DEPARTMENT OF THE ARMY
CHIEF OF ENGINEERS
2600 ARMY PENTAGON
WASHINGTON, D.C. 20310-2600

DAEN

16 APR 2014

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)
108 ARMY PENTAGON, WASHINGTON, DC 20310-0108

SUBJECT: Lake Worth Inlet, Palm Beach County, Florida – Final USACE Response to Independent External Peer Review

1. Independent External Peer Review (IEPR) was conducted for the subject project in accordance with Section 2034 of the Water Resources Development Act of 2007, EC 1165-2-214, and the Office of Management and Budget's Final Information Quality Bulletin for Peer Review (2004).

2. The IEPR was conducted by Battelle Memorial Institute. The IEPR panel consisted of four members with technical expertise in Civil Works planning, economics, biology/ecology, and civil engineering.

3. The final written responses to the IEPR are hereby approved. The enclosed document contains the final written responses of the Chief of Engineers to the issues raised and the recommendations contained in the IEPR. The IEPR Report and the USACE responses have been coordinated with the vertical team and will be posted on the Internet, as required in EC 1165-2-214.

4. If you have any questions on this matter, please contact me or have a member of your staff contact Ms. Stacey Brown, Deputy Chief, South Atlantic Division Regional Integration Team, at 202-761-4106.

Encl

THOMAS P. BOSTICK
Lieutenant General, USA
Chief of Engineers

Lake Worth Inlet
Palm Beach Harbor
Palm Beach County, Florida
Integrated Feasibility Report and Environmental Impact Statement

U.S. Army Corps of Engineers Response to
Independent External Peer Review
April 2014

Independent External Peer Review (IEPR) was conducted for the subject project in accordance with Section 2034 of WRDA 2007, EC 1165-2-214, and the Office of Management and Budget's *Final Information Quality Bulletin for Peer Review (2004).*

The goal of the U.S. Army Corps of Engineers (USACE) Civil Works program is to always provide the most scientifically sound, sustainable water resource solutions for the nation. The USACE review processes are essential to ensuring project safety and quality of the products USACE provides to the American people. Battelle Memorial Institute (Battelle), a non-profit science and technology organization with experience in establishing and administering peer review panels for USACE, was engaged to conduct the IEPR of the Lake Worth Inlet, Palm Beach Harbor Integrated Feasibility Report and Environmental Impact Statement (FR/EIS).

The Battelle IEPR panel reviewed the Draft FR/EIS, as well as supporting documentation. The Final IEPR Battelle Report was issued 24 June 2013 and a revised Comment Response Record was issued by the IEPR panel on 10 January 2014 indicating that all comments were satisfactorily addressed. Overall, seven comments were identified and documented. Of the seven comments, two were identified as having high significance, two were identified as having medium significance, and three were identified as having low significance. The following discussions present the USACE Final Response to the seven comments.

1. Comment – *High Significance*: The assumed 2017 base year commodity flow estimates used to justify the commodity projections are not supported by the historical and current commodity data as presented in the document.

This comment includes six recommendations for resolution; one was adopted and five were not adopted as discussed below. The comment expresses the concern that the national economic development (NED) benefits and benefit to cost ratio depend on the commodity forecasts, which in turn depend on the assumed 2017 base year cargo flows.

USACE Response: Adopted

Action Taken: The IEPR panel recommended the report (1) provide a detailed explanation for the assumed 2017 tonnages for benefiting commodities. In response, additional explanation of the forecast for the base year was added to the Socio-economic Appendix. Clarification of the materials categorized as cement and cement materials was added to Sections 4.2, 4.2.2, 4.2.2.3, and 2.1.3. Also included was an explanation of how high-tonnage/low-value goods like dry bulk construction materials move via truck and rail after import, and why they are imported as close to

the construction or processing sites as possible. Discussion on external factors affecting the export of molasses and recent rates was added to Section 4.2.3. Clarification on the grouping of asphalt, fuel oil, and petroleum was added Section 4.2.1. Explanation of how large general cargo types were combined in the analysis for simplification was added to Section 4.2.5. Additionally, an addendum to the Socio-economic appendix was added which included sensitivity analyses for molasses and cement held at current levels with no future growth.

USACE Response: Not Adopted

The IEPR panel recommended the report (2) discuss cargo flows for benefiting commodities through calendar year 2012, including the reasons for any declines. At the time of the analysis, only detailed cargo data through 2010 was available. Therefore, no data from 2012 was included in the report. Furthermore, sensitivity analyses that were performed indicated that project was still economically justified even if no additional growth from 2010 levels occurred in molasses and cement.

The IEPR panel recommended that the report (3) separate the discussion of diesel fuel from fuel oil, and provide a specific forecast of diesel fuel tonnage throughout. Diesel fuel and asphalt are both brought in by a single shipper, and fuel oil is brought in by a single shipper. Since this information pertains to a single firm, it was considered too sensitive to publish in the feasibility report. Although not included in the report, this information was provided to the IEPR panel for review under the condition that it was not further disseminated.

The IEPR panel recommended the report (4) analyze the commodities anticipated by CEMEX that are currently listed as cement but are actually other minerals and aggregates. “Cement” was used as a proxy for all dry bulk construction materials as a simplifying assumption in the analysis. The expectation that dry bulk imports will include cement input materials does not preclude the possibility of future imports of aggregate and mixed cement. Therefore all dry bulk construction materials were analyzed as a single commodity. However, information was added to Sections 4.2, 4.2.2, 4.2.2.4, and 2.14 of the Socio-Economic Appendix to make this assumption more clear.

The IEPR panel recommended the report (5) revise the analysis and projection of general cargo flows to separate the largest commodities, specifically any project cargo associated with major near-term infrastructure projects (e.g., FPL power plant conversion). Vessels in the general cargo category are mostly made up of yachts and others carrying miscellaneous project cargo. Only about 12% of general cargo vessel calls are assumed to be large deepening-benefitting vessels. This assumption was applied throughout the period of analysis, and for each project alternative. Since the actual project cargoes and yacht movements would be difficult to predict, these assumptions were made for simplification of the analysis. Section 4.2.5 of the Socio-Economic Appendix was updated to make these assumptions more clear.

The IEPR panel recommended the report (6) reconcile the expected 2011 cargo flows shown in Table 33 of the Economic Model Documentation with actual port cargo flows through 2012. At the time of the analysis, only detailed cargo data through 2010 was available. Therefore, no data from 2012 was included in the report.

2. Comment – *High Significance*: The cost, schedule, and overall project implementation will be impacted if EPA's restriction on the volume of material that can be disposed at the Ocean Dredged Material Disposal Site is not increased.

This comment included three recommendations; two were adopted and one was not adopted. The comment details the need for identifying the risks to the project if the EPA does not approve additional disposal at the Ocean Dredged Material Disposal Site (ODMDS).

USACE Response: Adopted

Action Taken: The IEPR panel recommended (1) that the report include information shared at a mid-review teleconference held with the panel to enable the reader to reach the same conclusion about risk. In response, information was added into the report to describe a modeling study on the distribution of the dredged material, mounding, and resulting footprint on the seafloor to be conducted prior to the pre-construction, engineering, and design (PED) phase. There is more than enough vertical capacity at this site, which is 1 nautical square mile in approximately 525-625 feet of water depth, and which has only been used once to date for approximately 3,500 cubic yards of dredged material. USEPA's concern was whether the material will fit within the horizontal footprint when placed, rather than if there is enough vertical capacity. Should materials exceed the ODMDS footprint, site expansion could be determined necessary. Based on the existing site configuration and conditions at the Palm Beach ODMDS and the amount of proposed dredged material from the recommended plan, it is not likely (low risk) that an ODMDS expansion would be necessary for this site. Additional information about the low risk nature of this item, citing the above discussion and rationale, as well as back-up scenario, was added to the FR/EIS Section 4.8 and 4.10, as well as by reference in Chapter 2 and 5.

The IEPR panel recommended (2) the inclusion of additional information on the "understanding" USACE has with EPA regarding allowing excess material to be disposed of during one event, if the material is shown to contain nothing objectionable. In response, an initial email between EPA and USACE was added to the Pertinent Correspondence Appendix.

USACE Response: Not Adopted

The IEPR panel recommended (3) another disposal option be added with detailed cost to demonstrate the project can move forward if the change to the ODMDS limit is not allowed. There is a low likelihood that an expanded area will be required based on the disposal volumes and previous modeling that has been conducted. Additionally, there is a process that could be utilized whereby the USACE could request one time expansion of the ODMDS under Section 103(b) of the Marine Protection, Research, and Sanctuaries Act (MPRSA). Hence, an additional disposal option with costs was not developed.

3. Comment – *Medium Significance*: The vessel cost savings for benefiting commodities cannot be verified from the documentation provided.

This comment included two recommendations; one was adopted and one was not adopted. The comment expresses concern that the estimated national economic development (NED) benefits

consist only of the vessel operating cost savings and could not be validated based on the documentation provided.

USACE Response: Adopted

Action Taken: The IEPR panel recommended adding to the report (1) sufficient detail to the Socio-Economic Appendix discussion of vessel operations, commodity movements, and vessel cost savings to establish a link between existing cargo flows and vessel movements, and future flows and movements with and without the recommended project. In response, information was added to Section 5.1.4 of the Socio-Economic Appendix to show a clear link between vessel calls, commodity movements, and transportation cost savings.

USACE Response: Not Adopted

The IEPR panel recommended to (2) revise the analysis of cement import vessel cost savings to correspond to the actual commodities and origins anticipated by CEMEX. "Cement" was used as a proxy for all dry bulk construction materials as a simplifying assumption in the analysis. The expectation that dry bulk imports will include cement input materials does not preclude the possibility of future imports of aggregate and mixed cement. The cement routes were based on historical ports of origin and are similar to the routes of cement input materials expected. The HarborSym model assigns a random route distance for each vessel call based on a triangular distribution of the distances in its route group characteristics. Historical average distances were verified to be between the min and max distances in the model distribution. Since the actual dry bulk sources and vessel routes in the future cannot be fully known, this was deemed to be a reasonable assumption. Hence, no changes were made to the analysis as a result of this recommendation.

4. Comment – *Medium Significance*: The long-term storage capacities of dredged material management alternatives are not presented in sufficient detail to determine if, collectively, they are adequate for this project.

This comment included three recommendations. All three recommendations have been adopted. This comment relates the management of dredged material to the sustainability of the proposed plan.

USACE Response: Adopted

Action Taken: The IEPR panel recommended (1) the report clearly show current storage capacity for each dredged material management alternative. In response, additional discussion was added to Section 4.8 of the report on the physical capacity of the ODMDS.

The IEPR panel recommended (2) a more detailed explanation of the impact on the capacities of the each dredged material management alternative of sediment volumes dredged during initial construction of the proposed plan. In response, additional discussion was added to Section 4.8 of the report on the remaining capacity of the ODMDS following initial construction to be confirmed

through modeling of the material movement during disposal operations within the boundaries of the site.

The IEPR panel recommended (3) that the reportsummarize the likely long-term sediment management strategies, including anticipated life span and potential alternatives for extending the life of specific alternatives. In response, additional discussion was added to paragraphs 8, 16, 18 and 22 of the Engineering Appendix and to the Preliminary Assessment Update. Annual maintenance has been performed for roughly 50 years without any issue with disposal capacity at the beach/nearshore. Since the beach/nearshore area continually erodes, it provides adequate capacity and therefore it is not necessary to develop a new long term management plan for the project different from what is being practiced for the existing project.

5. Comment – *Low Significance*: The exact role of the Sand Transfer Plant in the overall sediment management plan is unclear.

This comment included one recommendation, which has been adopted. The comment indicates that a more detailed discussion of the role of the Sand Transfer Plant would help clarify the plan formulation.

USACE Response: Adopted

Action Taken: The IEPR recommended (1) that Section 2 and 5 be expanded to explain the role of the Sand Transfer Plant in sediment management including capacities, sediment sources, sediment destinations, and cost implications. In response, the recommended additional information about the sand transfer plant was added to the main report in Section 2.4.6 and Section 5.4.6, as well as to the executive summary.

6. Comment – *Low Significance*: Inconsistencies in the description of estimated shoaling rates makes it difficult to determine whether shoaling rates are expected to decrease, maintain, or increase.

This comment included one recommendation, which has been adopted. The comment concern is that clear statements on current and future shoaling rates are necessary to understand the impact of the project.

USACE Response: Adopted

Action Taken: The IEPR panel recommended (1) revising the report to clearly state the current and future shoaling rates in Chapters 2 and 4. In response, shoaling rates for existing and future conditions were clarified in the main report in the Executive Summary, in Section 4.2, in Section 4.7, and in Section 5.4.2. The main report was revised to make shoaling information more clear for existing and future conditions. The predicted increase in maintenance dredging volume for the Inner Harbor is estimated to be 1,636 cy/yr. The existing average annual maintenance volume for the Entrance Channel is 100,000 cy/yr. The predicted increase in maintenance dredging for the Entrance Channel is negligible (1000 cy/yr) since there is a finite amount of material in the coastal littoral system that moves generally from north to south regardless of the changes to the

Navigation project. Therefore, the existing shoaling is now approximately the same as the future shoaling, which is 100,000 cy per year.

7. Comment – *Low Significance*. The cumulative impacts section does not discuss changes in air quality or noise associated with operations at the port.

This comment included two recommendations, which have both been adopted. This comment indicated that by addressing air impacts and noise associated with the proposed project, the report could demonstrate a net environmental benefit through potential reductions in air emissions, noise levels, and noise duration.

USACE Response: Adopted

Action Taken: The IEPR panel recommended (1) that the cumulative impacts of air quality and noise be added to Section 5.5.4 and Table 5-3. In response, cumulative impact discussions on these topics were added to Section 5.5.4 and Table 5-11. The IEPR panel recommended (2) that the report cite any expected relationships between changes in port operation air emissions and noise levels or duration. In response, qualitative discussions of relationships between changes in port operations air emissions and noise levels/durations were added to Sections 5.5.9 and 5.5.10 of the main report.