



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A HAGOOD AVENUE
CHARLESTON, SOUTH CAROLINA 29403-5107

CESAC-PM-PL

9 July 2015

MEMORANDUM FOR RECORD

SUBJECT: Civil Works Review Board (CWRB) Meeting Summary, Charleston Harbor Post 45 Study, Charleston, South Carolina.

1. The subject meeting was held 25 June 2015 from 0900 until 1200 EST. The Chair and Board Members for the CWRB were Major General (MG) Peabody, CWRB Chair and Deputy Commanding General for Civil and Emergency Operations; Mr. Theodore (TAB) Brown, Planning and Policy Division Chief; Mr. Steve Stockton, Director of Civil Works; Ms. Karen Durham-Aguilera, Director, Contingency Operations and Office of Homeland Security; Mr. Edward Belk, Chief, Operations and Regulatory Community of Practice; Brigadier General (BG) John Kem, Commander, Northwestern Division; and Ms. Traci Clever, Regional Business Director, South Pacific Division.
2. The purpose of the meeting was to gain approval of the CWRB to release the final integrated report and environmental impact statement and the draft Report of the Chief of Engineers for Final State and Agency (S&A) Review.
3. The meeting was opened by CWRB Chair MG Peabody who offered welcoming remarks and introductions. United States Senator Lindsey Graham from South Carolina commented on the impact of the port on the economy and his efforts to secure funding for the proposed project. South Carolina State Senator Lawrence Grooms added his thanks to the group for their efforts and emphasized the importance of the harbor deepening project to the State of South Carolina as evidenced by the State's financial commitment. BG Turner, Commander, South Atlantic Division (SAD), opened by thanking everyone in attendance for their efforts, time and commitment. BG Turner followed with a brief description of the need for the Charleston Harbor Post 45 project and benefits and then addressed the project's ability to contribute to the nation in key areas.
4. Lt. Colonel John Litz, Commander, Charleston District (District), provided the briefing of the Charleston Harbor Post 45 Navigation Study, in conjunction with Mr. James Newsome, CEO of the South Carolina State Ports Authority (SCSPA). Colonel Litz's briefing began with stating that the Charleston Harbor Federal Navigation Project is one of 5 major port studies in the United States designated as critical infrastructure projects by the Administration. The study schedule adopted the 3x3x3 principles to develop the scope, schedule and budget for the study. That effort was followed by the approval of a waiver in August 2012 that allowed the team to spend \$11.75M and complete the study within three years or roughly 35 months ago. This project is one of the first studies to be performed completely under the new streamlined planning process. The Economic analysis determined

a project depth of 50 feet as the National Economic Development Plan. The non-federal sponsor (SCSPA) requested a Locally Preferred Plan (LPP) to provide an additional 2 feet of deepening to 52 feet. SCSPA agreed to pay the difference for the additional 2 feet. The LPP was approved for consideration as the recommended plan on October 1, 2014 by the Assistant Secretary of the Army for Civil Works (ASA-CW). The LPP is the Recommended Plan, which is economically justified with a benefit-to-cost ratio of 3.9 based on a Federal Investment of \$180M and a non-Federal investment of \$341M, adding up to a project cost of about \$521M. The overall cost-share split would be about 65% Non-Federal and 35% Federal.

- The Recommended Plan would:
 - Increase the authorized depth of the entrance channel from 47 feet to 54 feet, and extend it approximately 3 miles to match natural depths.
 - Increase the authorized depths of the inner harbor channels, berthing areas, and turning basins from Mt. Pleasant Reach to the Wando Welch and New Navy Base Terminals from 45 feet to 52 feet.
 - Increase the authorized depths of the channel, berthing areas, and turning basins from Daniel Island Bend to the North Charleston Terminal from 45 feet to 48 feet.

- The recommended plan would dredge about 40 million cubic yards of material. Most of the material would be placed in three existing land-based placement sites and a modified Ocean Dredged Material Disposal Site (ODMDS). Some rock would be dredged, but testing shows that blasting is not required. Some dredged rock would be placed to construct a containment berm for the ODMDS. The remaining rock would be placed close to the entrance channel as a least-cost disposal option, with no-cost, hardbottom habitat-related, environmental benefits. “Advance Maintenance”, which is the practice of dredging deeper in high-shoaling areas, was evaluated and is expected to be needed at the same rate that is currently approved for the existing project. Operation and Maintenance costs would increase by about \$3.7M per year.

- Roughly 324 acres of freshwater wetlands would experience salinity increases, and succumb to a change in vegetation. The amount of compensatory mitigation for the preferred mitigation alternative requires 665 acres of mitigation land. Mitigation will be accomplished by preserving one parcel of land containing about 720 acres of wetlands, and 430 acres of adjacent uplands. This land will be conveyed to the US Forest Service for incorporation into the Francis Marion National Forest. Although the parcel is larger than needed only the portion that is required to compensate for the NED Plan will be cost shared.

- Impacts and mitigation for hardbottom habitat include an estimated 29 acres of impact to hardbottom habitat that cannot be avoided. The PDT proposed the construction of 33 acres of artificial reef as mitigation. An additional 33 acres of reef will be created as a contingency in case the primary mitigation reef doesn’t meet success criteria within the monitoring period.

- A total of 9 years of environmental monitoring is proposed, at a cost of about \$10.6M. Monitoring would occur before and during construction for four years, and after construction for 5 years. The monitoring program includes water quality monitoring for: dissolved oxygen and salinity; vegetation monitoring of wetlands; hardbottom habitat and recovery monitoring; and shoreline impact monitoring, specifically for Ft. Sumter.
5. Mr. James Newsome, President of the South Carolina State Ports Authority, the non-Federal Sponsor, explained the need for a 52-foot harbor in Charleston. He listed the Panama Canal expansion and the Bayonne Bridge modifications as major vessel infrastructure limitations to be removed by the end of 2016. Also, more capacity will exist on ships greater than 7,500 TEUs by 2017, which have a summer draft between 48 to 52 feet. All major lines have ordered ships greater than 10,000 TEUs. Eight lines have ordered ships greater than 18,000 TEUs. He anticipates export growth to outpace import growth with the U.S. Southeast representing the largest exporting region in the U.S. The SCSPA has committed to a 10-year capital expenditure of \$2 Billion for infrastructure and port facility improvements.
 6. BG Turner, Commander, South Atlantic Division (SAD), recommended approval of the final report for State and Agency Review, completion of the Chief of Engineers Report, and subsequent submittal to Congress for authorization. He highlighted the strategic value of Charleston Harbor, recognized the report as legally and policy compliant, and complimented the Post 45 team on their quality assurance by extensive involvement of the vertical team and frequent in-progress reviews.
 7. Mr. Todd Nettles, the technical director of the Deep Draft Navigation Planning Center of Expertise, presented a summary of the Agency Technical Review (ATR), including use of Corps certified economics model HarborSym, and stated that all comments were closed with no outstanding issues. He recommended the release of the draft Chief of Engineers Report.
 8. Ms. Karen Johnson-Young, Program Manager, Battelle, presented the Independent External Peer Review (IEPR) background and introduced Ms. Cheryl Ulrich, lead IEPR panel member and plan formulation reviewer, to present the rationale for assessing the eighteen comments. Ms. Ulrich went over a summary of the primary concerns and how they were addressed. She concluded that the panel agreed with all Project Delivery Team (PDT) actions to the address the Final Panel Comments.
 9. Mr. Jeremy LaDart, Review Manager, HQ Office of Water Project Review (OWPR), presented a summary of the HQUSACE review concerns. The main areas of concern that were highlighted include 1) Base Disposal Plan Identification, 2) Ship Simulation, 3) Economic Forecast Assumptions, 4) Incremental Analysis of Channel Widening 5) Cost Sharing for Mitigation Lands. Mr. LaDart stated that the HQ policy review team has worked through the concerns with the District and has resolved all concerns to date. OWPR recommended approval to release the Draft Chief of Engineers Report and accompanying Integrated Report and EIS for State and Agency review.

10. MG Peabody then opened the floor for questions and general discussion from the Board. The following comments and questions were discussed:

- a. Who determines strategic ports? The United States Maritime Administration (MARAD) has a website, which explains the National Port Readiness Network (NPRN) a group of ten Federal agencies and organizations developed to ensure readiness of commercial ports to support force deployment during contingencies and other defense emergencies.
- b. Why does the Sponsor believe a need exists for a 52-foot project depth with an export dominant harbor? Charleston Harbor is located in the Piedmont Atlantic Megaregion of the U.S., which is one of the fastest growing regions in the Southeast. Much of this growth is in manufacturing. Forest and agricultural products also represent major exports and they tend to weigh more than most imported cargo. Not enough ports exist to get these products delivered efficiently overseas since cargo usually moves via the least cost option. Also container shipping companies are replacing the smaller less efficient ships with new, larger, more energy efficient ships which require greater drafts and are more economically viable. The smaller vessels will fall out of the fleet.
- c. What speed do ships travel at within the harbor? Ships generally transit at 8 – 10 knots (prior to approaching reaches with turns).
- d. What type of adaptive management plan exists for potential erosion at Ft. Sumter? Adaptive management costs are zero for ship wake impacts since modeling indicates the risk of shoreline erosion induced from ship wakes is extremely low. Ship wake analysis indicates that a smaller number of larger ships in the future would reduce future ship wake impacts. The analysis also showed that wind and storm induced waves produce much greater impacts to shoreline erosion than ship wakes. Ship wakes represent a relatively small component of the total wave energy impacting shorelines. Preliminary plans and costs have been developed for a breakwater to protect Ft. Sumter, but as of yet no sponsor has agreed to pay for the modifications.
- e. When will you receive water quality certification? Water quality certification was received in March.
- f. How did you address safety issues such as difficult water crosscurrents with the proposed navigation improvements? We added a series of figures to the report illustrating the proposed widening and turning basin expansion measures in relation to the existing Federal channel over GIS aerials with text boxes. The text boxes explained the “areas of particular concern” as documented in the U.S. Coast Pilot and the figures illustrated, using conceptual ship tracks based on discussions with the harbor and docking pilots, the need for the widening and turning basin measures. The conceptual ship tracks showed how ships have to crab into the wind or crosscurrents near the confluence of the Mt. Pleasant Reach with the Ashley River/Intercoastal Waterway or at the confluence of the Wando and Cooper Rivers. As the ships crab into crosscurrents or winds, their effective beams increase. The widening and turning basin expansion measures would allow ships to navigate turns, maneuver and transit to the terminal dock more efficiently.
- g. How long is the construction period? Based on uncertainties the construction duration is estimated to range from 40 to 76 months.

- h. Do environmental windows exist that could impact the construction duration? Yes, environmental windows for endangered species have been factored into construction windows and construction sequencing. Several other measures to reduce impacts to fish, turtles, and marine mammals are also included.
- i. Will availability of dredges impact the construction schedule? It's a concern, but contracting mechanisms exist to help reduce that risk. The team will make use of all available tools to complete the work efficiently but will need to be able adapt based on the situation at the time.
- j. Why is there no cost for adaptive management in the environmental monitoring slide? There are two types of remedial actions identified on the slide: Corrective actions and adaptive management. For this study, adaptive management only applies to the hardbottom Habitat mitigation features because they are the only features for which management actions are anticipated. There is no cost included because the least cost disposal alternative creates far more hardbottom habitat than is needed to mitigate for the impacts. Only two of the eight new reefs are currently identified as mitigation reefs. If colonization and growth at the reefs is slower than anticipated, one or more additional reefs can be re-designated as mitigation reefs at no cost. Mitigation for wetland impacts is in the form of preservation of high priority and high functioning wetlands. With no restoration or enhancement actions identified. Thus, no management or associated adaptive management actions are anticipated. Similarly, analysis indicates that no mitigation for erosion or water quality impacts is needed. Thus, no management or adaptive management action is anticipated. If monitoring identifies unforeseen adverse impacts, a corrective action will be identified to address it based on the results. However, no costs are included when no action is anticipated or identified.
- k. With a 52-foot project depth what will the availability of the Federal channel be without tide? Approximately 95%
- l. When will the throughput capacity be reached? It will reach 96-97% capacity by 2037.
- m. Is the additional information requested by the IEPR comment on the need to explain the reduction in alternatives really necessary? IEPR representative Cheryl Ulrich noted that she did not think the draft report sufficiently describe how the team got from 294 to 6 alternatives, but commented that LT Colonel Litz's plan formulation slide did a good job explaining that process. The PDT also added additional tables showing an incremental benefit/cost analysis from the early stage of the process and several additional figures to provide information about specific measures and to show how the harbor and docking pilots through a desktop exercise helped reduce the number of alternatives.
- n. What is the uncertainty of the EPA ODMDS modification and designation approval? We have a letter from EPA documenting the progress that has been made and indicating that they plan to continue working with the USACE to complete the modification. The letter does not say that they do not foresee any problems but they need to be careful about putting such strong language in a formal letter to the USACE prior to making a decision. We expect EPA to release the EA for the modification of the ODMDS in July. EPA required an EA (not an EIS) for the modification, which

indicates the low level of risk and helps streamline the process. EPA also agreed to release the draft rulemaking for review concurrent with the finalization of the EA. It is also important to note that the project could be constructed without the modification. However, it would eventually be needed for O & M dredging.

- o. What is the BCR at 7%? 1.9
 - p. What are the study milestones and when did each occur? It is notable that limited funding prior to the rescoping effort in 2012 limited progress prior to the Charette and waiver approval.
 - Aug 2011 – Notice of Intent Published in Federal Register
 - Jun 2012 – 3x3x3 Charette
 - Aug 2012 – 3x3x3 Waiver approved
 - Oct 2014 – ASA(CW) Approved LPP Waiver
 - Oct 2014 – TSP Milestone/Release of draft report
 - Feb 2015 – Agency Decision Milestone
 - 22 April 2015 – NMFS Biological Opinion (Addendum in early May)
 - May 2015 – DQC/ATR/MSR review and legal certification of Report
 - 18 May 2015 – District Engineers Transmittal
 - 20 May 2015 – Division Engineers Transmittal
 - 25 Jun 2015 – CWRB
 - q. General comments included: I Commend the team for cost and schedule containment (Durham-Aguilera); Information was thought out and Cogent. It caused understanding (Belk); Clear and easy to understand (BG Kem).
 - r. General Peabody concluded the panel Q&A stating that we need to improve the partnering process with the resource agencies involving approval of the Biological Opinion; well done on the Risk Register; for future projects need to add a study project history slide; develop a CWRB presentation checklist to maintain a consistent quality; 3x3x3 process originally represented an aspiration but now Congress has included it in the law; regional team worked well; the purpose of our products is to inform policy makers with sufficient information to make decisions, but how much is enough?
 - s. Mr. Lamont from the ASA(CW) office complimented the group on their effort and asked about the ODMDS modification schedule. The PDT responded that the EA was expected to go out for public review in July and the rulemaking will be complete before construction. Also, the existing ODMDS is available until that happens.
 - t. General Peabody opened the Q&A to the rest of the room.
11. Mr. Brown moved that the Board adopt the HQ policy review team's recommendation: Approve release of the final integrated report and environmental impact statement and the draft Report of the Chief of Engineers for S&A review.
12. The Board unanimously agreed to the recommendation for approval to release the final integrated report and environmental impact statement, and the draft Report of the Chief of Engineers for S&A review.

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13. General Peabody turned the meeting over to Lt. Colonel Litz to conclude the presentation with the lessons learned slide. The slide identified the need to provide more formal, detailed documentation of decisions and assumptions from the planning charette; confirm all assumptions with the Vertical Team related to decisions made during the charette before they are applied to the next logical level of analysis (e.g. max widening measures); elevate concerns with IEPR timelines as soon as possible; and clearly define IEPR requirements. Mr. Brown asked the PDT to prepare to do a “Lessons Learned” webinar so this is not just a “Lessons Documented” experience.
14. MG Peabody closed the CWRB.



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Branch