MEMORANDUM FOR Commander, U.S. Army Corps of Engineers, South Atlantic Division,
ATTN: CESAD-PDS/Paynes

SUBJECT: Transmittal of Initial Appraisal for Continued Federal Participation, Wilmington
Harbor, Inner Ocean Bar Portion, North Carolina (Section 216)

1. Subject document is enclosed for your review and approval.

2. Timely review and approval is requested to meet the requirement for a potential congressional
add in FY 2011 based on receipt of Member’s requests for the initiation and completion of a
Reconnaissance Study and initiation of a Feasibility Study.

3. If you have any questions or need additional information, please contact the Project Manager,
Bob Keistler, at (910) 251-4709.

Christine M. Brayman
Deputy for Programs and Project Management
Wilmington Harbor
Initial Appraisal
Conducted under Section 216 of
the Flood Control Act of 1970, as amended

Wilmington District
July 2, 2010
INITIAL APPRAISAL
WILMINGTON HARBOR, NORTH CAROLINA (Section 216)
BRUNSWICK AND NEW HANOVER COUNTIES, NORTH CAROLINA

1.0 PROJECT

It is a general policy of the Chief of Engineers that completed Corps projects be observed and monitored by the Corps to ascertain whether they continue to function in a satisfactory manner and whether potential exists for better serving the public interest. Existing project operation and maintenance activities, coordination with users and stakeholders, and coordination with the US Coast Guard provide the impetus for studying requested changes to the existing Wilmington Harbor, North Carolina project. This Initial Appraisal represents the product of such information and coordination.

2.0 STUDY AUTHORITY

This Initial Appraisal is authorized by Section 216 of the Flood Control Act of 1970 (33 USC 426 et seq) as amended, which reads:

"The Secretary of the Army, acting through the Chief of Engineers, is authorized to review the operation of projects the construction of which has been completed and which were constructed by the Corps of Engineers in the interest of navigation, flood control, water supply, and related purposes, when found advisable due to significantly changed physical or economic conditions, and to report thereon to Congress with recommendations on the advisability of modifying the structures or their operation, and for improving the quality of the environment in the overall public interest."

The Section 216 process starts with the preparation of an Initial Appraisal. This Initial Appraisal report has been prepared using FY10 Operations and Maintenance funds and its cost was limited to $20,000.
3.0 EXISTING AUTHORIZED PROJECT

a. **Name of Completed Project:** Wilmington Harbor, North Carolina.

b. **Name of this Project:** Wilmington Harbor, North Carolina (Section 216).

c. **Date Constructed:** Deepening of the Wilmington Harbor, NC project to 42-feet, up to the North Carolina State Port’s docks, was completed in 2004 by the U.S. Army Corps of Engineers, Wilmington District, and the state of North Carolina.

d. **Authorized Purpose:** Constructed under authority of the Water Resources Development Act of 1996, the purpose of the project is to provide deep-draft navigation for the Port of Wilmington and portions of the Cape Fear and Northeast Cape Fear Rivers.

e. **Non-Federal Project Sponsor:** The State of North Carolina.

f. **Project Location and Description:** The existing project (see Figure 2) is located on the southeastern coast of North Carolina in Brunswick and New Hanover counties and provides for a channel, 44 feet deep through the Ocean Bar and 42 feet deep to the upper end of the Anchorage Basin at Wilmington. Upstream of this point, the project is 38 feet deep to the Highway 133 bridge; 32 feet deep to the Hilton Bridge over the Northeast Cape Fear River; and 25 feet deep from the Hilton Bridge to a point 1-1/3 miles above. The project also includes a northwestward connecting channel, 12 feet deep, from the Atlantic Intracoastal Waterway at Snow’s Cut to the main river channel. The channel is 400-feet wide except for 6.2 miles of the Lower and Upper Midnights and Lower Lilliput reaches which are 66-feet wide. Five turns and bends have been widened by 100 to 200 feet, providing a total average channel width of 500 to 675 feet. The Fourth East Jetty Channel has been widened to 500 feet over 1.5 miles.

The channels of Wilmington Harbor under review as part of this Initial Appraisal are only a small portion of the overall Wilmington Harbor project and are shown in Figure 1. They are located on the Cape Fear River in New Hanover and Brunswick Counties, North Carolina.

Features yet to be completed, subject to the availability of funds and the identification of benefits to more than a single user upriver of the Memorial Bridge, include deepening the remaining anchorage basin immediately upriver from the State Ports Authority dock from 38 feet to 42 feet, deepening the 32-foot channel between the Castle Street and the Hilton Railroad Bridges to 38 feet, deepening the 32-foot turning basin just above the mouth of the Northeast Cape Fear River on the west side to 38 feet, deepening the 25-foot channel from the Hilton Railroad Bridge to 750 feet upstream to a depth of 38 feet, and deepening the 25-foot channel from 750 feet upstream of the Hilton Railroad Bridge to the turning basin near the upstream limits of the project to 34 feet. And finally, the widening of the 34 foot channel
from 200 to 250 feet as well as the widening the turning basin from 700 to 800 feet and deepening the turning basin from 25 feet to 34 feet.

Figure 1. Wilmington Harbor Channel and highlighted areas identifying channel reaches reviewed under Section 216 authority.

Improvement to the Eagle Island dredged material disposal facility is underway by incrementally raising the dikes of its three cells. Mitigation requirements for the previously completed Wilmington Harbor Improvements are partially complete with the acquisition of, by fee title, 30 acres of upland areas and construction of an embayment. Yet to be completed is the acquisition of about 800 acres of existing wetlands and upland areas for preservation of habitat to offset losses of wetlands and primary nursery areas. This acquisition is underway, should be complete in FY 2011, and is the responsibility of the non-Federal sponsor (state of North Carolina). The fish passage at Lock and Dam 1 on the Cape Fear River needs to be constructed as mitigation for the deepening already accomplished. Construction is scheduled to begin in FY 2011.
Eagle Island

Wilmington

State Ports

Disposal Island #10

Disposal Island #8

Military Ocean Terminal at Sunny Point
4.0 STUDY PURPOSE, PROCESS, AND SCOPE

The purpose of this Initial Appraisal is to determine if there is potential Federal interest to undertake modifications to the existing channel alignments of Wilmington Harbor within the Section 216 study area. The scope of this effort will be limited to two sections of the harbor that have been specifically requested by local interests for consideration. The study area has been broken into these two areas, which strictly for the purposes of this report, will be referred to as the “Bald Head Portion” (Baldhead Shoal Channel Reach 1, Baldhead Shoal Channel Reach 2, and Smith Island Channel) and the “Battery Island Portion” (Baldhead-Caswell Channel, Southport Channel, Battery Island Channel, and Lower Swash Channel). This breakdown is illustrated in Figure 1.

A review of the problems associated with the two areas of concern, the Battery Island Portion and the Bald Head Portion, will be accomplished as part of this appraisal. The Initial Appraisal report briefly reviews the adequacy of the current navigation alignments and determines the advisability of considering modifications. It is expected that modifications may lead to increased safety and improved navigability which, in turn, would be expected to decrease transit times and reduce delays, thus increasing efficiency for the current ships utilizing the channel to reach the Port of Wilmington.

Due to the limited nature of this Initial Appraisal, considerations are limited to the review of existing, readily-available information and best professional judgment. The results of this Initial Appraisal will be used to determine if potential problems exist which may warrant further planning in the second phase of the study process, the Reconnaissance Phase. Should the Initial Appraisal identify potential problems warranting further study, the District would use the report to support initiation of a reconnaissance study under the Section 216 authority. Results from the reconnaissance report would be used to determine support to initiate a cost-shared feasibility-level study effort.

5.0 PROBLEMS AND OPPORTUNITIES

5.1 “Battery Island Portion”

Turns and bends within the navigation channel have been an area of concern to vessel pilots in the Wilmington Harbor since the 38-foot project was completed in 1972. The advent of containerization shortly thereafter led to the introduction of longer and wider vessels. In response to this shift in industry standards, a study of channel widening was prepared in 1994. The finding of this report led to the widening of five turns and bends in the area between Southport and Wilmington. The report did not address the turn within the “Battery Island Portion” because it was not raised as an issue at the time.

This turn is problematic for certain container vessels under specific conditions of wind and tide. These particular vessels are being forced to delay their transit and await favorable tide conditions in order to serve the harbor. These delays are expensive and result in increased transportation costs. Certain vessels are being subject to draft restrictions as a result of this turn (see Attachment 1). Contributing factors influencing safe maneuvering of these ships through the channel include the ship handling characteristics and size, channel configuration, tide conditions, and inbound or outbound transit operation. The handling characteristics of
certain companies' container ships are less responsive than other container ships of the same class. Turning these ships is challenging due to the dimensions of the turn and the adjacent channels. Battery Island Channel is 2,589 feet long with a 30 degree, 36 minute turn angle at the southern end and a 65 degree, 3 minute turn angle at the northern end. Given the dimensions of the channel and a combined north and south turning maneuver of 95 degree, 39 minute, safely navigating these ships through the Battery Island Channel, and the turns at either end, is an extremely complex maneuver. Strong ebb and flood tidal currents significantly affect ship maneuverability. The most difficult transit of the Battery Island Channel occurs when a ship is inbound with a maximum ebb tide current. These issues have resulted in vessel delays and issues of vessel safety in serving the Port of Wilmington.

5.2 Bald Head Portion

Certain reaches of the Wilmington Harbor entrance channel were relocated as part of a Value Engineering Study, which followed the Comprehensive Study in 1997 (discussed below). This entrance channel is located in its historically close proximity to the Bald Head Island shoreline and its location has resulted in allegations of shoreline impact from Bald Head interests. The current alignment has proven susceptible to rapid and persistent shoaling theoretically attributable to a combination of natural forces and impacts from adjacent, private beach renourishment projects, and Federal shoreline disposal projects.

Increasing the distance from the edge of the Bald Head Portion of the study area to the island may potentially allow for reduced future maintenance costs, improved overall reliability and increased full channel availability. Shoaling on the Bald Head Island side of the channel and the resultant reduced width places vessels on the less advantageous side of the channel to safely navigate the bend with Smith Island Channel. Avoidance of the shoaling in Baldhead Shoal Channel Reach 1 combined with typical wind and tide conditions requires decreased vessel speeds under most conditions to navigate the resultant S-shaped useable channel. Realignment options that could be investigated may improve the design performance of the channel and to reduce both shoreline impacts and shoaling, while improving navigation safety and efficiency. The issues with this channel have been expressed by the Wilmington Cape Fear Pilots Association and the North Carolina State Ports Authority (see Attachment 2).

5.3 Opportunities

Opportunities may exist to increase the safety, while improving efficiency of vessels transiting the Battery Island Turn and the Entrance Channel. This may result in cost and time savings, potentially lowering project operations and maintenance costs, as well as potentially allowing for the removal of draft restrictions for certain vessels. Additionally, as the size of vessels utilizing the Wilmington Harbor continues to increase, the Wilmington Harbor channels become increasingly difficult to navigate for these vessels as well. Several alternatives have been postulated to improve the turn and adjacent channel reaches of these two particularly troublesome areas. The Wilmington Cape Fear Pilots Association and the North Carolina State Ports Authority support the conduct of a review of these sections of Wilmington Harbor.
6.0 REVIEW OF EXISTING STUDIES

Numerous reports have been prepared for the Wilmington Harbor since it was authorized. The reports listed below are only a partial list with a brief summary of report content. These reports found are particularly significant as they are the major study documents related to modification of the navigation project.

Wilmington Harbor, Northeast Cape Fear River, General Design Memorandum, Wilmington District, April 1990. Improvements recommended in this design memorandum were authorized by the Water Resources Development Act of 1986 (P.L. 99-662). The General Design Memorandum recommended widening the Fourth East Jetty Channel on the Cape Fear River from its existing width of 400 feet to 500 feet, and deepening a portion of the project on the Northeast Cape Fear River from its existing depths of 32 and 25 feet to 38 feet and 34 feet.

Wilmington Harbor Ocean Bar – General Design Memorandum, Supplement and Environmental Assessment, Wilmington District, September 1993. This report recommended removal of rock in the Wilmington Harbor Ocean Bar (Baldhead Shoal) Channel. The authorized, 40-foot depth was not achieved at the time of project construction (1973).

Wilmington Harbor Channel Widening, Interim Feasibility Report and Environmental Impact Statement on Improvement of Navigation, Wilmington District, March 1994. Improvements recommended in this Feasibility Report are the widening of 5 turns and bends and the construction of a 6.2 mile Passing Lane between the docks at Wilmington and the mouth of the Cape Fear River. These improvements were constructed separately. The widening of the five turns and bends was constructed in conjunction with the Wilmington Harbor 96-Act project deepening of the Wilmington Harbor, NC project to 42-feet up to the North Carolina State Port Authority’s dock, which was completed in 2004. The Passing Lane was constructed separately and was completed in 2006. The project was designed to reduce vessel delays and improve transit times in the harbor.

Final Feasibility Report and Environmental Impact Statement on Improvement of Navigation, Cape Fear – Northeast Cape Fear Rivers Comprehensive Study, Wilmington, North Carolina, June 1996. This report was prepared in final response to a resolution adopted 8 September 1988 by the United States House of Representatives, which directed that the existing Federal project for Wilmington Harbor be reviewed and improvements considered. This report recommended deepening the existing 38-foot project to 42-feet to the Cape Fear Memorial Bridge. Construction of this project, up to the North Carolina State Ports Authority’s docks, was completed in 2004.

Environmental Assessment, Preconstruction Modifications of Authorized Improvements, Wilmington Harbor, North Carolina, February 2000. This EA addressed preconstruction modifications to harbor improvements including Ocean Bar Channel realignment, shoreline placement of dredged sand, rock blasting without air curtains, and a comprehensive dredging and disposal plan.
A review of existing studies revealed a substantial amount of investigations carried out since 1990 that recommended channel deepening and channel widening in various locations throughout Wilmington Harbor. None of these studies, however, were found to have specifically examined alternative channel alignments for the channels reviewed in this Initial Appraisal, with the exception of ship simulations of: a) a channel widener on Baldhead Shoal Channel Reach 1; b) a straight channel alignment through Jay Bird Shoals connecting at the upstream terminus of Smith Island Channel; and c) the creation of Baldhead Shoal Channel Reach 2. These simulations were evaluated as a result of suggestions provided during the Value Engineering Study discussed in detail below. No studies providing detailed analysis on alternative alignments could be located for the remainder of the channels in question; Baldhead Shoal Channel Reach 1, Smith Island Channel, Baldhead Caswell Channel, Southport Channel, Battery Island Channel, and Lower Swash Channel.

Baldhead Shoal Channel Reach 2 was evaluated as part of an alternative alignment analysis that was conducted as a part of a Value Engineering Study for the Wilmington Harbor Northeast Cape Fear Rivers Comprehensive Study, Wilmington, North Carolina dated December 1997. In this study, alternative alignments were developed and investigated to reduce rock excavation and costs. The analysis resulted in a recommendation to move the existing alignment to a more southeasterly direction as depicted in a map in the Value Engineering report as shown in Figure 3 (copied from the 1997 Value Engineering report). To ease the approach angle to the new alignment, Baldhead Shoal Channel and the formerly straight Bald Head Shoal Channel was divided into three straight reaches (Baldhead Shoal Channels 1, 2, and 3) to connect to the new entrance channel. Hydrodynamic modeling was done for this analysis only to provide input to ship simulation. Shoreline impacts, shoaling, and sediment transport were not modeled. Construction of the realigned channel was completed in 2002. This new alignment was determined to be more cost-efficient and environmentally acceptable.

Ultimately, the review of existing studies did not identify documentation of previous analyses, of the particular channels in question, specifically addressing the question of alternative alignments. Although some channels within the Bald Head Portion of the study area were touched upon in the Value Engineering report, they were not addressed at the level of detail necessary to adequately determine the appropriateness of modifying the existing alignments.
Figure 3. Map of Proposed Alignment as Documented in the 1997 Value Engineering Study.
Relocation of the channel as it relates to facilitation of navigation was considered by the Corps study team. Generally, straighter alignments are more conducive to navigation than alignments with turns. Many potential alternative alignments to achieve this were given cursory consideration in reaches within the scope of consideration in this Initial Appraisal. Figures 4 and 5 below provide illustrations of potential alternative channel alignments of the Bald Head Portion of the study area which would provide for a straighter channel alignment thereby facilitating navigation. These alignments also move the channels further away from adjacent beaches which may also reduce shoaling, decrease navigation maintenance costs, and reduce project costs. The figures below are conceptual illustrations only and by no means are exhaustive in terms of potential alternatives which would facilitate navigation in the channel reaches under consideration.

Figure 4. A potential alternative channel alignment in the Bald Head Portion of the study area
Conceptual alternatives as depicted in the illustrations above, as well as other potential alternatives to straighten the navigation channel through this reach, may result in potential for cost savings due to reduced degree of turns that vessels would have to navigate and less operations and maintenance costs for the navigation project.

Realigning or widening the Battery Island Portion also has the potential to improve navigation safety and efficiency and reduce vessel delays. One possible alternative for improving the Battery Island Turn is shown in Figure 6. The potential alignments illustrated in Figures 4, 5, and 6, have been coordinated with the Wilmington Cape Fear Pilots Association which has indicated its support for the study of alternative alignments.
8.0 STUDY REQUIREMENTS

As mentioned previously, this appraisal utilized only existing, readily-available data, and best professional judgment. The results of this Initial Appraisal will be used to determine if the development of a reconnaissance level study 905(b) report is warranted. Results from a reconnaissance study would be used to assist in the determination of whether a Federal Interest exists for pursing a cost-shared feasibility-level study effort to fully assess the need and potential alternatives for Navigation improvements for Wilmington Harbor. The feasibility report would be expected to analyze whether proposed changes are engineeringly sound, environmentally acceptable, and economically justified. The following are an example of some of the items that would be studied in greater detail in a feasibility study:

1. Plan Formulation
   a. Alternative channel alignments
   b. Alternative dredging options
   c. Alternative disposal locations
   d. Public involvement and coordination

Figure 6. A potential alternative channel alignment in the Battery Island Portion of the study area
2. Economics
   a. Vessel characteristics
   b. Expected future commerce
   c. Transportation cost savings
   d. Reduction in vessel delays
   e. Reduction in maintenance costs
   f. Benefit analysis
   g. Comparison of costs and benefits
   h. Selection of the NED Plan

3. Environmental
   a. Environmental assessment
   b. Cultural resources evaluation
   c. Benthic and cultural surveys
   d. Endangered species evaluation
   e. Essential fish habitat
   f. Fish and Wildlife Coordination Act Report
   g. Monitoring and/or mitigation requirements
   h. Public and agency coordination
   i. Consistency Determination with NC Coastal Management Program
   j. Finding of No Significant Impact

4. Geotechnical Investigations
   a. Evaluation of existing geotechnical data
   b. Additional subsurface investigations if warranted
   c. Material characterization
   d. Top of rock contouring
   e. Computation of volumes for alternatives
   f. Evaluation of disposal options
   g. Preparation of geotechnical documentation

5. Coastal Engineering
   a. Channel alternative surveys
   b. Design of channel alternatives
   c. Alternative shoaling rates
   d. Sediment transport
   e. Ship simulation
   f. Dredged material disposal options
6. Cost Engineering
   a. Alternative cost estimates
   b. MCACES costs for Recommended Plan
   c. Costs risk analysis
   d. Preparation of cost documentation
   e. Value engineering study

7. Agency and Technical Review
   a. Quality Assurance/Quality Control
   b. Agency Technical Review – Cost Certification
   c. External Independent Peer Review
   d. Higher Authority Review

Data generated as part of this study will be posted to the District’s navigation home page. Documents will be provided for public review according to a schedule developed in the Project Management Plan. Existing information on hydrodynamic modeling, shoreline monitoring, ship simulation, geotechnical, and other pertinent data will be utilized to the extent possible and updated as required. A combined Feasibility Report and Environmental Assessment or Environmental Impact Statement would be prepared if warranted. The Project Delivery Team will be selected by the Wilmington District, with Agency Technical Review handled by the Deep-Draft Navigation Center of Expertise in South Atlantic Division.

9.0 RECOMMENDATIONS

Based on the consideration of potential increased safety and navigability benefits, there is sufficient reason to further investigate the feasibility of modifying the existing channel alignment to better serve the public interest. I find that there is sufficient reason to investigate and determine if there is a Federal interest in continuing with the project with the preparation of a Reconnaissance Report. Should the determination be made that there is a Federal interest in continuing with this project, then a feasibility-level report should be initiated for analyzing alternatives to address the identified problems through possible modifications of the project.

Christine M. Brayman
Deputy for Programs and Project Management
SCHEDULE TO ESTABLISH BOARD TIME ON DEEP ARRIVALS

April 28, 2009

- Nothing in this schedule shall be interpreted as limiting the pilot, vessel master, or facility operator from taking additional actions necessary to increase the level of care that ensures the vessel’s safe transit and mooring.
- Time limits subject to change due to weather conditions, underpowered vessels, vessels with limited handling abilities or emergencies.
- Vessels 38 feet and less move on any tide time at pilot’s discretion.

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SCHEDULE TO ESTABLISH BOARD TIME ON DEEP SAILINGS
FROM WILMINGTON

April 28, 2009

- Nothing in this schedule shall be interpreted as limiting the pilot, vessel master, or facility operator from taking additional actions necessary to increase the level of care that ensures vessel's safe transit and mooring.
- Time limits subject to change due to weather conditions, low powered vessels or emergencies.
- Vessels 38'00" and less move on any tide time at pilot's discretion

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Mr. Thomas J. Eagar  
Chief Executive Officer  
North Carolina State Ports Authority  
2202 Burnett Boulevard  
P. O. Box 9002  
Wilmington, NC 28402

Dear Mr. Eagar:

Representatives from the Wilmington - Cape Fear Pilots Association recently met with representatives of the Wilmington District Army Corps of Engineers to discuss upcoming maintenance dredging projects and possible future channel improvements. As you may be aware, the pilots currently restrict certain Yang Ming vessels to a 36 - 06 anytime draft upon arrival. The reason for this is the difficulty with certain vessels negotiating the turn at Battery Island on an ebb current. These vessels that are deeper than 36 - 06 are moved on a flood current only.

The pilots have suggested to the Army Corps a possible solution to the above problem. It is thought that increasing the width and length of the widening between buoys 16 and 18 may improve the turn at Battery Island sufficiently to allow the above draft restrictions to be removed.

To facilitate this improvement, the pilots request the support of the State Ports Authority in a matter that will be a benefit for current and future port customers. In addition, the pilots would be pleased to meet with you and or anyone you may designate to discuss this in more detail.

Thank you for your consideration in this matter.

Yours sincerely,

[Signature]

Stephen M. Phillips  
President

cc: Colonel John Pulliam
| Feasibility Milestones for Wilmington Harbor Improvements  
(for NC International Terminal) | Duration (mo) | Cumulative (mo) | Estimated Date | Estimated Study Costs 1/ |
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<td>Project Authorization by Congress via Water Resources Development Act after ASA(CW) and OMB clearance 4/</td>
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<td>At discretion of Congress</td>
<td>State/ Fed funds for Pre-construction, engineering &amp; design</td>
</tr>
</tbody>
</table>

1/ All timelines subject to the optimal availability of Federal and State Appropriations. There is no guarantee of out-year appropriations.
2/ These costs and schedule do NOT include the EIS for the landside development of the container terminal (100% non-Federal) which needs to be accomplished concurrently with the Wilmington Harbor Improvements Feasibility study and EIS.
3/ Independent Review is required by the Water Resources Development Act of 2007 and done by a team of experts from industry and academia.
4/ Water Resource Development Acts are not passed on a regular schedule. The last one was in 2007 and the prior in 2000.
BACKGROUND: USACE PROJECT PHASES (Wilmington Harbor Improvements only, does NOT include landside development.)

(1) RECONNAISSANCE 100% Federally funded – Started June 2009; 905(b) analysis (aka Reconnaissance Report) must be signed by Commander in 18 months by law. After 905(b) report approved, prepare a Feasibility Cost Sharing Agreement (FCSA), which includes a Project Management Plan (PMP) describing the responsibilities, guidelines, tasks, costs estimate and schedule for the feasibility phase. The Reconnaissance Phase ends when the non-Federal sponsor and our District Commander sign the FCSA.

(2) FEASIBILITY Cost-shared 50% Federal, 50% non-Federal. Non-Federal portion can be in-kind services including attendance at meetings, document review, technical studies that you conduct, or analyses performed by a contractor hired by and working directly for you that directly support activities required in accordance with the PMP. Each fiscal year funds must be provided up-front so that they are available before they are committed to be spent (not when the bills come in). – The Feasibility study fully defines problems and opportunities, describes and evaluates alternative plans and fully describes a recommended project. Feasibility Phase ends with ASA(CW) transmittal to Office of Management and Budget (OMB). Five years with new review requirements under optimal funding and no significant issues.

(3) PRECONSTRUCTION ENGINEERING & DESIGN cost-shared 75% FED, 25% Non-Federal although the actual or final share that you will pay will be the same as the non-Federal cost share for your particular project purpose. The difference, if any, will be paid in the beginning of the construction phase. The purpose of this phase is to complete any additional planning studies and all of the detailed, technical studies and design needed to begin construction of the project. This phase is approximately two years for detailed studies and ends with the completion of the first detailed construction contract drawings and Plans and Specifications (P&S), sometimes referred to as “Plans and Specs”, or when Construction funds are appropriated by Congress.

(4) CONSTRUCTION cost-shared 50% non-Federal if depth is > 45 feet – The construction phase begins after Congress appropriates Construction funds for the project and the Project Partnership Agreement (PPA) is negotiated and jointly signed by you and the ASA(CW). Cost and schedule for dredging construction will be developed in Feasibility. In addition, the non-Federal sponsor is required to contribute an additional 10% after construction is complete over a period not to exceed 30 years.

(5) OPERATION & MAINTENANCE is 100% Federal up to depths of 45’ and cost shared 50% Federal, 50% Non-Federal for depths greater than 45’ through project life. Project will require annual maintenance dredging.

All timelines subject to the optimal availability of Federal and State Appropriations. There is no guarantee of out-year appropriations.