeff W. [Jeff.Blount@haskell.com]
Sent: Friday, August 19, 2011 1:06 PM
To: Stodola, Paul E SAJ
Subject: Support of Mile Point Fix

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jeffery W. Blount

Director of Project Development - Commercial Group

Haskell

(o) 904.791.4669 / (m) 904.563.6249 / (f) 904.475.7513

www.haskell.com <http://www.haskell.com>

Stodola, Paul E SAJ

From: NFHLA Administrator [nfhla@northfloridalodging.com]
Sent: Friday, August 19, 2011 3:32 PM
To: Stodola, Paul E SAJ
Cc: 'David Mariotti'; 'Paul Eckert'; dan.king@hyatt.com
Subject: Letter of Support

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

Representing the hotel industry in North Florida we support the solution to aid in job growth in Northeast Florida. With the creation of new jobs the hospitality industry is sure to see benefit. This solution will also begin the way for future cruise port discussion and visitors to North Florida.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

David Mariotti

North Florida Hotel & Lodging Association

President

Paul Eckert

Stodola, Paul E SAJ

From: Duncan, Kenneth S. [Kenneth.Duncan@haskell.com]
Sent: Friday, August 19, 2011 3:20 PM
To: Stodola, Paul E SAJ
Subject: Port of Jacksonville - Mile Point

Dear Mr. Stodola,

As a member of the community and a supporter of the JAXPORT improvements, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Ken Duncan, DBIA, LEED AP

HASKELL

Senior Project Manager

904-357-4260, cell 838-6029

Stodola, Paul E SAJ

From: Keith Church [Keith@jokell.com]
Sent: Friday, August 19, 2011 3:17 PM
To: Stodola, Paul E SAJ
Subject: Urgent Action Needed - Issue Impacts Jobs

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Keith Church
Product Specialist

keith@jokell.com <mailto:keith@jokell.com>

Jo-Kell Inc.
9655 Florida Mining Blvd. W• Jacksonville, FL 32257

Phone (904) 260-8420 • Fax (904) 260-8401 www.jokell.com <http://www.jokell.com>

Stodola, Paul E SAJ

From: Jennifer Weatherly [jdoan@shanercorp.com]
Sent: Friday, August 19, 2011 3:18 PM
To: Stodola, Paul E SAJ
Cc: Yaser Hasan; Jeff Truhlar
Subject: Jacksonville, FL / Port Issues

Dear Mr. Stodola,

I am writing from a hotel here in Jacksonville, Fl to raise our concerns regarding the navigational hazard at Mile Point in Jacksonville, FL. As a member of the business community located near the Jacksonville Port we urge the U.S. Army Corps of Engineers to proceed with the solution and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

Shaner Hotels has invested 12 million dollars in our hotel near the port. Our hotel is struggling in these challenging economic times, and we directly see the correlation in economic return to the community on this completion of this project. This obstacle is preventing the creation of jobs in our area and must be addressed quickly. Our hotel depends on these shipping terminals for increased revenues and bringing awareness to new businesses who may be considering Jacksonville for their port needs. The positive impact this change could have in our region is expected to create close to 3,500 new jobs. The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jennifer Joy Weatherly / Director of Sales

Courtyard By Marriott Kendall Town

9815 Lantern Street

Jacksonville, FL 32225

Phone: (904) 247-6782 / Fax: (904) 241-6726

www.marriott.com/jaxne <http://www.marriott.com/jaxne>

Please Check Out our You Tube Video!

Stodola, Paul E SAJ

From: Keith Hill [KHill@colonialoil.com]
Sent: Friday, August 19, 2011 3:05 PM
To: Stodola, Paul E SAJ
Subject: MILE POINT NAVIGATIONAL PROBLEM

Dear Mr. Stodola,

Colonial Oil Industries, Inc. is a very active company doing business in the Port of Jacksonville. As an active and concerned member of the Jacksonville community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and that a recommendation for remedy be submitted to Congress in the Chief of Engineer's report in February 2012.

Unfortunately I do not believe the community as a whole realizes the economic impact that our Port has on the local area. This Mile Point obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. We need these additional jobs in our community.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Best Regards,

Keith Hill

VP Marine

Colonial Oil Industries, Inc.

1301 Riverplace Blvd., Suite 2646

Jacksonville, Florida 32207

904-396-1388 ext 7220

904-838-3654 mobile

Stodola, Paul E SAJ

From: David H. Nosrat [dhn@auld-white.com]
Sent: Friday, August 19, 2011 3:03 PM
To: Stodola, Paul E SAJ
Subject: Navigational hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

David Nosrat
Auld & White Constructors, LLC
4168 Southpoint Parkway, Suite 101
Jacksonville, FL 32216
Phone: (904) 296-2555
Fax: (904) 296-6990

Please visit our website http://www.auld-white.com <http://www.auld-white.com/>

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Stodola, Paul E SAJ

From: Louis A. Dunbar [ldunbar@auld-white.com]
Sent: Friday, August 19, 2011 2:55 PM
To: Stodola, Paul E SAJ
Subject: Mile Point - Jacksonville fl.

Dear Mr. Stodola,

As a member of the construction community of Jacksonville, I am joining others that are urging the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

The JAXPORT is a economic engine for our area and this obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The benefits from the remedy will positively impact our region and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create new jobs.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Louis A. Dunbar

Louis Dunbar
Auld & White Constructors, LLC
4168 Southpoint Parkway, Suite 101
Jacksonville, FL 32216
Phone: (904) 296-2555
Fax: (904) 296-1896

Please visit our website http://www.auld-white.com <http://www.auld-white.com/>

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Stodola, Paul E SAJ

From: Gilbert P. Wright Jr. PA [gpwrightjr@bellsouth.net]
Sent: Friday, August 19, 2011 2:34 PM
To: Stodola, Paul E SAJ
Subject: Jacksonville FL Ports - Mile Point Problem - Request for Positive Action to Resolve

The Law Offices of Gilbert P. Wright, Jr.

76 South Laura Street, Suite 590

Jacksonville, FL 32202

August 19, 2011

Mr. Paul E. Stodola

Army Corp of Engineers

Dear Mr. Stodola,

As a resident of Jacksonville for the past ten years; and, more recently, a Board Member of the Jacksonville Historic Ship Association, tasked with returning the Cold War Destroyer "Charles F. Adams" back to downtown Jacksonville as a Naval History Museum, I am keenly aware of the Mile Point issues.

I urge the U.S. Army Corps of Engineers to submit a recommendation in its report to Congress in which will provide a solution to this navigational hazard.

You have the briefs by the port and interested corporate parties which have advised why the Mile Point problem is a serious detriment to the growth of our port and our Jacksonville area economy, both down- town and beyond.

I have also been convinced that this issue must be addressed soon. The port terminals serve as a major economic boost, which boost will not be restricted to the agencies and companies involved. It will benefit all Jacksonville citizens.

Thank you for your attention to this and the many other requests for positive action toward the end of resolving the Mile Point problem.

Stodola, Paul E SAJ

From: Mike A. Brown [mbrown@auld-white.com]
Sent: Friday, August 19, 2011 2:30 PM
To: Stodola, Paul E SAJ
Subject: Our economy

Mr Stodola pleas move foward with A solution to the navigational Hazard at mile point.And get congress moving

Mike Brown
Auld & White Constructors, LLC
4168 Southpoint Parkway, Suite 101
Jacksonville, FL 32216
Phone: (904) 296-2555
Fax: (904) 296-6990

Please visit our website http://www.auld-white.com <http://www.auld-white.com/>

P Please consider the environment before printing this e-mail.

Stodola, Paul E SAJ

From: Joe Carbonara [jmc@duvalasphalt.com]
Sent: Friday, August 19, 2011 2:30 PM
To: Stodola, Paul E SAJ
Subject: Proposed Mile Point fix

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

The proposed +/- $40 million fix is a small price to pay for the long-term economic benefits for Jacksonville and the region.

This is one use of government funds that is a no-brainer.

Thank you for your consideration.

Joe Carbonara, CPA

Controller

Duval Asphalt Products, Inc.

904-296-2020 x224

Stodola, Paul E SAJ

From: Joe Carbonara [jmc@duvalasphalt.com]
Sent: Friday, August 19, 2011 2:30 PM
To: Stodola, Paul E SAJ
Subject: Proposed Mile Point fix

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

The proposed +/- $40 million fix is a small price to pay for the long-term economic benefits for Jacksonville and the region.

This is one use of government funds that is a no-brainer.

Thank you for your consideration.

Joe Carbonara, CPA

Controller

Duval Asphalt Products, Inc.

904-296-2020 x224

Stodola, Paul E SAJ

From: Hatton, Mark [MHatton@wm.com]
Sent: Friday, August 19, 2011 2:19 PM
To: Stodola, Paul E SAJ
Subject: Navigational Hazard at Mile Point

Dear Mr. Stodola,
As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,
Mark Hatton
Citizen and businessman in Jacksonville, FL

Waste Management recycles enough paper every year to save 41 million trees. Please recycle any printed emails.

Stodola, Paul E SAJ

From: Barry R. Sproles [bsproles@CWPOWELLINS.com]
Sent: Friday, August 19, 2011 2:10 PM
To: Stodola, Paul E SAJ
Subject: Jaxport - Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Barry R. Sproles, CWCA

Cecil W. Powell & Company

p: (904) 256-2039

f: (904) 353-5722

bsproles@cwpowellins.com

www.cwpowellins.com

Stodola, Paul E SAJ

From: Moulton, Paul [pmoulton@financialguide.com]
Sent: Friday, August 19, 2011 2:07 PM
To: Stodola, Paul E SAJ
Subject: Solution Needed

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Paul Moulton

Financial Services Professional

MassMutual Financial Group | Financial Design Associates

10151 Deerwood Park Blvd, Bldg. 100, Suite 300 | Jacksonville, FL 32256 |

((904) 997-2354 direct | È (904) 635-0516 mobile | www.fn-design.com <http://www.fn-design.com/>

Description: cid:image003.png@01CC2465.B7B08EC0

August 19, 2011

Dear Mr. Stodola,

As a member of the community and an active boater on the St John's River, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. We cannot afford to delay this project.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Alex Reitter
General Manager

Courtyard by Marriott Oceanfront
Jacksonville Beach
1617 N. First Street, Jacksonville, FL 32250
Telephone (904) 249-9071 Facsimile (904) 241-4321
Marriott.com/jaxjv

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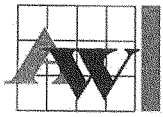

August 19, 2011

Re: Jaxport
Mile Point

Mr. Paul Stodola
Corps of Engineers
paul.e.stodola@usace.army.mil

Dear Mr. Stodola:

This letter is to request you help in aiding the severely struggling economy in Florida and particularly Northeast Florida by incorporating your solution to the Navigational hazard at Mile Point and submitting the recommendation to congress in the Chief Engineer's Report in February 2012.

If this solution is not incorporated, the area economy will continue to stagnate until the solution is incorporated. If implemented, this will greatly enhance the port terminals and provide the basis for growth and expansion in the area.

Thank you for your assistance in resolving this critical issue of repair and lifting of restrictions at Mile Point.

Sincerely,

J. William Mills
Sr. Project Manager

4168 Southpoint Parkway • Suite 101 • Jacksonville • Florida 32216 • 904-296-2555 • FAX 904-296-6990

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Justin S. Spottswood

Stodola, Paul E SAJ

From: Bernie O'Connor [BOConnor@prosserhallock.com]
Sent: Saturday, August 20, 2011 2:15 PM
To: Stodola, Paul E SAJ
Subject: Jacksonville Mile Point Project

Dear Mr. Stodola,

I, as a member of the community, urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

We are recreational boaters and traverse the Mile Point area often. We find the current conditions confusing and sometimes dangerous due to tide flow. The proposed improvements should correct these problems, and therefore we support them.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Bernie O'Connor
PROSSER HALLOCK
P 904-739-3655 x115
M 904-655-1789

Stodola, Paul E SAJ

From: Lumb, Robin [RLumb@coj.net]
Sent: Saturday, August 20, 2011 1:51 PM
To: Stodola, Paul E SAJ
Cc: Barrow, Donna
Subject: Resolving the Mile Point Issue is Critical to Jacksonville's Future

Dear Mr. Stodola:

As a long time Jacksonville resident, a small business owner and an elected official representing 865,000 residents of Duval County I would like to underscore the urgency of resolving the Mile Point issue.

My father was an officer in the U.S. Merchant Marine for many years. He often told stories of the high cost that his ships incurred whenever they were delayed in transit or otherwise kept from docking and unloading as quickly as possible. It is difficult to imagine that Jacksonville will ever be able to position itself as a major port if merchant vessels are only able to navigate the channel for a few hours each day.

As a member of Jacksonville's City Council I urge the U.S. Army Corps of Engineers to do all within its power to resolve the Mile Point hazard and to forward to Congress specific recommendations to achieve this at the earliest possible date.

Failure to address this issue within the shortest possible time frame will result in substantial economic harm to the economy of Northeast Florida and will further delay plans to modernize and upgrade Jacksonville's port facilities.

Time is of the essence.

Sincerely,

Rom Lumb
Jacksonville City Council
At-Large Group 5

Stodola, Paul E SAJ

From: Pat Ward [patward@c1cufl.org]
Sent: Saturday, August 20, 2011 9:53 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the Jacksonville community, and living here for 36 years I have seen the growth and changes in Jacksonville. We built a beautiful port so that we could grow jobs in our community and the issue of Mile Point is holding us back. This country needs jobs! We need to help our people to help themselves. That was the purpose of spending all those dollars to build that port. I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. Let's put our people to work!

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Patricia L. Ward

Arlington Branch Manager

Community First Credit Union

Invested in You

p 904.371.8063 *f 904.371.8064

pward@c1cufl.org <mailto:pward@c1cufl.org>

Stodola, Paul E SAJ

From: Craig Hughes [chughes@tollbrothersinc.com]
Sent: Friday, August 19, 2011 5:34 PM
To: Stodola, Paul E SAJ
Subject: Please Support the Mile Point Fix Recommendation to Congress- (Former Jaxport Project Manager)

Dear Mr. Stodola,

As a member of the community, Civil Engineer from Penn State,

and a former Jaxport Engineering and Construction Department Project Manager I am very familiar with the restrictions that Mile Point has placed on the Jacksonville Port commerce. There has been a lot of hard work and research from your Jacksonville District Corps office to come up with a viable solution. I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

This repair will be a sustainable investment in keeping commerce open allowing Northern FL to serve its purpose as the logistics and trade gateway to Florida and the Southeast.

I look forward to the seeing the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Craig James Hughes

Toll Brothers, Inc.

Land Development Manager

Rayonier

Value From The Ground Up™

Corporate Headquarters

Lee M. Thomas
Chairman and Chief Executive Officer

August 18, 2011

Mr. Paul E. Stodola
U.S. Army Corps of Engineers
Jacksonville District Office
701 San Marco Boulevard
Jacksonville, FL 32207

Dear Mr. Stodola:

As a member of the Jacksonville community and CEO of the 15th largest container exporter in the United States, I urge the Army Corps of Engineers to develop a remedy for the navigational hazard at Mile Point and include the recommendation in the Chief of Engineer's report to Congress in February 2012.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. This obstacle is impeding our economic growth and must be addressed quickly. Corrective action to immediately open the channel will create thousands of new jobs and business opportunities in Northeast Florida.

Our public and private port terminals serve as a major economic catalyst and the benefits of a navigational correction will positively impact our region and the State of Florida.

Sincerely,

P: 904.357.9100 | Rayonier Inc.
F: 904.357.9101 | 1301 Riverplace Boulevard
www.rayonier.com | Jacksonville, FL 32207

Stodola, Paul E SAJ

From: Undset, Christy (US NON-SSA) [Christy.Undset@baesystems.com]
Sent: Thursday, August 18, 2011 11:12 AM
To: Stodola, Paul E SAJ
Subject: Mile Point Hazard

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. Jacksonville should be a mecca for the local shipping industry's economic growth and yet we still have obstacles preventing us from being the port we could be!

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Christy Undset

Christy Undset

Manager, Payroll

Safariland

13386 International Parkway

Jacksonville, FL 32218

(904) 807-4976 Phone

(904) 755-2678 Mobile

(904) 741-9994 Fax

christy.undset@baesystems.com

Stodola, Paul E SAJ

From: Henry Luke [mail@lukevision.com]
Sent: Thursday, August 18, 2011 11:11 AM
To: Stodola, Paul E SAJ
Subject: Solution to Mile Point problem

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. As a consultant I have been studying Jaxport since 1980 and realize it's tremendous impact in the past and potential for the future.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Henry Luke
Luke Planning, Inc.
8651 Nathan's Cove Court
Jacksonville, FL 32256
(904) 725-4668 cell (904) 318-5266
www.lukevision.com <http://www.lukevision.com/>

Stodola, Paul E SAJ

From: nikkieskow@bellsouth.net
Sent: Thursday, August 18, 2011 11:09 AM
To: Stodola, Paul E SAJ
Subject: Fw: Mile Point -

Sent from my Verizon Wireless BlackBerry

From: "Eskow, Nikki" <Nikki_Eskow@csx.com>
Date: Thu, 18 Aug 2011 10:35:20 -0400
To: 'Nikki'<nikkieskow@bellsouth.net>
Subject: Mile Point -

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This situation is preventing the creation of jobs and economic growth and needs to be addressed quickly. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

Needless to say, in this economy, a benefit such as this is extremely important.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River thereby making our Port less competitive with other ports.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Nikki Eskow

544 Redberry Lane

Jacksonville, FL

Stodola, Paul E SAJ

From: Bateh, Charles J. [Charles.Bateh@haskell.com]
Sent: Thursday, August 18, 2011 11:03 AM
To: Stodola, Paul E SAJ
Cc: Chris Quinn
Subject: Mile Point Restriction Jacksonville, FL

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. It is hard to imagine with the amount of port activity that we have that this issue has not been corrected before. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

This project must certainly have more priority than others due to its immediate impact on our city and its people. Please help with this situation.

Sincerely,

Charles J. Bateh | LEED® AP

Director of Project Development

HASKELL

America's Design-Build Leader®

Office 904-791-4711

Direct Fax 904-475-7572

Stodola, Paul E SAJ

From: Sollee, Paul [SolleeP@Bolles.org]
Sent: Thursday, August 18, 2011 11:04 AM
To: Stodola, Paul E SAJ
Subject: Solution to Mile Point Navigational Hazard

Dear Mr. Stodola,

As a member of the Jacksonville community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Paul Sollee

Director of MIS

The Bolles School

Stodola, Paul E SAJ

From: Gibson, Cecil [Cecil.Gibson@amerisbank.com]
Sent: Thursday, August 18, 2011 10:56 AM
To: Stodola, Paul E SAJ
Subject: Mile point reconstruction

Dear Mr. Stodola,

I would like to include my support for the correction of the problem that Mile Point causes in the St. John's River. As a recreational boater and fisherman that frequents this area, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. This is not only a vital economic project for the City of Jacksonville and our port services, it is also a continued safety hazard for boaters and the river pilots that navigate these waters. Many times I have witnessed the severe currents in this area push the ships navigating this passage come perilously close to leaving the channel, and fishing boats, attempt to quickly depart to avoid collisions.

This is so vital to our continued growth as a port, which Jacksonville desperately needs. This project will grow 3,500 new jobs, and be the first obstacle to be eliminated in order to make JaxPort a premier port facility on the East Coast. This obstacle is preventing that from taking place. The creation of jobs and economic growth and must be addressed quickly. Both the public and private port terminals are an extremely valuable asset to our community and serve as a major economic catalyst. Repairing Mile Point will serve to be a positive impact to all residents of Metropolitan Jacksonville all 1.5 million people and the entire state of Florida.

The restrictions posed to shipping in the current river configuration is costing shipping companies both them and fuel costs that can be eliminated.as ships wait to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a driver for 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Cecil F. Gibson III

Ameris Bank | SVP, Business Banking Manager

Stodola, Paul E SAJ

From: Dan Braithwaite [BraithwaiteD@vystarres.com]
Sent: Thursday, August 18, 2011 10:45 AM
To: Stodola, Paul E SAJ
Subject: Mile Point Navigational Hazard

Dear Mr. Stodola,

As a member of the community, and a vested business manager, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This man-made obstacle was built using the best methods and technology at that time. It now is preventing goods and services to flow which can be not only a threat to our national security but also the creation of local jobs and economic growth which is the goal of the President. This must be addressed quickly. The public and private port terminals serve as a major economic catalyst as well as strategic troop and supply movement during national disasters. The benefits from the remedy will positively impact a region of 1.5 million people, the state of Florida, and the entire Nation. This expenditure can be an example of spending several millions of Federal dollars to return billions of dollars in economic impact and improvement of our National Security.

Currently there are time restrictions relating to the tidal flow which results in high fuel and resource costs from ships waiting to enter the St. Johns River. Removing or altering this man-made mistake will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated. I will also sleep more soundly knowing our National Defense System can no longer be restricted to enter and leave port based upon tidal ebbs and flows.

Sincerely,

Dan Braithwaite

Dan Braithwaite

Senior Vice President, Broker

Stodola, Paul E SAJ

From: Janet Stringer [stringer829@hotmail.com]
Sent: Thursday, August 18, 2011 10:43 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jan Stringer
ERA Davis & Linn

Stodola, Paul E SAJ

From: John Richardson [jrichardson@phoenixrealty.net]
Sent: Thursday, August 18, 2011 10:40 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. I regularly work with large distributors and manufacturers who are considering NE Florida for expansions or relocations. Those that would utilize our port are always considering Savannah and Charleston as alternative locations.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated. I would like to see our ports rise to the top of these prospect's lists and capture the jobs that have been diverted to other port cities.

Sincerely,

John Richardson, SIOR
President

Grubb & Ellis|Phoenix Realty Group, Inc.
10739 Deerwood Park Boulevard #310

Jacksonville, Florida 32256

Stodola, Paul E SAJ

From: Elissa Schuetz [elissa@mycommunitybook.com]
Sent: Thursday, August 18, 2011 10:36 AM
To: Stodola, Paul E SAJ
Subject: jobs for Jax

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Elissa Schuetz

Neighborhood Publications logo smaller size

Vice President of Sales & Ad Development

904.514.5330

904.375.1831 fax

Elissa@ConnectToNeighbors.com

www.ConnectToNeighbors.com

Stodola, Paul E SAJ

From: Michael Nelson [mhn904@yahoo.com]
Sent: Thursday, August 18, 2011 10:32 AM
To: Stodola, Paul E SAJ
Subject: Mile Hi

Dear Mr. Stodola,

I've been a citizen of the community just over four years and have grown to like living here so much my family members move to Jacksonville as well. I hope the U.S. Army Corps of Engineers can proceed with some resolve to the navigational hazard at Mile Point and submit the recommendation to Congress that will allow you to move forward with a remedy as soon as possible.

We know this work will set forth the creation of jobs, economic growth and should be started to get Hanjin and others to start providing jobs. The port terminals serve as a major economic catalyst for so many jobs that can be regained. The benefits from the remedy will positively impact a region of 1.4 million people.

We should all look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Michael Nelson
Jacksonville, Florida

Michael

"Life is not about waiting for the storms to pass it's about learning how to dance in the rain."

Stodola, Paul E SAJ

From: aj belmont [ajbelmont@gmail.com]
Sent: Thursday, August 18, 2011 10:27 AM
To: Stodola, Paul E SAJ
Subject: I support the plan to better the port in Jacksonville

Mr. Stodola,

I don't personally go to the port for any reason, but it seems a shame to have developed this far only to keep ships waiting off-shore for the tide/current to be just right. I'm sure there are some people who will be inconvenienced for a short time as projects take place, but we all endure some bumps in the road for the good of long term growth.

There are great economic development opportunities in Northeast Florida that will result from Mile Point's repair.

Sincerely,

AJ Belmont
904-372-3530

Stodola, Paul E SAJ

From: Derek Rowan [Derek.Rowan@btginc.com]
Sent: Thursday, August 18, 2011 10:23 AM
To: Stodola, Paul E SAJ
Subject: Solution to the Navigational Hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Derek Rowan

BTG, Inc. || Client Executive

Office: 904.998.9414 · Mobile: 904.635.0936

4141 Southpoint Drive East · Suite C · Jacksonville, FL · 32216

derek.rowan@BTGInc.com <mailto:Todd.Nelson@BTGInc.com> · www.BTGInc.com <http://www.btginc.com/>

Stodola, Paul E SAJ

From: Turner, Stamie (CMG-Jacksonville) [Stamie.Turner@coxinc.com]
Sent: Thursday, August 18, 2011 10:21 AM
To: Stodola, Paul E SAJ
Subject: Economic Development in NE Florida

Importance: High

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Stamie Turner

Stamie Turner

Senior Account Manager

office: 904-245-8702

fax: 904-245-8703

Stodola, Paul E SAJ

From: Cusack, Bernadette M. [cusack.bernadette@mayo.edu]
Sent: Thursday, August 18, 2011 10:13 AM
To: Stodola, Paul E SAJ
Subject: Mile Point navigational hazard

Dear Mr. Stodola,
As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,
Bernadette Cusack

Bernadette Cusack
OIP Technology Development Liaison
Mayo Clinic Florida
4500 San Pablo Road
Jacksonville, Fl 32224
Phone: 904-953-7143
FAX: 904-953-6276
email: cusack.bernadette@mayo.edu

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Stodola, Paul E SAJ

From: Jennifer Degaetano [jennifer.degaetano@db.com]
Sent: Thursday, August 18, 2011 10:10 AM
To: Stodola, Paul E SAJ
Subject: Navigational Hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jennifer Feschak

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Stodola, Paul E SAJ

From: Cope, Deanna [dcope@GFNET.com]
Sent: Thursday, August 18, 2011 12:23 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the northeast Florida community, I respectfully request that the USACE proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Deanna Cope

Stodola, Paul E SAJ

From: Matthew S. McAfee [mmcafee@northfloridalaw.com]
Sent: Thursday, August 18, 2011 12:15 PM
To: Stodola, Paul E SAJ
Subject: Infrastructure Needed

Dear Mr. Stodola,

As a member of the Jacksonville business community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

It is vital to our future growth in Jacksonville that the issues at Mile Point be resolved quickly in order to allow Jacksonville to continue to develop as a national transportation hub.

Driver, McAfee, Peek & Hawthorne, P.L.

One Independent Drive, Suite 1200

Jacksonville, Florida 32202

Direct: 904.301.1266

Phone: 904.301.1269

Fax: 904.301.1279

Cell: 904.534.4249

E-Mail: mmcafee@northfloridalaw.com

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Stodola, Paul E SAJ

From: Chandley, Ryan S. [RChandley@cemexusa.com]
Sent: Thursday, August 18, 2011 12:12 PM
To: Stodola, Paul E SAJ
Subject: Engineer's Report!

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

As an industry leader Cemex is committed to moving Jacksonville forward!

Sincerely,

Ryan Chandley

VP/ GM NE Florida

Daytona, FL/ Jacksonville, FL/ Brunswick, GA

East Region

US Operations

Stodola, Paul E SAJ

From: JWG [jwgreen82@gmail.com]
Sent: Thursday, August 18, 2011 12:06 PM
To: Stodola, Paul E SAJ
Subject: St. John's River Mile Point Remedy

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Regards,

Jeffrey W. Green

Managing Director

JWG Consulting Group

jwgreen82@gmail.com

904-705-2514

Stodola, Paul E SAJ

From: Ernest Saltmarsh [ernest.saltmarsh@colliers.com]
Sent: Thursday, August 18, 2011 11:59 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, and Heckscher Drive resident, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

I personally believe that the fix of mile point, as well as deepening of the river, will be a massive catalyst for the city and take our city to the next level. I have lived here my whole life, and just entered the commercial real estate industry. I have learned a lot about the issue recently, and hope that the issues with the river are soon resolved, as it would reap major economic rewards for the city. This is the type of investment that the government should be making in these troubled times. It will greatly benefit the community and residents.

Sincerely,

Ernie Saltmarsh IV
Marketing Coordinator | Northeast Florida Direct +1 861 1144 | Mobile +1 904 710 4771 Main +1 904 358 1206 | Fax +1 904 353 4949 ernest.saltmarsh@colliers.com
<mailto:ernest.saltmarsh@colliers.com>

Colliers International | Northeast Florida
1 Independent Drive | Suite 2401
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Stodola, Paul E SAJ

From: Holt, Ray [Holt@coj.net]
Sent: Thursday, August 18, 2011 11:57 AM
To: Stodola, Paul E SAJ
Subject: Mile Point dredging project support

Dear Mr. Stodola,

I just wanted to add my voice to the chorus of support for the mile-point project. If there is anything I can do from my office to make the project run more smoothly, please let me know. I stand ready to introduce legislation to support this project in any way. My district has been hit hardest of all by unemployment and foreclosures. The additional jobs that this improvement will bring are essential.

Ray Holt
City of Jacksonville

Stodola, Paul E SAJ

From: Shannon Dearin [SDearin@3hgrouphotels.com]
Sent: Thursday, August 18, 2011 11:50 AM
To: Stodola, Paul E SAJ

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. We benefit from the cruise terminal there and would like to see an opportunity for more ships leaving from this area.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Shannon Dearin
General Manager
Fairfield Inn and Suites Jacksonville West/Chaffee Point

Enjoy an online tour of our property at http://photowebusa.com/fairfield/jacksonville/video/

Shannon Dearin
General Manager
Fairfield Inn and Suites Jacksonville West
561 Chaffee Point Blvd
Jacksonville, FL 32221
904-693-4400
904-693-4433Fax

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Stodola, Paul E SAJ

From: Ray Driver [rdriver@northfloridalaw.com]
Sent: Thursday, August 18, 2011 11:42 AM
To: Stodola, Paul E SAJ
Subject: Northeast Florida - Mile Point

Dear Mr. Stodola:

As a resident of, and business owner in, the Northeast Florida community, I have watched with great interest the discussions regarding the navigational hazard at Mile Point. I realize there is a substantial amount of money at issue, and we continue to find ourselves in challenging economic times. However, I believe that challenges present opportunities and Mile Point is one of those.

The Mile Point navigational hazard is preventing the creation of jobs and economic growth in Northeast Florida. As a business owner with a stake in the outcome, it is my belief that the issue must be addressed quickly or the opportunities that exist today may not be here tomorrow. The port serves as a major economic catalyst for our region, and solving the Mile Point problem will positively impact Northeast Florida specifically and the State of Florida generally. Because of the restrictions on the times that ships can enter our port, shippers have higher fuel and resource costs and that hurts business. A remedy will immediately alleviate those constraints and serve as a catalyst to create thousands of new jobs in our region. Accordingly, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated. If there is anything that I do to help achieve a positive result, please let me know.

Very truly yours,

G. Ray Driver, Jr.
Driver, McAfee, Peek & Hawthorne, P.L.
One Independent Drive, Suite 1200
Jacksonville, Florida 32202
Direct: 904.301.1267
Fax: 904.301.1279
Cell: 904.534.4137
E-Mail: rdriver@northfloridalaw.com <mailto:rdriver@northfloridalaw.com>

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Stodola, Paul E SAJ

From: Tim Howe [thowe@howesinspections.com]
Sent: Thursday, August 18, 2011 11:30 AM
To: Stodola, Paul E SAJ
Cc: 'Representative Ander Crenshaw'
Subject: Mile Point Concern in Jacksonville Florida

Dear Mr. Stodola,

As a member of the community of Jacksonville Florida, U. S. Army veteran, local business owner and Sergeant-at-Arms for the Southside Business Men's Club, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Scott Bethmann
Owner and Entrepenuer
Snap Fitness

Stodola, Paul E SAJ

From: Angela Tekin [atekin@OasisAdvantage.com]
Sent: Thursday, August 18, 2011 11:27 AM
To: Stodola, Paul E SAJ

Dear Mr. Stodola,

I am in the staffing and recruiting business in Jacksonville and have been for the past 29 years. I am also a Jacksonville native and active business and community advocate since 1980. I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

it seems that this is the most viable solution in allowing greater access to the existing port facilities. I've read the articles in the newspaper and understand that the Mile Point obstacle is preventing the flow of trade and we need this fixed QUICKLY. We've waited long enough to be a port "authority" and there are thousands of jobs and lives at stake on this decision. Jacksonville and the region needs an economic boost and this is an "at hand" solution which will help spark the economic burst we need.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Angie Tekin, PSC

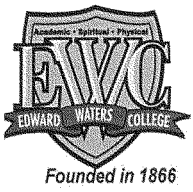
Oasis Staffing, Inc.

residence:

5950 Windsor Forest Drive

Jacksonville, FL. 32210

Angela Tekin
Professional Staffing Consultant
Oasis Staffing
6950 Phillips Highway



Founded in 1866

Edward Waters College

Career Planning & Placement

August 18, 2011

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Mrs. Helen B. Britt
Helen B. Britt

1658 Kings Road, Jacksonville, Florida 32209 • Phone 904-470-8218 • Fax 904-470-8218 •
hbritt@ewc.edu

Stodola, Paul E SAJ

From: Brad Hollett, LEED AP [brad@acceleratedconstruction.com]
Sent: Thursday, August 18, 2011 12:26 PM
To: Stodola, Paul E SAJ

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Thanks,

Brad Hollett, LEED® AP
President and Medical Office Expert

ACC_ACT Logo 600dpi

6903 Atlantic Blvd
Jacksonville, FL 32211
(cell) 904. 910 . 6699
(p.jax) 904. 724. 0007
Proud Member

Stodola, Paul E SAJ

From: Tom Brown [tombrown@damespointlogistics.com]
Sent: Thursday, August 18, 2011 12:59 PM
To: Stodola, Paul E SAJ
Cc: James.Main@hklaw.com; Brantley Morrison
Subject: Jacksonville Mile Point Project

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Tom W. Brown

Vice President

Dames Pont Logistics

9850 New Berlin Rd.

Jacksonville, FL 32226

Stodola, Paul E SAJ

From: Carswell Fannie L [fannie.l.carswell@irs.gov]
Sent: Thursday, August 18, 2011 1:18 PM
To: Stodola, Paul E SAJ
Subject: SHIPS PASSAGE

THANKS FOR THE OPPORTUNITY TO EXPRESS MY THOUGHTS ABOUT THIS SITUATION. I THINK THE CITY SHOULD DO WHATEVER NECESSARY TO PROCEED WITH MAKING A WAY FOR THE SHIPS TO MEET THEIR DEADLINES AND COMMITMENTS. IF WE CAN FIND MONEY TO PUT GRASS ON A GOLF COURSE SO OUR CHILDREN CAN PLAY ON IT SAFELY, THEN WE SHOULD BE ABLE TO FIND THE FUNDS TO GET THESE SHIPS THRU.

PAPPAS METCALF JENKS & MILLER

PROFESSIONAL ASSOCIATION
ATTORNEYS AT LAW
245 RIVERSIDE AVENUE • SUITE 400
JACKSONVILLE, FLORIDA 32202
Telephone: (904) 353-1980
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FRANK E. MILLER
M. LYNN PAPPAS
STACI M. REWIS
MARCIA PARKER TJOFLAT
KATHRYN F. WHITTINGTON

August 18, 2011

VIA E-MAIL @ Paul.E.Stodola@usace.army.mil

Paul Stodola
Army Corps of Engineers

Dear Mr. Stodola:

I am writing to express my support for the proposed navigational improvements to solve the navigational hazard at Mile Point in the St. Johns River. Please proceed with the proposed solution and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

Eliminating the Mile Point hazard will help the Port and City create jobs and economic growth. Both are urgently needed in our region.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

John G. Metcalf

JGM: jl

{00194512.DOCX.}

CECIL W. POWELL & COMPANY

INSURANCE, INTERNATIONAL FINANCIAL PLANNING AND SURETY BONDS - SINCE 1935
219 N. NEWNAN STREET • P.O. DRAWER 41490, JACKSONVILLE, FLORIDA 32203-1490
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Knowledge and Wisdom

August 18, 2011

Mr. Paul E. Stodola
U.S. Army Corps of Engineers
Paul.E.Stodola@usace.army.mil

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Fitzhugh K. Powell, Jr. AAI, CRIS, CWCA
President
Cecil W. Powell & Company
fpowell@cwpowellins.com

Independent Insurance Agent

Stodola, Paul E SAJ

From: m_edelman@comcast.net
Sent: Thursday, August 18, 2011 7:03 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Matthew E Edelman

Stodola, Paul E SAJ

From: Marilyn Feldstein [mfeldstein@bellsouth.net]
Sent: Thursday, August 18, 2011 6:55 PM
To: Stodola, Paul E SAJ
Subject: Navigational Hazard at Mile Point

Dear Mr. Stodola:

As a native of Jacksonville and a long-time member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. We need the ships to operate more efficiently and cost effectively. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to seeing the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Marilyn
Marilyn A. Feldstein
M.P.A., JCTC, MBTI, PHR
Career Coach and Professional Speaker
Career Choices Unlimited
(904) 443-0059 or 262-9470
4465 Baymeadows Road, Suite 7
Jacksonville, FL 32217
www.careerchoicesunlimited.com

Stodola, Paul E SAJ

From: rosettabaker1@gmail.com
Sent: Thursday, August 18, 2011 5:11 PM
To: Stodola, Paul E SAJ
Subject: Support U.S. Army Corps Jacksonville

Dear Mr. Stodola,
The public and private port terminals serve as a major economic catalyst.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is required and restrictions are eliminated.

Regards

Rosetta Baker

Sent from my HTC on the Now Network from Sprint!

Stodola, Paul E SAJ

From: Jeanne Long [jlong@papmet.com]
Sent: Thursday, August 18, 2011 4:54 PM
To: Stodola, Paul E SAJ
Cc: lpappas@papmet.com
Subject: Mile Point

Dear Mr. Stodola:

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

M. Lynn Pappas

Pappas Metcalf Jenks & Miller, P.A.

245 Riverside Avenue, Suite 400

Jacksonville, Florida 32202

Phone: (904) 353-1980

Stodola, Paul E SAJ

From: Gordon Mobley [GMobley@tcgmgt.com]
Sent: Thursday, August 18, 2011 4:52 PM
To: Stodola, Paul E SAJ
Subject: 3,500 new jobs

Dear Mr. Stodola,

As a member of the Jacksonville community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Gordon Mobley
Vice President -- North Florida Region
The Continental Group Inc.
6620 Southpoint Drive South, Suite 610
Jacksonville, Florida 32216
Phone: 904 733-3334
Fax: 904 733-3933
gmobley@tcgmgt.com

Stodola, Paul E SAJ

From: Norman W. Gregory, CCIM [Norm.Gregory@sjcchamber.com]
Sent: Thursday, August 18, 2011 4:35 PM
To: Stodola, Paul E SAJ
Cc: Kirk Wendland; Carol Saviak
Subject: navigational hazard at Mile Point

Dear Mr. Stodola,

As a citizen and community economic developer, I implore the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This navigational and economic development project is needed for the creation of jobs and economic growth and must be acted upon quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

We look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Norman W. Gregory, CCIM

VP Economic Development

St. Johns County Chamber of Commerce

1 Riberia Street

Saint Augustine, Florida 32084

Office - 904-829-5681

Cell - 904-699-3848

nwgregory@comcast.net

Stodola, Paul E SAJ

From: Clint Drawdy [cdrawdy@imethodsinc.com]
Sent: Thursday, August 18, 2011 4:18 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Clint Drawdy

Clint Drawdy
President / COO

Office: 904.306.2261
Cell: 904.476.9432
Fax: 904.398.4148
7807 Baymeadows Rd E, Suite 200
Jacksonville FL 32256
www.imhealthit.com <http://www.imhealthit.com/>

<http://www.imethodsinc.com/>

Stodola, Paul E SAJ

From: Schubert, Eric [ESchubert@cemexusa.com]
Sent: Thursday, August 18, 2011 4:05 PM
To: Stodola, Paul E SAJ
Subject: Mike Point Solution

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly.

The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and the restrictions are eliminated,

Sincerely,

Eric Schubert

Safety Training Manager - East Region - United States of America

Office: (904) 213-8860 Fax: (904) 213-8859 Mobile: (904) 219-3838

Address: 340 Corporate Way Suite 100, Orange Park, Florida, 32073

e-Mail: eschubert@cemexusa.com

www.cemexusa.com

Stodola, Paul E SAJ

From: Robinson, Valarie [vrobinso@unf.edu]
Sent: Thursday, August 18, 2011 3:20 PM
To: Stodola, Paul E SAJ
Subject: Jacksonville, FL - Mile Point Initiative

Dear Mr. Stodola,

As a member of the Jacksonville, FL community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Valarie Robinson, M.A., M.B.A.

College of Arts & Sciences Career Coordinator

Adjunct Instructor

Career Services

University of North Florida

1 UNF Drive, Bldg. 2, Rm. 1100

Jacksonville, FL 32224-7699

904-620-1606 (COAS Office)

Stodola, Paul E SAJ

From: Cliff Stewart [cstewart@nextrancorp.com]
Sent: Thursday, August 18, 2011 3:14 PM
To: Stodola, Paul E SAJ
Subject: Resolving the "Mile Point Navigational Hazard" St Johns River, Jacksonville

The Port of Jacksonville is vital to the growth of North Florida and S. Ga. The potential of this area can not be fully realized unless we can eliminate the "Mile Point Hazard" , thus making our port accessible to shipping at all times. I am certain if you review all the facts surrounding this project, you will understand why you should take steps to remove this Navigational Hazard from the St Johns River
immediately! Thank you ..... Cliff Stewart, V.P., GM
Nextran Corporation
Jacksonville, FL

Stodola, Paul E SAJ

From: Roger Dandy [dandy1@islink.com]
Sent: Thursday, August 18, 2011 3:07 PM
To: Stodola, Paul E SAJ
Subject: Sisters Creek/Mile Point Currents!

August 18, 2011.

To: Jacksonville District Corps of Engineers

ATTN: Paul Stodola

Subject: Sisters Creek/ Mile Point Currents - Channel Deepening.

Dear Mr. Stodola,

As a member of the marine community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation(s) to Congress in the Chief of Engineer's report at the earliest opportunity.

Hopefully this year?

The concerns of the local pilotage members have been made known by them for many years and enough talk and time has been wasted in addressing this problem.

This obstacle places this the Port of Jacksonville, which is in many respects in an excellent location to serve the country's lower east coast and its interior, especially when compared to Miami/Port Everglades is way behind.

This in conjunction with the Corps necessity to also address the channel's deepening, will if not attended too soonest, have this port miss out on an excellent opportunity for expansion.

Not to belabor a subject, but this obstacle is possibly preventing the creation of jobs with associated economic growth and thus must be addressed quickly.

The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people.

The current time restrictions result in high fuel and resource (loss of movement time) costs from ships waiting to enter the St. Johns River. A remedy of the Mile Point currents will

immediately alleviate these constraints and serve as a catalyst to possibly create 3,500 new jobs in our region.

The entire marine community look forward to the economic development opportunities in Northeast Florida that will arise after the Mile Point restrictions are eliminated.

Sincerely,

ROGER DANDY & ASSOCIATES, INC.

Ph: 904-626-6774

E-mail dandy1@lslink.com

Stodola, Paul E SAJ

From: christopher.m.quevedo@wellsfargo.com
Sent: Thursday, August 18, 2011 3:00 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Chris Quevedo

Business Development Officer

Florida Business Banking

Wells Fargo and Company l 225 Water Street, 4th Floor l Jacksonville, FL 32202

MAC Z3055-045

Tel 904-489-5428 l Cell 904-608-6519 l Fax 866-420-3144

christopher.m.quevedo@wellsfargo.com

Stodola, Paul E SAJ

From: Drum, Carmelita [carmelita.drum@ironstone.com]
Sent: Thursday, August 18, 2011 8:49 AM
To: Stodola, Paul E SAJ
Subject: Urgent Action Needed

Dear Mr. Stodola,

My name is Carmelita Drum residing in Jacksonville Fl ,Duval County, I am writing to show my support to the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. By resolving this problem, many jobs will be created which will positive impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Carmelita Drum

IronStone Bank is a division of First-Citizens Bank & Trust Company.

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Stodola, Paul E SAJ

From: Lynch, Charles R. [clynch@GFNET.com]
Sent: Thursday, August 18, 2011 2:09 PM
To: Stodola, Paul E SAJ

Dear Mr. Stodola,

As a member of the engineering community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth for the region and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Charles R. Lynch, P.E. | Vice President - Operations Manager South

Gannett Fleming Transit & Rail Systems| 10751 Deerwood Park Boulevard, Jacksonville, FL, 32256

t 904.998.9809 x5913 | c 904.669.1176| clynch@gfnet.com

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HASKELL
America's Design-Build Leader®

J. Paul Tyler
President - Commercial Group

August 18, 2011

Re: Mile Point Navigational Solution

Mr. Paul E. Stodola
U.S. Army Corps of Engineers

Dear Mr. Stodola:

As a member of the Board of Directors for the Jacksonville Regional Chamber of Commerce and a life-long resident of the Jacksonville area, I wish to express my strong support for the USACOE proceeding forward with the proposed solution to resolve the navigational hazard that currently exists at Mile Point. More specifically, I urge you to submit the recommendation for the proposed fix to congress in the Chief Engineers report in February of 2012.

In my professional career with The Haskell Company, I have had the opportunity to head our company's Distribution Division and worked with clients in the logistics industry from around the country to help them plan, design and build new distribution facilities. I know from that experience that Jacksonville's value to potential customers in the logistics business would be greatly increased if the Mile Point situation was remedied, which would result in significantly more economic activity to this area. This will be even more vital to the local and U.S. economy once the renovations to the Panama Canal are completed allowing post Panamax ships to call on the East Coast of the United States.

I thank you for your consideration and leadership on this issue and for your service to our community and our country.

Sincerely,

J. Paul Tyler

The Haskell Company
111 Riverside Avenue
Jacksonville, Florida 32202

Stodola, Paul E SAJ

From: Marion Brian [BMarion@titanamerica.com]
Sent: Friday, August 19, 2011 10:48 AM
To: Stodola, Paul E SAJ
Subject: Solutions for Navigational hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Brian Shea Marion

Shea Marion

Tarmac America

Ph: 386-527-0089

Fax: 386-257-1278

Stodola, Paul E SAJ

From: Rutledge Ryan [RRutledge@titanamerica.com]
Sent: Friday, August 19, 2011 10:44 AM
To: Stodola, Paul E SAJ
Subject: Mile Point Obstacle

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely

Ryan Rutledge

Tarmac America - North Central Region

P.O. Box 24825

Jacksonville, Fl. 32241

Cell: 904.219.2005

Fax: 904.296.6336

Stodola, Paul E SAJ

From: Jarrett Ray [RJarrett@titanamerica.com]
Sent: Friday, August 19, 2011 10:45 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Ray Jarrett

Ray Jarrett

Concrete Products

Sales Representative

rjarrett@titanamerica.com <mailto:rjarrett@titanamerica.com>

Office--386-226-1845

Fax-----386-257-1278

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Stacy Cruikshank
96100 Light Wind Drive
Fernandina Beach, FL 32034

JACKSONVILLE
JAGUARS

J WAYNE WEAVER
CHAIRMAN
CHIEF EXECUTIVE OFFICER

August 23, 2011

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

JWW/cgq

JACKSONVILLE JAGUARS, LTD
One Stadium Place, Jacksonville, Florida 32202, tel:(904) 633-6000, fax:(904) 633-6045

Rayonier
Value From The Ground Up™

Corporate Headquarters

Lee M. Thomas
Chairman and Chief Executive Officer

August 18, 2011

Mr. Paul E. Stodola
U.S. Army Corps of Engineers
Jacksonville District Office
701 San Marco Boulevard
Jacksonville, FL 32207

Dear Mr. Stodola:

As a member of the Jacksonville community and CEO of the 15th largest container exporter in the United States, I urge the Army Corps of Engineers to develop a remedy for the navigational hazard at Mile Point and include the recommendation in the Chief of Engineer's report to Congress in February 2012.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. This obstacle is impeding our economic growth and must be addressed quickly. Corrective action to immediately open the channel will create thousands of new jobs and business opportunities in Northeast Florida.

Our public and private port terminals serve as a major economic catalyst and the benefits of a navigational correction will positively impact our region and the State of Florida.

Sincerely,

P: 904.357.9100 | Rayonier Inc.
F: 904.357.9101 | 1301 Riverplace Boulevard
www.rayonier.com | Jacksonville, FL 32207

Geer Services, LLC
301 West Bay Street, Suite 460, Jacksonville, Florida 32202-5184
e-mail: info@geerservices.com • v:904-384-7900 • f:904-354-7904

August 18, 2011

Dear Mr. Stodola,

As a member of the community and co-owner of a Service-Disabled Veteran-Owned Small Business in downtown Jacksonville, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs for ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida for mine and other businesses that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

William P. Geer

Stodola, Paul E SAJ

From: Rech, Ryan (JACKSONVILLE, FL) [ryan.rech@ml.com]
Sent: Thursday, August 18, 2011 8:35 AM
To: Stodola, Paul E SAJ
Subject: Mile Point
Attachments: Picture (Device Independent Bitmap)

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Ryan P Rech

Ryan P. Rech

Merrill Lynch Global Wealth Management

50 N. Laura St

Jacksonville, FL 32202

Phone: 904.634.6175

E.Mail: ryan.rech@ml.com

Picture (Device Independent Bitmap)

Advisor Magazine: http://www.ml.com/mladvisor <http://www.ml.com/mladvisor>

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Stodola, Paul E SAJ

From: tina.l.crowder@wellsfargo.com
Sent: Thursday, August 18, 2011 8:22 AM
To: Stodola, Paul E SAJ
Subject: Mile Point - Recommendation encouraged

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated. I work with many area businesses that would benefit from this project and the huge impact to our local economy. I am also a member of the US Coast Guard Reserves (21 years) and also see this as a great source of jobs for many.

Sincerely,

Tina

Tina L Crowder, VP Senior Rm

Wells Fargo Business Banking

225 Water Street, 4th Floor, Jacksonville, Fl 32202

Office: (904) 489-1955 Fax: 904 489-3960

Bank Cell: (904) 403-0076

Stodola, Paul E SAJ

From: Denoncourt, Peter [Peter.Denoncourt@saftbatteries.com]
Sent: Thursday, August 18, 2011 8:19 AM
To: Stodola, Paul E SAJ
Subject: Mile Point navigation hazard

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. A new manufacturing company in the area, Saft is importing and exporting goods by sea, so this obstacle directly affects our business.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

As a new member of Jacksonville's manufacturing community, I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Peter Denoncourt

Site Manager, Saft - Jacksonville

13575 Waterworks Street, Jacksonville, FL 32221

Ph. 904-861-1504 Mobile: 229-444-0005

P Save Paper - do you need to print this e-mail?
Merci de tenir compte de l'environnement avant d'imprimer cet e-mail

Stodola, Paul E SAJ

From: Muriel Bremer [mbremer@kmbs.konicaminolta.us]
Sent: Thursday, August 18, 2011 8:16 AM
To: Stodola, Paul E SAJ
Subject: WE NEED JOBS IN JACKSONVILLE, FLORIDA! Please help!

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Muriel Bremer
1026 Marvone Lane
Neptune Beach, Florida 32266
(904) 241-1168

Stodola, Paul E SAJ

From: Mallot, Jerry [Jerry.Mallot@JacksonvilleChamber.org]
Sent: Wednesday, August 17, 2011 11:04 PM
To: Stodola, Paul E SAJ
Subject: Mile Point

As the president of JAXUSA Partnership, our regional economic development partnership, I urge the Corps to move swiftly forward with the proposed "fix" to this very serious issue that is greatly impacting our current port users and is impeding our efforts to attract more port related jobs to Jacksonville.

Over the past five years we have helped grow or establish millions of square feet of new distribution centers in our region. All with expectation of 24 hour use of JaxPort. Now, we have major questions about the service these centers receive from shippers and cannot give them the certainty they need that mile point will be solved in the very near future.

Companies that are considering locating here as the best economic and logistic solution are holding back and considering less optimal locations because of the mile point problem.

We urge you to implement the proposed engineering solution as soon as possible and we offer support in that effort. Many current and future jobs are at stake that impact the economy of the Jacksonville region.

Jerry

Jerry Mallot

President

JAXUSA Partnership

Office (904) 366-6654

Cell (904) 349-0632

www.expandinjax.com <http://www.expandinjax.com/>

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Email Sig

Stodola, Paul E SAJ

From: margieearetz@gmail.com on behalf of Margie Seaman [margie@sellersrealtygroup.com]
Sent: Wednesday, August 17, 2011 10:21 PM
To: Stodola, Paul E SAJ
Subject: URGENT request on behalf of Jacksonville's 13%+ unemployed

Dear Mr. Stodola,

As a business owner and member of the Jacksonville Chamber of Commerce, as well as a highly active member of the civic and social community in which we reside, I am a great fan of our deeply troubled city, and find myself increasingly confounded by its growing unemployment rate, as well as manageable obstacles to its recovery. Therefore, I am writing you to ask that you take a pivotal role in regards to both the future of our city, and the present unemployment rate and ask that you please urge the U.S. Army Corps of Engineers to embrace recommendations promulgated to Congress in the Chief of Engineer's report in February 2012 regarding the critical navigational hazard at Mile Point.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits will not only positively impact our region of 1.5 million people, but also the entire state of Florida.

As you are well aware, the current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I foresee palpable economic development opportunities in Northeast Florida that will emerge from the repair of Mile Point and its restrictions are eliminated. Let's avail ourselves of every measure that we can affect to improve a dwindling quality of life on our domestic soil!

Thank you.

Sincerely,

Margie Seaman

Stodola, Paul E SAJ

From: Jim Robinson [jmr.pe@comcast.net]
Sent: Wednesday, August 17, 2011 10:20 PM
To: Stodola, Paul E SAJ
Subject: Mile Point Problem

Dear Mr. Stodola,

As a 31-year resident of Jacksonville and a member of the business community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida and beyond. It is important to note that some 60% of the nation's population is within a 2-day drive time from Jacksonville making it a port of national significance.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Jim Robinson

--
James M. Robinson, P.E.
2946 Dupont Avenue
Jacksonville, FL 32217

904-472-4922 cell

Stodola, Paul E SAJ

From: Ivan and Tia Colao [tcolao@bellsouth.net]
Sent: Wednesday, August 17, 2011 9:58 PM
To: Stodola, Paul E SAJ
Subject: Navigational hazard at Mile Point

Dear Mr. Stodola,
I am a residence of Jacksonville and I am writing you to ask that the U.S. Army Corps of Engineers focus their efforts on coming up with a solution the the navigational hazard at Mile Point, so as to be able to submit their recommendations to congress in February 2012. We need your help the eliminate the restrictions and constraints the obstacle presents to new and existing business in the private and public ports. Northeast Florida and the entire state of Florida thanks you for your prompt attention to this urgent matter.
Sincerely,
Tia A. Colao

Stodola, Paul E SAJ

From: Martin Strohmeyer (DHL US) [Martin.Strohmeyer@dhl.com]
Sent: Wednesday, August 17, 2011 7:52 PM
To: Stodola, Paul E SAJ
Subject: US Army Corps of Engineers and Mile Point Project, Jacksonville, Florida

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Martin P. Strohmeyer
Service Center Manager JAX/PNS/MOB

DHL Express
13350 International Parkway
Suite 103
Jacksonville, FL 32218

904-779-3434 Direct
904-779-3432 General Use
904-316-8776 Cell
904-741-4322 Fax

dhl-usa.com

Stodola, Paul E SAJ

From: Mark Kane [mkane@mmihg.com]
Sent: Thursday, August 18, 2011 8:56 AM
To: Stodola, Paul E SAJ
Subject: St Johns River dreging

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Mark Kane

Mark Kane | General Manager

CROWNE PLAZA JACKSONVILLE AIRPORT | The Place to Meet

14670 Duval Road | Jacksonville, FL 32218 | p. 904.741.4404 | f. 904.741.5045

mkane@mmihg.com <mailto:bkelly@mmihg.com> | http://www.cpjacksonvilleairport.com <http://www.cpjacksonvilleairport.com/>

Stodola, Paul E SAJ

From: Memrick, Katie [Katie.Memrick@pillarhotels.com]
Sent: Thursday, August 18, 2011 8:53 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Katie Memrick

Director of Sales

Courtyard by Marriott Jacksonville Airport

Residence Inn by Marriott Jacksonville Airport

Direct Phone: 904-421-3083 Fax: 904-741-6677

1310 Airport Rd.

Jacksonville Fl 32218

Email: katie.memrick@pillarhotels.com <mailto:katie.memrick@archonhospitality.com>

www.marriott.com/jaxra

www.marriott.com/jaxca

Stodola, Paul E SAJ

From: Gloria Stephens [StephensG@etminc.com]
Sent: Thursday, August 18, 2011 8:52 AM
To: Stodola, Paul E SAJ
Subject: JaxPort

Dear Mr. Stodola,

As a member of the Jacksonville community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Thank you for your consideration of this request.

Yours sincerely,

Gloria J. Stephens
12178 Caliber Court
Jacksonville, Florida 32258

Stodola, Paul E SAJ

From: Brian Baggs [brian.t.baggs@gmail.com]
Sent: Thursday, August 18, 2011 8:50 AM
To: Stodola, Paul E SAJ
Subject: Mile Point - Northeast Florida

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Brian Baggs,

Jacksonville Resident for more than 11 years

Stodola, Paul E SAJ

From: Wade Powers [wpowers@baileypub.com]
Sent: Thursday, August 18, 2011 8:46 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region. Jaxport needs this before the panamax dredging project can begin. I understand that is a much larger endeavor but this has to happen we do anything. As you know, Jacksonville's only real job creator is her port.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated. Thank you for your hard work on this critical piece of the puzzle.

Sincerely,

W. Wade Powers
Bailey Publishing & Communications, Inc.
www.baileypub.com
904.356.2466 office
904.219.2025 cell

Stodola, Paul E SAJ

From: Amanda Tullos [Amanda.Tullos@interlinebrands.com]
Sent: Thursday, August 18, 2011 8:45 AM
To: Stodola, Paul E SAJ
Subject: FW: Urgent Action Needed - Issue Impacts Jobs

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Amanda Tullos

Duval/Jacksonville Resident

Stodola, Paul E SAJ

From: Nutter, Louis @ Jacksonville [Louis.Nutter@cbre.com]
Sent: Thursday, August 18, 2011 8:37 AM
To: Stodola, Paul E SAJ
Subject: Mile Point recommendation

Dear Mr. Stodola,

As a member of the Jacksonville community and a commercial real estate broker, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. The real estate community will benefit both in housing absorption and warehouse absorption. In turn, the retail sales will increase in the area with new jobs and more disposable income. It will have a geometrically positive effect.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Lou Nutter

Louis W. Nutter | Senior Vice President Investment Properties | Private Capital Group CB Richard Ellis
225 Water Street, Suite 110 | Jacksonville, FL 32202 T 904 630 6341 | F 904 791 8953 | C 904 716 7255 louis.nutter@cbre.com <mailto:firstname.lastname@cbre.com> |
www.cbre.com/louis.nutter <blocked::http://www.cbre.com>

Stodola, Paul E SAJ

From: DENNIS OISTACHER [doistacher@gmail.com]
Sent: Thursday, August 18, 2011 9:31 AM
To: Stodola, Paul E SAJ
Subject: Jacksonville Mile Point Solution
Attachments: Dennis Oistacher Resume.doc

Dear Mr. Stodola,

As a member of the Northeast Florida community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

It doesn't make any sense to delay this upgrade any longer. It creates a huge competitive disadvantage to the port by restricting the times ships can enter and leave. It's costly to the ship operators and drastically reduces the tonnage the port could process. The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

If this decision is delayed any further, Jacksonville will lose a substantial amount of business (and more jobs) when the Panama Canal expansion is completed in 2014.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

As someone who is currently not employed, I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Dennis Oistacher

Stodola, Paul E SAJ

From: Keith Fairchild [keith.fairchild@trcstaffing.com]
Sent: Thursday, August 18, 2011 9:30 AM
To: Stodola, Paul E SAJ
Subject: Input on Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Keith S. Fairchild, PHR, CSP
TRC Staffing Services | President
200 West Forsyth Street
Suite 1620
Jacksonville, FL 32202
keith.fairchild@trcstaffing.com
904.641.1665 | OFFICE
904.631.7862 | CELL

www.trcstaffing.com <http://www.trcstaffing.com/>

"Our Job; Your Success"

Stodola, Paul E SAJ

From: Zablan, Orlando S [BMG] [Orlando.Zablan@sprint.com]
Sent: Thursday, August 18, 2011 9:27 AM
To: Stodola, Paul E SAJ

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Orlando "Oz" Zablan
Sprint Business Solutions Account Manager
email: Orlando.zablan@Sprint.com <mailto:Orlando.zablan@Sprint.com>
Wireless: (904)-234-4785

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Stodola, Paul E SAJ

From: Kathy Chelini [Kathy.Chelini@phoenix.edu]
Sent: Thursday, August 18, 2011 9:25 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region. My family, like many others, is suffering in this economic downturn. The need for these jobs is significant and cannot be overstated.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Kathy

Katherine Chelini, CNM, MN

Campus College Chair | College of Nursing

University of Phoenix

North Florida Campus | 4500 Salisbury Rd. N | Jacksonville, FL 3221

direct 904-245-6954 | fax 480-735-3771

1

Stodola, Paul E SAJ

From: Russell Grice [RGrice@CWPOWELLINS.com]
Sent: Thursday, August 18, 2011 9:26 AM
To: Stodola, Paul E SAJ
Subject: Mile Point - Urgent

Dear Mr. Stodola,

As a member of the Northeast Florida community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Russell Grice

Russell Grice

Senior Account Executive

Cecil W. Powell & Co.

904-256-0072 - Direct Phone

904-353-5722 - FAX

rgrice@cwpowellins.com

www.cwpowellins.com <http://www.cwpowellins.com/>

Stodola, Paul E SAJ

From: Michael Rogero [m.rogerosr@comcast.net]
Sent: Thursday, August 18, 2011 9:24 AM
To: Stodola, Paul E SAJ
Subject: River Navigation

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated. Thank you.

Mike Rogero

Michael J. Rogero, CLU, CHFC

Financial Design Associates

10151 Deerwood Park Blvd

Bldg 100 Suite 300

Jacksonville, FL 32256

904-997-2370

http://financialguide.com/michael-rogero

http://www.linkedin.com/in/michaelrogerocluchfc

"As a consequence, decisions not to act that are followed by a negative outcome result in more regret than do decisions to act that lead to outcomes."

Stodola, Paul E SAJ

From: Lauren Hull [lhull@jaxcpa.com]
Sent: Thursday, August 18, 2011 9:17 AM
To: Stodola, Paul E SAJ
Subject: Support for your Mile Point solution

Dear Mr. Stodola:

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point you have worked so tirelessly on and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida. As a daughter of an engineer, I know the impact this will have on not only all of the engineering firms involved with the planning, but the execution and continued upkeep as well.

Of course as a resident of Duval county, I am concerned with keeping the St. Johns River safe for travel and clean. I think this is of highest importance to the Army Corps of Engineers as well and I know you are working with the best of the best to come up with the perfect resolution.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I appreciated the opportunities you have given to engineers thus far and look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Thank you,

lrh signature

Lauren Hull Otradovec

Stodola, Paul E SAJ

From: john.naugle@wellsfargo.com
Sent: Thursday, August 18, 2011 9:17 AM
To: Stodola, Paul E SAJ
Subject: Navigational hazard at Mile Point

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

John O. Naugle

Senior Analyst

Commercial Strategies

Wells Fargo Bank, N.A. | 225 Water St., 2nd Floor | Jacksonville, FL 32202
Tel: 904.489.3008

john.naugle@wellsfargo.com <mailto:john.naugle@wachovia.com%20>

Stodola, Paul E SAJ

From: Josh Franklin [Josh.Franklin@Pulte.com]
Sent: Thursday, August 18, 2011 9:09 AM
To: Stodola, Paul E SAJ
Subject: Mile Point - Northeast Florida

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Thanks,

PulteMortgage™

Josh Franklin, NMLS #205080

Production Manager

Pulte Mortgage LLC, NMLS #1791

Direct: (904) 217-0727

Fax: (303) 409-5166

Mobile: (904) 838-6897

Work Hours: 8:00 am- 7:00 pm EST Time

Stodola, Paul E SAJ

From: Kristen Nimnicht [Kristen.Nimnicht@latpurser.com]
Sent: Thursday, August 18, 2011 9:08 AM
To: Stodola, Paul E SAJ
Subject: Mile Point / St. Johns River

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Kristen Nimnicht

Property Manager & Leasing Agent

Lat Purser & Associates, Inc

4168 Southpoint Parkway, Suite 200

Jacksonville, FL 32216

Phone: 904-448-8007, ext. 15

Fax: 904-448-5040

kristen.nimnicht@latpurser.com <mailto:kristen.nimnicht@latpurser.com>

P Please consider the environment before printing this e-mail

Stodola, Paul E SAJ

From: Bob Hawkins [Bob@RBHawkins.net]
Sent: Thursday, August 18, 2011 9:02 AM
To: Stodola, Paul E SAJ
Subject: Mile Point

Dear Mr. Stodola,

As a member of the community, and a recent JCCI study on economic drivers for northeast Florida, I urge the Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012. We identified rectifying the Mile Point issue as the most urgent and important of all of the port related issues and opportunities.

Please make this happen urgently. Living at the beach, I see the ships lined-up off shore waiting…losing money, time and contemplating finding another port to use. I look forward to seeing Mile Point repaired and the restrictions are eliminated.

Sincerely,

Bob Hawkins

RB Hawkins Consulting, LLC

(904) 477-1484

www.RBHawkins.net <http://www.rbhawkins.net/>

Stodola, Paul E SAJ

From: Wanda Franklin [wanda@hethrealty.com]
Sent: Thursday, August 18, 2011 9:01 AM
To: Stodola, Paul E SAJ
Subject: Port Terminals

Importance: High

Dear Mr. Stodola,

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs, holding back the housing market and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of over 1 million people and the entire state of Florida.

With the amount of foreclosures and abandon homes in our community, with the added jobs these properties can be rented or sold, thus bring up property taxes and values back up.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Wanda Franklin,® RMP, MPM, PRM

President/Broker

James R. Beeler, Sr.
Acquired Consulting
427 Peregrine Ct.
Jacksonville, FL 32225
http://www.acquiredconsulting.com
904-220-9944

Dear Mr. Stodola,

As a member of the Northeast Florida community, I urge the U.S. Army Corps of Engineers to proceed, expeditiously, with producing solutions for the navigational hazard at St. Johns River Mile Point and submitting the recommendations in the February 2012 Chief of Engineer's report to Congress.

The Mile Point navigation obstacle prevents job creation and greatly inhibits economic growth for all of Northeast Florida. As an independent consultant, I strongly recommend you address this quickly. The public and private port terminals serve as a major economic catalyst with potential for far reaching benefits in trade throughout the Southeast United States. The benefits from the remedy provide a positive impact for a region of more than 1.5 million people and the entire state of Florida.

The current time restrictions affect high fuel and resource costs from ships waiting to enter the St. Johns River. Solutions stemming from the Mile Point improvement project will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to increased economic development opportunities in Northeast Florida that obviously arise after repairing Mile Point repairs and eliminating restrictions.

Sincerely,

James R. Beeler, Sr.

Stodola, Paul E SAJ

From: Bolick, Brent [BrentBolick@clearchannel.com]
Sent: Thursday, August 18, 2011 9:35 AM
To: Stodola, Paul E SAJ
Subject: St. Johns River-Mile Point

Mr. Stodola,

I strongly urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Brent Bolick
President - Jacksonville Division

Clear Channel Outdoor
11700 Central Parkway | Jacksonville, FL 32224
PH (904) 996-0446 | C (904) 545-1865 | FX (904) 997-7720 Friend us @
http://www.facebook.com/clearchanneloutdoorJAX

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Stodola, Paul E SAJ

From: Pat McManamon [PJM@Solutions.Sandler.com]
Sent: Thursday, August 18, 2011 9:35 AM
To: Stodola, Paul E SAJ
Subject: Urgent;Mile Point action

Dear Mr. Stodola,

As an employee in the international transportation business for 17 years and a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Your name here

Pat McManamon

8825 Perimeter Park Blvd., Suite 503
Jacksonville, FL 32216

(904)646-1900 Office
www.Solutions.Sandler.com

Vulcan
Materials Company
FLORIDA ROCK DIVISION

SCOTT L. MCCALEB
VICE PRESIDENT
CORPORATE DEVELOPMENT
FLORIDA ROCK DIVISION

155 EAST 21ST STREET
JACKSONVILLE, FLORIDA 32206
TELEPHONE: 904-355-1781
FAX: 904-355-0817
E-MAIL: mccalebs@vmcmail.com

August 18, 2011

Dear Mr. Stodola:

As a member of the community, I urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

This obstacle is preventing the creation of jobs and economic growth and must be addressed quickly. The public and private port terminals serve as a major economic catalyst. The benefits from the remedy will positively impact a region of 1.5 million people and the entire state of Florida.

The current time restrictions result in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will immediately alleviate constraints and serve as a catalyst to create 3,500 new jobs in our region.

I look forward to the economic development opportunities in Northeast Florida that will arise after Mile Point is repaired and restrictions are eliminated.

Sincerely,

Scott L. McCaleb
Vice President Business Development
Florida Rock Division

SLM/jc

JCCI Citizens building a better community

August 18, 2011

CHAIR
William C. Mason

CHAIR-ELECT
John Hirabayashi

SECRETARY/TREASURER
Allison Korman Shelton

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Ronald E. Natherson Jr.
Stephen Pollan
Wade Rice
Mario Rubio
Derrick Smith
Susan B. Towler

PRESIDENT & CEO
Charles R. "Skip" Cramer

Mr. Paul Stodola
U.S. Army Corps of Engineers, Jacksonville Division
701 San Marco Blvd.
Jacksonville, FL 32207

Dear Mr. Stodola,

On behalf of Jacksonville Community Council Inc (JCCI) and the more than 100 concerned volunteer citizens who are participating in our three-year, seven-county regional Recession Recovery & Beyond project, we urge you to proceed with the proposed solution to the navigational hazard at Mile Point and to submit such a recommendation to Congress in the Chief of Engineers Report in February 2012.

JCCI, created in 1975, is a non-profit, non-partisan civic organization that involves citizens of Northeast Florida in community issues through open dialogue and impartial research to improve the quality of life in our region. Hundreds of this community's most prominent civic leaders and business persons are involved in our organization's work.

Following an exhaustive eight-month study on the impact of the Great Recession on our region and how to get people back to work, we concluded that expansion of shipping business at Jacksonville Port Authority (JAXPORT) represents the single largest job creation opportunity in Northeast Florida in the near future.

As you know, the navigational hazard at Mile Point severely limits the amount of time each day that ships can enter the St. Johns River, resulting, at best, in high fuel and resource costs for ships waiting in the Atlantic Ocean. Some shipping companies simply bypass JAXPORT altogether to avoid this problem. It is critical that a remedy be expedited so that ships can operate more efficiently and cost effectively.

Our primary concern is job creation and economic growth, both of which will be significantly enhanced throughout our region by a prompt solution to the Mile Point issue. JAXPORT estimates that a Mile Point remedy will immediately allow creation of 3,500 new jobs. Beyond that, it will also be the first important step in preparing JAXPORT to become post-Panamax ready which could result in thousands more new jobs by the end of the current decade.

A successful solution to this issue is critical to the future of Jacksonville and Northeast Florida. The importance to our region of the recommendation of the U.S. Army Corps of Engineers to Congress cannot be overstated.

Thank you for your consideration.

William C. Mason
Chairman of the Board

CC: Colonel Alfred A. Pantano, Jr., District Commander
Phillip Spinning, Environmental Branch

Stodola, Paul E SAJ

From: James.Main@hklaw.com
Sent: Thursday, August 18, 2011 9:56 AM
To: Stodola, Paul E SAJ
Subject: Mile Point Solution

Dear Mr. Stodola,

As an owner of an expanding trucking business with a terminal serving the Port of Jacksonville and a member of the community, please recommend a solution to the navigational hazard at Mile Point and submit the recommendation to Congress as soon as possible. This obstacle is preventing our business from adding additional jobs and impeding economic growth in the region.

A remedy will immediately alleviate the constraints and permit our company to add more jobs and will serve as a catalyst to create thousands of new jobs in our region.

Sincerely,

James Main | Holland & Knight
Partner
50 North Laura Street, Suite 3900 | Jacksonville FL 32202 Phone 904.798.7319 | Fax 904.358.1872 james.main@hklaw.com <mailto:james.main@hklaw.com> | www.hklaw.com <http://www.hklaw.com/>

Add to address book <http://www.hklaw.com/vcard.aspx?user=JMAIN> | View professional biography <http://www.hklaw.com/id77/biosJMAIN>

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NOTE: This e-mail is from a law firm, Holland & Knight LLP ("H&K"), and is intended solely for the use of the individual(s) to whom it is addressed. If you believe you received this e-

Stodola, Paul E SAJ

From: Conner, Karen [Karen.Conner@saftbatteries.com]
Sent: Thursday, August 18, 2011 9:54 AM
To: Stodola, Paul E SAJ
Cc: Denoncourt, Peter; Miller, Dan
Subject: Navigational hazard at Mile Point.

Dear Mr. Stodola,

Saft has just completed the construction of our new production facility located at Cecil Field. When completed, this facility will be a world leader in high volume production of LiION cells and batteries.

I believe that part of our nation's recovery from the current recession lies in our innovation, quality, and speed to market of our products at the lowest possible cost. The ability to minimize transport time and cost plays an important part. For Saft and other businesses in our area, the ability to utilize a local port for transport is one of the keys to being successful in the world's highly competitive market.

The navigational hazard at Mile Point causes time restrictions resulting in high fuel and resource costs from ships waiting to enter the St. Johns River. A remedy will reduce these costs and provide greater flexibility in shipping schedules and frequency making this port attractive for use for both inbound and outbound freight.

It will bring a positive economic impact to the region and serve as a catalyst for job creation.

Therefore, we urge the U.S. Army Corps of Engineers to proceed with the solution to the navigational hazard at Mile Point and submit the recommendation to Congress in the Chief of Engineer's report in February 2012.

Sincerely,

Karen Conner

Supply Chain Manager

Stodola, Paul E SAJ

From: Skip Cramer [Skip@jcci.org]
Sent: Thursday, August 18, 2011 9:39 AM
To: Stodola, Paul E SAJ
Cc: Spinning, Jason J SAJ
Subject: St. Johns River Mile Point Remedy
Attachments: USACE Mile Point - JCCI.pdf

Dear Mr. Stodola,

Attached is a letter from the Chairman of the Board of Jacksonville Community Council, Inc. (JCCI), strongly supporting a rapid resolution to the impediment to maritime commerce that exists as a result of the St. Johns River Mile Point problem.

JCCI recently completed a 7-county regional study on recession recovery and beyond that included site visits and inputs from citizens, economic development experts and the political leadership of Baker, Clay, Duval, Flagler, Nassau, Putnam and St. Johns counties. Our study process is unique in that it is community-based, requires full consensus on its findings, conclusions and recommendations, and includes a two-year advocacy phase to see study recommendations implemented. There was full consensus of the Recession Recovery & Beyond Study Committee on the importance of addressing Mile Point and the additional actions required for the Port of Jacksonville to accommodate Post-Panamax shipping. A copy of the full study report is available by clicking here <http://www.jcci.org/jcciwebsite/documents/Recession%20Recovery%20and%20Beyond%20Study%20Report-FINAL.pdf> .

Should you have any questions, please don't hesitate to contact me.

Sincerely,

Skip Cramer

Skip Cramer

President & CEO

JCCI-Jacksonville Community Council Inc.

2434 Atlantic Blvd.

Jacksonville, FL 32207

904.396.3052 office

U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970
Jacksonville, FL 32232-0019
Attn: Paul Stodola (US ACE-PD-EC)
RE: Mile Point Training Wall Project
August 17, 2011

Mr. Paul Stodola,

As a resident and owner of property on Mudflats Creek I implore you to incorporate long term monitoring and maintenance of the New Flow Improvement Channel for Chicopit Bay into the final plan for the Mile Point Training Wall Project.

As with most of the neighbors I have spoken with about this matter, I understand the overall need for this project. We are more or less in support of the plan that has been chosen. Our main concern is that should the flow improvement channel fail to remain open in the future it will leave all the residents of the Mt. Pleasant /Greenfield Creek system landlocked. This would have a significantly detrimental impact on our quality of life and our ability to enjoy our properties. The economic damage to our property values would be enormous. Please give us due consideration.

Also, we are concerned about our access to the IWW and the St. John's River during the construction process. I urge you to stipulate in the project specifications that there be provisions for navigable passage from Mt. Pleasant Creek to and from the St. John's River during the entire time span of the work.

Thank you,

Dan Arvin
2240 Ivylgail Dr. W.
Jacksonville, FL 32225

cc: Lake Ray, Clay Yarborough, Gov.Rick Scott, Ander Crenshaw, Bill Nelson, Mario Rubio

Stodola, Paul E SAJ

From:	John Kinstle [kinstlej@bellsouth.net]
Sent:	Friday, August 19, 2011 8:32 AM
To:	Glo Scurry-Smith; Gregory Williams; Stodola, Paul E SAJ; Ross, Steven R SAJ
Cc:	Frank Gregg; Andy Graham; Dave Johnson; doughicks@comcast.net; Duke Lewis; J Lowman; Jerry Holland; Joe Kinstle; joella_frith@bellsouth.net; JoeNjudyL@aol.com; Kinstle Teresa; LogosMan@aol.com; narming@ju.edu; pamsgt@hotmail.com; Paul Paffe; reams@comcast.net; sspradlin@comcast.net; TmanerA2000@yahoo.com; upthecreek2 @comcast.net; Jerry Holland
Subject:	Jacksonville Harbor Navigation Study - Mile point

Hello. It was nice meeting some of you at the public meeting on the Milepoint Study on August 15, 2011. First off, I think the proposed project has considerable merit, and is solely needed for the safety and economic benefit of the St Johns River. I do however have a few comments/concerns that I would like your help on concerning this Study.

1. The Milepoint Study talks a little about the need for a Flow Improvement Channel to flush Chicopit Bay, but fails to give much thought or study to a significant potion of the Timucuan Preserve, namely Greenfield Creek and Mt Pleasant Creek. The proposed project is closing off the entrance and exit of these creeks and opening up a new flow improvement channel as the only access point to these creeks. It is imperative that this flow improvement channel be maintained, not only to flush out Chicopit Bay, but also to flush out Mt Pleasant and Greenfield Creeks. Otherwise, this project will have a significant ecological impact on a large portion of the Timucuan Preserve. The proposed project has a one time dredging of the Flow Improvement Channel, but no plans to monitor, or maintain, the flow in this channel. It is imperative for the ecological health of the Timicuan Preserve that this aspect of the project is not ignored, and that funds are set aside for monitoring and periodic dredging of this channel, as required

2. This project proposes appears to be missing the impact of closing off the entrance and exit of two of Florida's significant navigable creeks in the Jacksonville area (i.e. Mt Pleasant Creek and Greenfield Creek). I don't know if the Army Corps has ever made a determination on whether these creeks are navigable per CFR 33 Part 329. If not, please do so. In the meantime, these creeks definitely meet the definition of a Florida navigable waterway, and since this federal project is closing off the mouths of these creeks, the State of Florida should require that this project not only have an alternate entrance and exit to these creeks, but will maintain these entrances, long term, as a continuing portion of the funding for this project.

Sincerely.

John C. Kinstle
1123 Girvin Road
Jacksonville, Fl 32225

Stodola, Paul E SAJ

From: John Kinstle [kinstlej@bellsouth.net]
Sent: Friday, August 19, 2011 1:40 PM
To: Scurry-Smith, Glo; Williams, Gregory; Stodola, Paul E SAJ; Ross, Steven R SAJ
Cc: Andy Graham; Dave Johnson; doughicks@comcast.net; Duke Lewis; J Lowman; Jerry Holland; Joe Kinstle; joella_frith@bellsouth.net; JoeNjudyL@aol.com; Kinstle Teresa; LogosMan@aol.com; narming@ju.edu; pamsgt@hotmail.com; Paul Paffe; reams@comcast.net; sspradlin@comcast.net; TmanerA2000@yahoo.com; upthecreek2@comcast.net; Frank Gregg; Jerry Holland
Subject: Re: Jacksonville Harbor Navigation Study - Mile point

Ms Scurry-Smith,

Thank you for your response. I'm asking for a little more than that. Since the Army Corps of Engineers is proposing by this project to cut off State navigable waters and to significantly impact State and Federal waters from an ecological standpoint, I'm asking for your active role in ensuring that the Army Corps of Engineers make plans for monitoring, and if required, dredging the proposed Flow Improvement Channel proposed by this project. Otherwise, I'm asking the State to oppose this project until the project formally addresses these concerns in the legislation for this project. I'm sure your office holds more sway than myself in ensuring these concerns are addressed.

John Kinstle
Owner, John Kinstle Construction Company, LLC Certified General Contractor
GCC1513651
904-220-5474 Home/Business
Web Address http://www.nfcontractor.com/
904-536-8074 Cell
904-221-3567 Fax

From: Scurry-Smith, Glo <mailto:Glo.Scurry-Smith@eog.myflorida.com>
Sent: Friday, August 19, 2011 9:54 AM
To: John Kinstle <mailto:kinstlej@bellsouth.net> ; Williams, Gregory <mailto:Gregory.Williams@eog.myflorida.com> ; Paul Stodola <mailto:Paul.E.Stodola@usace.army.mil> ; Steven.R.Ross@usace.army.mil
Subject: RE: Jacksonville Harbor Navigation Study - Mile point

Mr. Kinstle,

Thank you for your message. It was a pleasure meeting you as well. I'm confident that your comments and concerns will be reviewed by the Army Corp of Engineers.

Sincerely, Glo

Gloreatha (Glo) Scurry-Smith, MBA

Program Analyst

Office of Lieutenant Governor Jennifer Carroll

St. John's River State College

283 College Drive, Rm H1115

Orange Park, FL 32065

Main: (904) 276-6883 / Fax: (904) 276-6881

Glo.Scurry-Smith@eog.myflorida.com

Description: FB.jpg <http://www.facebook.com/JenniferCarroll4FL>

From: John Kinstle [mailto:kinstlej@bellsouth.net]
Sent: Friday, August 19, 2011 8:32 AM
To: Scurry-Smith, Glo; Williams, Gregory; Paul Stodola; Steven.R.Ross@usace.army.mil
Cc: Frank Gregg; Andy Graham; Dave Johnson; doughicks@comcast.net; Duke Lewis; J Lowman; Jerry Holland; Joe Kinstle; joella_frith@bellsouth.net; JoeNjudyL@aol.com; Kinstle Teresa; LogosMan@aol.com; narming@ju.edu; pamsgt@hotmail.com; Paul Paffe; reams@comcast.net; sspradlin@comcast.net; TmanerA2000@yahoo.com; upthecreek2@comcast.net; Jerry Holland
Subject: Jacksonville Harbor Navigation Study - Mile point

Hello. It was nice meeting some of you at the public meeting on the Milepoint Study on August 15, 2011. First off, I think the proposed project has considerable merit, and is solely needed for the safety and economic benefit of the St Johns River. I do however have a few comments/concerns that I would like your help on concerning this Study.

1. The Milepoint Study talks a little about the need for a Flow Improvement Channel to flush Chicopit Bay, but fails to give much thought or study to a significant potion of the Timucuan Preserve, namely Greenfield Creek and Mt Pleasant Creek. The proposed project is closing off the entrance and exit of these creeks and opening up a new flow improvement channel as the only access point to these creeks. It is imperative that this flow improvement channel be maintained, not only to flush out Chicopit Bay, but also to flush out Mt Pleasant and Greenfield Creeks. Otherwise, this project will have a significant ecological impact on a large portion of the Timucuan Preserve. The proposed project has a one time dredging of the Flow Improvement Channel, but no plans to monitor, or maintain, the flow in this channel. It is imperative for the ecological health of the Timicuan Preserve that this aspect of the project is not ignored, and that funds are set aside for monitoring and periodic dredging of this channel, as required

2. This project proposes appears to be missing the impact of closing off the entrance and exit of two of Florida's significant navigable creeks in the Jacksonville area (i.e. Mt Pleasant Creek and Greenfield Creek). I don't know if the Army Corps has ever made a determination on whether these creeks are navigable per CFR 33 Part 329. If not, please do so. In the meantime, these creeks definitely meet the definition of a Florida navigable waterway, and since this federal project is closing off the mouths of these creeks, the State of Florida should require that this project not only have an alternate entrance and exit to

these creeks, but will maintain these entrances, long term, as a continuing portion of the funding for this project.

Sincerely.

John C. Kinstle

1123 Girvin Road

Jacksonville, Fl 32225

Stodola, Paul E SAJ

From: andy.graham@kuhnflowers.com
Sent: Thursday, August 18, 2011 10:40 AM
To: chris.quinn@myjaxchamber.com
Cc: Stodola, Paul E SAJ
Subject: Mile Point Project concerns

Good morning Chris. This morning I received a forwarded copy of the email you sent out requesting that Chamber members contact the Corps of Engineers in support of the Milepoint Project. I'd like you to know upfront that my family and I are in full support of the project, and realize the potential positive economic impact this project could provide for Jacksonville.....and Lord knows we need it.

Although I support this project, I also have concerns about the project as a property owner who resides on Greenfield Creek. As you may know, the project includes plans for a new access channel for the Greenfield / Mt Pleasant Creeks and the Spanish Point area. The plan provides for no maintenance of the channel after the construction and dredging have been completed. The area that the channel is proposed for was formerly the access channel for our waterways. However, it filled in over the years, so there is a history of silting for this area.

Currently we have a channel that allows us access to the Intracoastal Waterway at all hours of the day regardless of the tide. The stated depth of the new channel is 6ft. Our average tidal change in this area is 4.5 - 5ft. During new moon periods in the Fall and Spring seasons we experience tidal movement of more than 6ft, which raises some access questions for me. As waterfront residents, we'd like some assurance that we will not be faced with extended periods of inaccessability during construction. As of yet the Corps has not been able to give us this assurance.

Our requests, as affected residents, are simple -- we'd like to respectfully request that language be written into the project that would require maintenance of the access channel be the responsibility of the Corps of Engineers for the life of the channel going forward.

Again Chris, I offer my support for the Milepoint Project, but as it's written right now, there is the real potential for these waterfront residents, like myself, to be left with an enormous dredging bill that we could never reasonably afford.

Thanks for your time this morning. I'd look forward to hearing your thoughts on these issues.

Sincerely,

Andy Graham
1501 Girvin Rd
Jacksonville, FL 32225
(904)349-6013

Stodola, Paul E SAJ

From:	andy.graham@kuhnflowers.com
Sent:	Friday, August 19, 2011 1:51 PM
To:	John Kinstle
Cc:	Scurry-Smith, Glo; Williams, Gregory; Stodola, Paul E SAJ; Ross, Steven R SAJ; Dave Johnson; doughicks@comcast.net; Duke Lewis; J Lowman; Jerry Holland; Joe Kinstle; joella_frith@bellsouth.net; JoeNjudyL@aol.com; Kinstle Teresa; LogosMan@aol.com; narming@ju.edu; pamsgt@hotmail.com; Paul Paffe; reams@comcast.net; sspradlin@comcast.net; TmanerA2000@yahoo.com; upthecreek2@comcast.net; Frank Gregg
Subject:	Re: Jacksonville Harbor Navigation Study - Mile point

Ms Scurry-Smith :

I, like Mr Kinstle, reside on Greenfield Creek and have concerns about the proposed new channel. I would like to join in John's request for the State to take an active role in looking out for our best interests as residents with regard to the proposed construction and maintenance of the new access channel.

Thank you for your time.

Andy Graham
1501 Girvin Rd

On Fri, 19 Aug 2011 13:40:04 -0400, John Kinstle wrote:
> Ms Scurry-Smith,
>
> Thank you for your response. I'm asking for a little more than that.
> Since the Army Corps of Engineers is proposing by this project to cut
> off State navigable waters and to significantly impact State and
> Federal waters from an ecological standpoint, I'm sure your office
> holds more sway than myself in ensuring these concerns are addressed.
>
> John Kinstle
> Owner, John Kinstle Construction Company, LLC Certified General
> Contractor
> GCC1513651
> 904-220-5474 Home/Business
> Web Address http://www.nfcontractor.com/
> 904-536-8074 Cell
> 904-221-3567 Fax
>
> Friday, August 19, 2011 9:54 AM
> ; ; ;
> RE: Jacksonville Harbor Navigation Study - Mile point
>
> Mr. Kinstle,
>
> Thank you for your message. It was a pleasure meeting you as well.
> I'm confident that your comments and concerns will be reviewed by the
> Army Corp of Engineers.
>
> Sincerely, Glo

Stodola, Paul E SAJ

Subject: FW: Mile Point Study (UNCLASSIFIED)

-----Original Message-----
From: bobhoughton [mailto:bobhoughton@bellsouth.net]
Sent: Friday, August 05, 2011 1:22 PM
To: Ross, Steven R SAJ
Cc: Nelson Eason
Subject: Mile Point Study.

I live on Mt.Pleasant Creek, so have a vested interest to changes you propose to Mile Point, and the breach in Great Marsh Island. The breach occured when the Mile Point training wall failed, allowing water to come at Gteat Marsh Island directly from a NorthEast direction. This caused the entire South side behind Great Marsh Island to fill in with sand, mostly washed away from the East bank of Great Marsh Island. Today the best deepest water we have to exit Chicopit Creek is through the South end of the breach, as the Southside of the island is not navigatible, even at high tide. The Corps proposal to close the breach, and dig,(BUT NOT MAINTAIN,) a channel through the sand that has filled Chicopit Bay does not seem to be a solution that will work. The huge volumn of sand that has filled the bay will only fill the channel, leaving us no exit from our homes to the maintained navigational systems. Previous "Model Failures", most notibly the Mill Cove "Model", that determined that removing the training walls and digging a channel through this previously pristine waterway would restore the waterway to its previous deep water.
Today, more that 10 years later, the challel has disappeared, and Mill Cove remains a mudhole! I would think a more pratical solution for Chicopit Bay would be to use the natural breach channel as a guide, and build your wetlands with a bulkheaded channel where nature told you to build it. The filling in on each side of the Natural Channel would force water flow through that area, keeping it deep. The digging of an unnatural channel through a bay now filled with shifting sand will not work, as it will fill in as fast as you did it. Unless you plan to maintain it, don't dig a channel where 'Mother Nature" tells you she does not want it.

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: NONE

US Army Corps of Engineers. Jacksonville District

Comments/ Questions

See Privacy Act Statement on reverse side

EVENT: Jacksonville Harbor Mile Point Navigation Study

DATE: August 15, 2011

☐ Check box if you would like to make a statement

MAIL TO: U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970, Jacksonville, FL 32232-0019
ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

As a citizen of Spanish Point, I am greatly concerned about our continued ability to navigate out of Chicopit Bay! Please do not forget that we as taxpayers purchased waterfront property to enjoy it.

Mr. Houghton's suggestion that the New 4250 Western Wall have a break in it that allows for continued water flow into Chicopit is well worth considering!

Jean Cavender
NAME AND TITLE (PLEASE PRINT)

MAILING ADDRESS

CITY STATE ZIP CODE

PHONE NUMBER

Cave1985@bellsouth.net
EMAIL ADDRESS

US Army Corps of Engineers, Jacksonville District

Comments/ Questions

See Privacy Act Statement on reverse side

EVENT: Jacksonville Harbor Mile Point Navigation Study

DATE: August 15, 2011

☑ Check box if you would like to make a statement

MAIL TO: U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970, Jacksonville, FL 32232-0019
ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

1. The Flow Improvement Channel will be dredged to 6' deep. Is that 6' MLW?

2. What plans are there for future dredging of the Flow Improvement Channel if it starts shoaling?

3. What is being done to maintain access to Mt Pleasant Creek and Greenfield Creek during construction?

John Kinstle
NAME AND TITLE (PLEASE PRINT)
1123 Girvin Road
MAILING ADDRESS
Jacksonville FL 32225
CITY STATE ZIP CODE
904-220-5474
PHONE NUMBER
kinstlej@bellsouth.net
EMAIL ADDRESS

US Army Corps of Engineers.
Jacksonville District

Comments/ Questions

See Privacy Act Statement on reverse side

EVENT: Jacksonville Harbor Mile Point Navigation Study
DATE: August 15, 2011

☐ Check box if you would like to make a statement

MAIL TO: U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970, Jacksonville, FL 32232-0019
ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

1- According to your current charts, the new plan shows less water movement or current in Chicopit Bay. This would cause more silting than present. Can the improvement channel be forked behind the new created marsh so one channel would continue toward the NW to connect to the other 2 creeks near Buck Island that would increase more water flow?

2- What is "high marsh" elevation and high would the created marsh be in the Chicopit Bay area NW of Great Marsh Island?

Eileen Regnier
NAME AND TITLE (PLEASE PRINT)
1903 Tomes Drive
MAILING ADDRESS
Jax FL 32225
CITY STATE ZIP CODE
PHONE NUMBER
Eileen@envirstareimage.com
EMAIL ADDRESS

US Army Corps of Engineers.
Jacksonville District

Comments/ Questions

See Privacy Act Statement on reverse side

EVENT: Jacksonville Harbor Mile Point Navigation Study

DATE: August 15, 2011

☐ Check box if you would like to make a statement

MAIL TO: U.S. Army Corps of Engineers, Jacksonville District
P.O. Box 4970, Jacksonville, FL 32232-0019
ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

What Assurance can you give us your New Flow improvement channel will remain deep enough for the property owners on my pleasant creek & chicopit bay to get into the ICW?

Nelson Eason (home owner)
NAME AND TITLE (PLEASE PRINT)

1965 Ivy Gail Dr E.
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COMMENTS/QUESTIONS

THANK YOU USACE
FOR YOUR HARD
WORK!

Paul Anderson

Paul Anderson
NAME AND TITLE (PLEASE PRINT)

MAILING ADDRESS

CITY STATE ZIP CODE

904 357-3035
PHONE NUMBER

PAUL.ANDERSON@TAXPORT.CO
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COMMENTS/QUESTIONS

Does Phase I (relocating jetties) and Phase II (restoring Great Marsh Island) have the same funding and priority? Is it possible Phase I would be done w/o Phase II?

Eileen Regnier
NAME AND TITLE (PLEASE PRINT)

MAILING ADDRESS

CITY STATE ZIP CODE

PHONE NUMBER

EMAIL ADDRESS

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COMMENTS/QUESTIONS Why is Great Marsh Island being used as a disposal site for dredge spoils?

Why is no Retaining wall proposed for the South side of Great Marsh island?

Brian Durden
NAME AND TITLE (PLEASE PRINT)

MAILING ADDRESS

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Jax FL 32225

PHONE NUMBER

B. Durden @ Comcast . net
EMAIL ADDRESS

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Jacksonville District

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ATTN: Paul Stodola (USACE-PD-EC)

All comments are due by August 22, 2011.

COMMENTS/QUESTIONS

I am the American Institute of Marine Underwriters (AIMU.Com) Correspondent for the Port of Jacksonville and I am sending all the information received to the organization

I would appreciate being kept advised of all updates and/or changes

All the best

GTS
Crawford Global Technical Services

Captain Roger Parry
NAMS, CMS
Senior Marine Surveyor

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Stodola, Paul E SAJ

From: Brenda Conner [jaxbsc@bellsouth.net]
Sent: Thursday, August 18, 2011 10:16 AM
To: Stodola, Paul E SAJ
Subject: Question about Mile Point / St. Johns River / Jacksonville

I've been seeing a lot of information supporting the solution on the table to the navigational hazard at Mile Point, but I haven't seen any of the arguments against it. It seems reasonable to assume that there are two sides to this issue. Can you give me any information about the arguments against the current proposal? If you are not in a position to do so, can you recommend any other resources where I might find out more about this?

Thank you very much.

Brenda S. Conner
1624 East Road
Jacksonville, FL 32216
(904) 725-7346