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Final Independent External Peer Review Report Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor



Prepared by
Battelle Memorial Institute

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Deep Draft Navigation Planning Center of Expertise
Mobile District

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**Final Independent External Peer Review Report
on the
Draft Integrated Feasibility Report and Environmental Impact Statement
Lake Worth Inlet, Palm Beach Harbor
by**

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Final Independent External Peer Review Report on the Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor

EXECUTIVE SUMMARY

Project Background and Purpose

Lake Worth Inlet connects the Palm Beach Harbor to the Atlantic Ocean. The port is located in Riviera Beach, Palm Beach County, Florida – 80 miles north of Miami and 135 miles (217 km) south of Port Canaveral. The Port of Palm Beach is the fourth busiest container port in Florida and the eighteenth busiest in the continental United States. The port is positioned well for growth due to its access to intermodal capabilities, as well as its acreage available for warehousing. The port has evolved into an export port (one of only 11 in the United States) and is a major nodal point for the shipment of bulk sugar, molasses, cement, utility fuels, water, produce, and breakbulk items. In addition, the Bahamas Celebration cruise ship is based at the port. Located in the heart of south Florida's tourism enclave, the port also serves significant recreational boat traffic. The Port of Palm Beach, along with its tenants, is an economic engine for the county, state, and nation - contributing \$260 million in business revenue and \$12 million in state and Federal taxes. Over \$7 billion of commodities move through the port each year, and approximately 2,400 people are employed directly and indirectly because of the port.

Lake Worth Inlet, serving as the entrance channel to the port, is inadequate in width and depth based on modern vessel sizes, negatively impacting future port potential and creating economic inefficiencies with the current fleet of vessels. These deficiencies cause the local harbor pilots and the U.S. Coast Guard to place restrictions on vessel transit to ensure safety, resulting in economic inefficiencies translating into costs to the national economy. Implementation of the Lake Worth project would address the width and depth deficiencies currently affecting the use of this port.

Independent External Peer Review Process

The U.S. Army Corps of Engineers (USACE) is conducting an Independent External Peer Review (IEPR) of the Draft Integrated Feasibility Report and Environmental Impact Statement (IFR/EIS) Lake Worth Inlet, Palm Beach Harbor (hereinafter Lake Worth Inlet). As a 501(c)(3) non-profit science and technology organization, Battelle is independent, is free from conflicts of interest (COIs), and meets the requirements for an Outside Eligible Organization (OEO) per guidance described in USACE (2012). Battelle has experience in establishing and administering peer review panels for USACE and was engaged to coordinate the IEPR of the Lake Worth Inlet IFR/EIS. Independent, objective peer review is regarded as a critical element in ensuring the reliability of scientific analyses. The IEPR was external to the agency and conducted following USACE and Office of Management and Budget (OMB) guidance described in USACE (2012) and OMB (2004). This final report describes the IEPR process, describes the panel members and their selection, and summarizes the Final Panel Comments of the IEPR Panel (the Panel).

Based on the technical content of the Lake Worth Inlet review documents and the overall scope of the project, Battelle identified candidates for the Panel in the following key technical areas: Civil Works planning, engineering, economics, and environment. Four panel members were selected for the IEPR. USACE was given the list of candidate panel members, but Battelle made the final selection of the Panel.

The Panel received an electronic version of the 1355-page Lake Worth Inlet IEPR document, along with a charge that solicited comments on specific sections of the documents to be reviewed and supporting documents with background information. Battelle prepared the charge questions following guidance provided in USACE (2012) and OMB (2004), which were included in the draft and final Work Plans. USACE was given the opportunity to review and comment on the charge questions, and subsequently approved the final charge questions.

The USACE Project Delivery Team briefed the Panel and Battelle during a kick-off meeting held via teleconference prior to the start of the review to provide the Panel an opportunity to ask questions of USACE and clarify uncertainties. Other than this teleconference, there was no direct communication between the Panel and USACE during the peer review process. The Panel produced more than 96 individual comments in response to the 38 charge questions.

IEPR panel members reviewed the Lake Worth Inlet documents individually. The panel members then met via teleconference with Battelle to review key technical comments, discuss charge questions for which there were conflicting responses, and reach agreement on the Final Panel Comments to be provided to USACE. Each Final Panel Comment was documented using a four-part format consisting of: (1) a comment statement; (2) the basis for the comment; (3) the significance of the comment (high, medium, or low); and (4) recommendations on how to resolve the comment. Overall, seven Final Panel Comments were identified and documented. Of these, two were identified as having high significance, one had medium significance, and four had low significance.

Results of the Independent External Peer Review

The panel members agreed among themselves on their “assessment of the adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used” (USACE, 2012; p. D-4) in the Lake Worth Inlet review documents. The following summarizes the Panel’s findings.

Based on the Panel’s review, the report is well-written, organized, and provides an excellent presentation and support of information through the use of photographs, maps, diagrams, tables, and appendices. The Executive Summary is very clear and focused and effectively summarizes the planning and decision-making process for the project. While the report assessed the economic, engineering, and environmental issues of the Lake Worth Inlet project, the Panel identified several elements of the report that should be clarified or revised.

Plan Formulation

The Panel found that the Plan Formulation process is easy to follow and the assumptions, methodologies, and results provide a well-reasoned basis for selecting the Tentatively Selected Plan. The report describes the dredged material placement alternatives, but lacks adequate detail to assess the degree of risk associated with accommodating the sediment volumes generated by project construction and annual maintenance of the settling basins and channels. This important risk should be acknowledged and resolved through a comprehensive plan for disposal of all dredged material.

Engineering

The report provides adequate levels of detail for most aspects of the project, but does not describe clearly the role of the Sand Transfer Plant in sediment management. Shoaling estimates cited in the text are inconsistent, and the text does not state clearly whether shoaling is expected to decrease, increase, or remain the same. These two issues can be addressed by providing a clear statement of anticipated with-project shoaling rates and sediment volumes, and a description of the extent to which the Sand Transfer Plant would help manage these volumes for the life of the project.

Economics

The Panel's most significant finding relates to the commodity forecast and vessel costing documentation. While the 2017-2067 commodity growth forecasts appear reasonable, the assumed growth between now and 2017 is not adequately supported by the report documentation and raises questions about the reliability of the benefits estimates. Illustrations and tables are used effectively to present the economic documentation within the report. Documentation on vessel operations and costing, however, is insufficient to validate the vessel cost savings estimates. This information may be available, but has not been provided to the Panel, and thus the Panel is concerned that the project's national economic development (NED) benefits may not support the benefit-cost ratio (BCR).

Environmental

Environmental documentation is thorough and comprehensive throughout the document, and provides an adequate environmental justification for the Tentatively Selected Plan. The Panel is concerned that the lack of data for sediment quality results in uncertainty about placement measures, including beneficial uses. The Panel believes this can be addressed by presenting an assessment of the worst-case scenario for sediment disposal options, wherein the material to be dredged is unsuitable for disposal in the ODMDS, or the USEPA declines to allow disposal of more than 500,000 CY of dredged material in the ODMDS. Cumulative impacts are presented well, but should address noise and air quality.

Table ES-1 lists the Final Panel Comments statements by level of significance. The full text of the Final Panel Comments is presented in Appendix A of this report.

Table ES-1. Overview of Seven Final Panel Comments Identified by the Lake Worth Inlet IEPR Panel

No.	Final Panel Comment
Significance – High	
1	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.
2	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.
Significance – Medium	
3	The vessel cost savings for benefiting commodities cannot be verified from the documentation provided.
4	The long-term storage capacities of each dredged material management alternative have not been presented in sufficient detail to determine if, collectively, they are adequate for this project.
Significance – Low	
5	The exact role of the Sand Transfer Plant in the overall sediment management plan is unclear.
6	Inconsistencies in the description of estimated shoaling rates makes it difficult to determine whether shoaling rates are expected to decrease, maintain, or increase.
7	The cumulative impacts section does not discuss changes in air quality or noise associated with operations at the port.

Table of Contents

EXECUTIVE SUMMARY	i
1. INTRODUCTION	1
2. PURPOSE OF THE IEPR	1
3. METHODS	2
3.1 Planning and Schedule	2
3.2 Identification and Selection of IEPR Panel Members	4
3.3 Conduct of the IEPR	7
3.4 Review of Individual Comments.....	8
3.5 IEPR Panel Teleconference.....	9
3.6 Preparation of Final Panel Comments	9
4. PANEL DESCRIPTION	10
5. SUMMARY OF FINAL PANEL COMMENTS	15
6. REFERENCES	17
Appendix A. Final Panel Comments on the Lake Worth Inlet FR/EIS	A-1
Appendix B. Final Charge to the Independent External Peer Review Panel on the Lake Worth Inlet FR/EIS	B-1

List of Tables

Table ES-1. Overview of Seven Final Panel Comments Identified by the Lake Worth Inlet IEPR Panel	iv
Table 1. Lake Worth Inlet IEPR Schedule	3
Table 2. Lake Worth Inlet IEPR Panel: Technical Criteria and Areas of Expertise	11
Table 3. Overview of Seven Final Panel Comments Identified by the Lake Worth Inlet IEPR Panel	17

LIST OF ACRONYMS

ATR	Agency Technical Review
BCR	Benefit-Cost Ratio
CAGR	Compound Annual Growth Rate
COI	Conflict of Interest
DrChecks	Design Review and Checking System
DWT	Dead weight tonnage
EA	Environmental Assessment
FPL	Florida Power and Light
IEPR	Independent External Peer Review
IFR/EIS	Integrated Feasibility Report/Environmental Impact Statement
NED	National Economic Development
NEPA	National Environmental Policy Act
ODMDS	Ocean Dredged Material Disposal Site
OEO	Outside Eligible Organization
OMB	Office of Management and Budget
P&G	Principles and Guidelines
PDT	Project Delivery Team
STP	Sand Transfer Plant
TSP	Tentatively Selected Plan
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources Development Act

1. INTRODUCTION

Lake Worth Inlet connects the Palm Beach Harbor to the Atlantic Ocean. The port is located in Riviera Beach, Palm Beach County, Florida – 80 miles north of Miami and 135 miles (217 km) south of Port Canaveral. The Port of Palm Beach is the fourth busiest container port in Florida and the eighteenth busiest in the continental United States. The port is positioned well for growth due to its access to intermodal capabilities, as well as its acreage available for warehousing. The port has evolved into an export port (one of only 11 in the United States) and is a major nodal point for the shipment of bulk sugar, molasses, cement, utility fuels, water, produce, and breakbulk items. In addition, the Bahamas Celebration cruise ship is based at the port. Located in the heart of south Florida’s tourism enclave, the port also serves significant recreational boat traffic. The Port of Palm Beach, along with its tenants, is an economic engine for the county, state, and nation - contributing \$260 million in business revenue and \$12 million in state and Federal taxes. Over \$7 billion of commodities move through the port each year, and approximately 2,400 people are employed directly and indirectly because of the port.

Lake Worth Inlet, serving as the entrance channel to the port, is inadequate in width and depth based on modern vessel sizes, negatively impacting future port potential and creating economic inefficiencies with the current fleet of vessels. These deficiencies cause the local harbor pilots and the U.S. Coast Guard to place restrictions on vessel transit to ensure safety, resulting in economic inefficiencies translating into costs to the national economy. Implementation of the Lake Worth project would address the width and depth deficiencies currently affecting the use of this port.

The objective of the work described here was to conduct an Independent External Peer Review (IEPR) of the Draft Integrated Feasibility Report and Environmental Impact Statement (IFR/EIS) Lake Worth Inlet, Palm Beach Harbor (hereinafter Lake Worth Inlet) in accordance with procedures described in the Department of the Army, U.S. Army Corps of Engineers (USACE) Engineer Circular (EC) *Civil Works Review* (EC 1165-2-214) (USACE, 2012) and Office of Management and Budget (OMB) bulletin *Final Information Quality Bulletin for Peer Review* (OMB, 2004). Independent, objective peer review is regarded as a critical element in ensuring the reliability of scientific analyses.

This final report details the IEPR process, describes the IEPR panel members and their selection, and summarizes the Final Panel Comments of the IEPR Panel on the existing environmental, economic, and engineering analyses contained in the Lake Worth Inlet FR/EIS. The full text of the Final Panel Comments is presented in Appendix A.

2. PURPOSE OF THE IEPR

To ensure that USACE documents are supported by the best scientific and technical information, USACE has implemented a peer review process that uses IEPR to complement the Agency Technical Review (ATR), as described in USACE (2012).

In general, the purpose of peer review is to strengthen the quality and credibility of the USACE decision documents in support of its Civil Works program. The IEPR provides an independent assessment of the economic, engineering, and environmental analysis of the project study. In particular, the IEPR addresses the technical soundness of the project study's assumptions, methods, analyses, and calculations and identifies the need for additional data or analyses to make a good decision regarding implementation of alternatives and recommendations.

In this case, the IEPR of the Lake Worth Inlet was conducted and managed using contract support from Battelle, which is an Outside Eligible Organization (OEO) (as defined by EC 1165-2-214) under Section 501(c)(3) of the U.S. Internal Revenue Code with experience conducting IEPRs for USACE.

3. METHODS

This section describes the method followed in selecting the members for the IEPR Panel (the Panel) and in planning and conducting the IEPR. The IEPR was conducted following procedures described by USACE (2012) and in accordance with OMB (2004) guidance. Supplemental guidance on evaluation for conflicts of interest (COIs) was obtained from the *Policy on Committee Composition and Balance and Conflicts of Interest for Committees Used in the Development of Reports* (The National Academies, 2003).

3.1 Planning and Schedule

After receiving the notice to proceed (NTP), Battelle held a kick-off meeting with USACE to review the preliminary/suggested schedule, discuss the IEPR process, and address any questions regarding the scope (e.g., clarify expertise areas needed for panel members). Any revisions to the schedule were submitted as part of the final Work Plan. Battelle developed 38 charge questions. USACE was given the opportunity to provide comments and revisions, and subsequently approved the final charge questions, which were included in the draft and final Work Plans. The final charge included general guidance for the Panel on the conduct of the peer review (provided in Appendix B of this final report).

Table 1 presents the schedule followed in executing the IEPR. Due dates for milestones and deliverables are based on the NTP date of May 9, 2013. The review documents were provided by USACE on May 9, 2013. Note that the work items listed in Task 7 occur after the submission of this report. Battelle will enter the seven Final Panel Comments developed by the Panel into USACE's Design Review and Checking System (DrChecks), a Web-based software system for documenting and sharing comments on reports and design documents, so that USACE can review and respond to them. USACE will provide responses (Evaluator Responses) to the Final Panel Comments, and the Panel will respond (BackCheck Responses) to the Evaluator Responses. All USACE and Panel responses will be documented by Battelle. Battelle will provide USACE and the Panel a pdf printout of all DrChecks entries, through comment closure, as a final deliverable and record of the IEPR results.

Table 1. Lake Worth Inlet IEPR Schedule

Task	Action	Due Date
	Notice to Proceed	5/9/2013
	Review documents available	5/9/2013
1	Battelle submits draft Work Plan ^a	5/15/2013
	USACE provides comments on draft Work Plan	5/21/2013
	Battelle submits final Work Plan ^a	5/22/2013
	Battelle requests input from USACE on the conflict of interest (COI) questionnaire	5/10/2013
	USACE provides comments on COI questionnaire	5/10/2013
2	Battelle submits list of selected panel members ^a	5/13/2013
	USACE confirms the panel members have no COI	5/14/2013
	Battelle completes subcontracts for panel members	5/20/2013
3	Battelle submits draft Charge in Work Plan	5/15/2013
	Battelle convenes kick-off meeting with USACE	5/16/2013
	Battelle sends review documents to panel members	5/21/2013
4	Battelle convenes kick-off meeting with panel members	5/22/2013
	Battelle convenes kick-off meeting with USACE and panel members	5/22/2013
	Battelle convenes mid-review teleconference for panel members to ask clarifying questions of USACE	5/29/2013
	Panel members complete their individual reviews	5/31/2013
	Battelle provides panel members with talking points for Panel Review Teleconference	6/4/2013
5	Battelle convenes Panel Review Teleconference	6/5/2013
	Panel members provide draft Final Panel Comments to Battelle	6/12/2013
	Battelle provides feedback to panel members on draft Final Panel Comments; panel members revise Final Panel Comments	6/12-6/18/2013
	Battelle finalizes Final Panel Comments	6/18/2013
	Battelle provides Final IEPR Report to panel members for review	6/19/2013
6	Panel members provide comments on Final IEPR Report	6/20/2013
	Battelle submits Final IEPR Report to USACE ^a	6/24/2013

Table 1. Lake Worth Inlet IEPR Schedule (continued)

Task	Action	Due Date
	Battelle inputs Final Panel Comments to DrChecks and provides Final Panel Comment response template to USACE	6/25/2013
	Battelle convenes teleconference with USACE to review the Post-Final Panel Comment Response Process	6/26/2013
	Battelle convenes teleconference with Panel to review the Post-Final Panel Comment Response Process	6/26/2013
	USACE provides draft PDT Evaluator Responses to Battelle	6/27/2013
	Battelle provides the panel members the draft PDT Evaluator Responses	6/28/2013
	Panel members provide Battelle with draft BackCheck Responses	7/2/2013
7 ^b	Battelle convenes teleconference with panel members to discuss draft BackCheck Responses	7/2/2013
	Battelle convenes Comment-Response Teleconference with panel members and USACE	7/8/2013
	USACE inputs final PDT Evaluator Responses to DrChecks	7/9/2013
	Battelle provides PDT Evaluator Responses to panel members	7/10/2013
	Panel members provide Battelle with final BackCheck Responses	7/11/2013
	Battelle inputs the panel members' final BackCheck Responses to DrChecks	7/12/2013
	Battelle submits pdf printout of DrChecks project file ^a	7/12/2013
CWRB	Civil Works Review Board	10/25/2013
	Contract End	10/8/2013 ^c

a Deliverable.

b Task 7 occurs after the submission of this report.

c Battelle will request a no cost extension of the period of performance to allow for participation in the CWRB and an additional 45 days to close out the project.

3.2 Identification and Selection of IEPR Panel Members

The candidates for the Panel were evaluated based on their technical expertise in the following key areas: Civil Works planning, engineering, economics, and environment. These areas correspond to the technical content of the Lake Worth Inlet IEPR and overall scope of the Lake Worth Inlet project.

To identify candidate panel members, Battelle reviewed the credentials of the experts in Battelle's Peer Reviewer Database, sought recommendations from colleagues, contacted former panel members, and conducted targeted Internet searches. Battelle evaluated these candidate panel members in terms of their technical expertise and potential COIs. Of these candidates, Battelle chose the most qualified candidates and confirmed their interest and availability, and ultimately selected four experts for the final Panel.

The four selected reviewers constituted the final Panel. The remaining candidates identified were not proposed for a variety of reasons, including lack of availability, disclosed COIs, or lack of the precise technical expertise required.

The candidates were screened for the following potential exclusion criteria or COIs.¹ These COI questions were intended to serve as a means of disclosure and to better characterize a candidate's employment history and background. Providing a positive response to a COI screening question did not automatically preclude a candidate from serving on the Panel. For example, participation in previous USACE technical peer review committees and other technical review panel experience was included as a COI screening question. A positive response to this question could be considered a benefit.

- Previous and/or current involvement by you or your firm² in the Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor.
- Previous and/or current involvement by you or your firm² in deep draft navigation projects in the South Florida and Palm Beach Harbor region.
- Previous and/or current involvement by you or your firm² in the Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor related projects.
- Previous and/or current involvement by you or your firm² in the conceptual or actual design, construction, or O&M of any projects in the Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor related projects.
- Current employment by the U.S. Army Corps of Engineers (USACE).
- Previous and/or current involvement with paid or unpaid expert testimony related to Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor.
- Previous and/or current employment or affiliation with the non-Federal sponsors or any of the following cooperating Federal, State, County, local and regional agencies, environmental organizations, and interested groups: Port of Palm Beach, FL; Town of Palm Beach, FL; or Palm Beach County, FL (for pay or pro bono).
- Past, current, or future interests or involvements (financial or otherwise) by you, your spouse, or children related to South Florida and Palm Beach Harbor region.

¹ Battelle evaluated whether scientists in universities and consulting firms that are receiving USACE-funding have sufficient independence from USACE to be appropriate peer reviewers. See OMB (2004, p. 18), "...when a scientist is awarded a government research grant through an investigator-initiated, peer-reviewed competition, there generally should be no question as to that scientist's ability to offer independent scientific advice to the agency on other projects. This contrasts, for example, to a situation in which a scientist has a consulting or contractual arrangement with the agency or office sponsoring a peer review. Likewise, when the agency and a researcher work together (e.g., through a cooperative agreement) to design or implement a study, there is less independence from the agency. Furthermore, if a scientist has repeatedly served as a reviewer for the same agency, some may question whether that scientist is sufficiently independent from the agency to be employed as a peer reviewer on agency-sponsored projects."

² Includes any joint ventures in which a panel member's firm is involved and if the firm serves as a prime or as a subcontractor to a prime.

- Current personal involvement with other USACE projects, including whether involvement was to author any manuals or guidance documents for USACE. If yes, provide titles of documents or description of project, dates, and location (USACE district, division, Headquarters, ERDC, etc.), and position/role. Please highlight and discuss in greater detail any projects that are specifically with the Jacksonville District.
- Previous or current involvement with the development or testing of models that will be used for or in support of the Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor project.
- Current firm² involvement with other USACE projects, specifically those projects/contracts that are with the Jacksonville District. If yes, provide title/description, dates, and location (USACE district, division, Headquarters, ERDC, etc.), and position/role. Please also clearly delineate the percentage of work you personally are currently conducting for the Jacksonville District. Please explain.
- Any previous employment by the USACE as a direct employee, notably if employment was with the Jacksonville District. If yes, provide title/description, dates employed, and place of employment (district, division, Headquarters, ERDC, etc.), and position/role.
- Any previous employment by the USACE as a contractor (either as an individual or through your firm²) within the last 10 years, notably if those projects/contracts are with the Jacksonville District. If yes, provide title/description, dates employed, and place of employment (district, division, Headquarters, ERDC, etc.), and position/role.
- Previous experience conducting technical peer reviews. If yes, please highlight and discuss any technical reviews concerning deep draft navigation, and include the client/agency and duration of review (approximate dates).
- Pending, current or future financial interests in Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor related contracts/awards from USACE.
- A significant portion (i.e., greater than 50%) of personal or firm² revenues within the last 3 years came from USACE contracts.
- A significant portion (i.e., greater than 50%) of personal or firm² revenues within the last 3 years from contracts with the non-federal sponsor:
 - Port of Palm Beach, FL
 - Town of Palm Beach, FL
 - Palm Beach County, FL
- Any publicly documented statement (including, for example, advocating for or discouraging against) related to Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor.
- Participation in relevant prior Federal studies relevant to this project and/or Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor.
 - Feasibility Report and Environmental Assessment, Palm Beach Harbor, Florida. 1984.

- Environmental Impact Statement, Coast of Florida Erosion and Storm Effects Study Region III, Palm Beach, Broward, and Dade Counties, Florida. October 1996.
- Environmental Assessment and Finding of No Significant Impact, Maintenance Dredging, Palm Beach Harbor, Palm Beach County, Florida. October 1998.
- Environmental Assessment, Section 107 Small Navigation Project, Palm Beach Harbor, Lake Worth Access Channel Expansion, Palm Beach County, Florida. 2001.
- Environmental Assessment, Sand Transfer Plant Rehabilitation and Extended Outfall, Palm Beach Harbor Lake Worth Inlet, Palm Beach County, Florida. May 2004.
- Revised Environmental Assessment, Sand Transfer Plant Rehabilitation and Addition of Second Discharge Point and Permanent Booster Pump, Palm Beach Harbor, Lake Worth Inlet, Palm Beach County, Florida. August 2006.
- Environmental Assessment, Palm Beach Harbor Operations and Maintenance Activities, Palm Beach Harbor, Lake Worth Inlet, Palm Beach County, Florida. January 2012.
- Previous and/or current participation in prior non-Federal studies relevant to this project and/or Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor.
- Is there any past, present or future activity, relationship, or interest (financial or otherwise) that could make it appear that you would be unable to provide unbiased services on this project? If so, please describe:

In selecting the final members of the Panel, Battelle chose experts who best fit the expertise areas and had no COIs. One of the four final reviewers is affiliated with an academic institution and the other three are affiliated with consulting companies. Battelle established subcontracts with the panel members when they indicated their willingness to participate and confirmed the absence of COIs through a signed COI form. USACE was given the list of candidate panel members, but Battelle made the final selection of the Panel. Section 4 of this report provides names and biographical information on the panel members.

3.3 Conduct of the IEPR

Prior to beginning their review and within one day of their subcontracts being finalized, all members of the Panel attended a kick-off meeting via teleconference planned and facilitated by Battelle in order to review the IEPR process, the schedule, communication procedures, and other pertinent information for the Panel. Battelle planned and facilitated a second kick-off meeting via teleconference during which USACE presented project details to the Panel. Before the meetings, the IEPR Panel received an electronic version of the final charge as well as the Lake Worth Inlet review documents and reference materials listed below. The documents and files in bold font were provided for review; the other documents were provided for reference or supplemental information only.

- **Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor, Palm Beach County, Florida (182 pages)**

- **Appendix A, Engineering (472 pages)**
- **Appendix B, Engineering (Cost Engineering and Risk Analysis; 146 pages)**
- **Appendix C, Socio-economics (74 pages)**
- **Appendix D, Section 404 and Mitigation (167 pages)**
- **Appendix E, Summary of Public Comments (281 pages)**
- **Appendix F, Real estate plan (16 pages)**
- **Appendix G, Preliminary Assessment Update (17 pages)**
- Risk Register
- Environmental Assessment and Finding of No Significant Impact, Maintenance Dredging, Palm Beach Harbor, Palm Beach County, Florida, October 1998
- Environmental Assessment, Palm Beach Harbor Operations and Maintenance Activities, Palm Beach Harbor-Lake Worth Inlet, Palm Beach County, Florida, January 2012
- Revised Environmental Assessment, Sand Transfer Plant Rehabilitation and Extended Outfall, Palm Beach Harbor Point and Permanent Booster Pump, Palm Beach Harbor-Lake Worth Inlet, Palm Beach County, Florida, August 2006
- USACE guidance Civil Works Review, (EC 1165-2-214) dated 15 December 2012
- Office of Management and Budget's *Final Information Quality Bulletin for Peer Review* released December 16, 2004.

In addition, throughout the review period, USACE provided documents at the request of panel members. The following documents were provided to Battelle and then sent to the Panel as additional information only and were not part of the official review:

- U.S. Fish and Wildlife Consultation Letter
- Lake Worth Feasibility Study Economic Model Documentation (Draft October 2012).

About halfway through the review of the Lake Worth Inlet review documents, a teleconference was held with USACE, the Panel, and Battelle so that USACE could answer any questions the Panel had concerning either the review documents or the project. Prior to this teleconference, Battelle submitted 11 panel member questions to USACE. USACE was able to provide responses to some of the questions during the teleconference; the remaining panel member questions that required additional coordination within USACE were addressed by USACE by June 12, 2013.

3.4 Review of Individual Comments

The Panel was instructed to address the charge questions/discussion points within a charge question response table provided by Battelle. At the end of the review period, the Panel produced 96 individual comments in response to the charge questions/discussion points. Battelle reviewed the comments to identify overall recurring themes, areas of potential conflict, and other general impressions. As a result of the review, Battelle summarized the 96 comments into a preliminary

list of 10 overall comments and discussion points. Each panel member's individual comments were shared with the full Panel in a merged individual comments table.

3.5 IEPR Panel Teleconference

Battelle facilitated a 3-hour teleconference with the Panel so that the panel members could exchange technical information. The main goal of the teleconference was to identify which issues should be carried forward as Final Panel Comments in the Final IEPR Report and decide which panel member would serve as the lead author for the development of each Final Panel Comment. This information exchange ensured that the Final IEPR Report would accurately represent the Panel's assessment of the project, including any conflicting opinions. The Panel engaged in a thorough discussion of the overall positive and negative comments, added any missing issues of high-level importance to the findings, and merged any related individual comments. In addition, Battelle confirmed each Final Panel Comment's level of significance to the Panel.

The Panel also discussed responses to a charge question where there appeared to be disagreement among panel members. The conflicting comments were resolved based on the professional judgment of the Panel, and all sets of comments were determined not to be conflicting. Each comment was determined to be consistent with other Final Panel Comments already developed.

At the end of these discussions, the Panel identified seven comments and discussion points that should be brought forward as Final Panel Comments.

3.6 Preparation of Final Panel Comments

Following the teleconference, Battelle prepared a summary memorandum for the Panel documenting each Final Panel Comment (organized by level of significance). The memorandum provided the following detailed guidance on the approach and format to be used to develop the Final Panel Comments for the Lake Worth Inlet Draft IFR/EIS:

- **Lead Responsibility:** For each Final Panel Comment, one Panel member was identified as the lead author responsible for coordinating the development of the Final Panel Comment and submitting it to Battelle. Battelle modified lead assignments at the direction of the Panel. To assist each lead in the development of the Final Panel Comments, Battelle distributed the merged individual comments table, a summary detailing each draft final comment statement, an example Final Panel Comment following the four-part structure described below, and templates for the preparation of each Final Panel Comment.
- **Directive to the Lead:** Each lead was encouraged to communicate directly with the other panel member as needed and to contribute to a particular Final Panel Comment. If a significant comment was identified that was not covered by one of the original Final Panel Comments, the appropriate lead was instructed to draft a new Final Panel Comment.
- **Format for Final Panel Comments:** Each Final Panel Comment was presented as part of a four-part structure:
 1. Comment Statement (succinct summary statement of concern)
 2. Basis for Comment (details regarding the concern)
 3. Significance (high, medium, low; see description below)

4. Recommendation(s) for Resolution (see description below).
- **Criteria for Significance:** The following were used as criteria for assigning a significance level to each Final Panel Comment:
 1. **High:** Describes a fundamental problem with the project that could affect the recommendation, success, or justification of the project. Comments rated as high indicate that the Panel analyzed or assessed the methods, models, and/or analyses and determined that there is a “showstopper” issue.
 2. **Medium:** Affects the completeness of the report in describing the project, but will not affect the recommendation or justification of the project. Comments rated as medium indicate that the Panel does not have sufficient information to analyze or assess the methods, models, or analyses.
 3. **Low:** Affects the understanding or accuracy of the project as described in the report, but will not affect the recommendation or justification of the project. Comments rated as low indicate that the Panel identified information (tables, figures, equations, discussions) that was mislabeled or incorrect or data or report sections that were not clearly described or presented.
 - **Guidance for Developing Recommendations:** The recommendation section was to include specific actions that USACE should consider to resolve the Final Panel Comment (e.g., suggestions on how and where to incorporate data into the analysis, how and where to address insufficiencies, areas where additional documentation is needed).

Battelle reviewed and edited the Final Panel Comments for clarity, consistency with the comment statement, and adherence to guidance on the Panel’s overall charge, which included ensuring that there were no comments regarding either the appropriateness of the selected alternative or USACE policy. At the end of this process, seven Final Panel Comments were prepared and assembled. There was no direct communication between the Panel and USACE during the preparation of the Final Panel Comments. The Final Panel Comments are presented in Appendix A of this report.

4. PANEL DESCRIPTION

Candidates for the Panel were identified using Battelle’s Peer Reviewer Database, targeted Internet searches using key words (e.g., technical area, geographic region), searches of websites of universities or other compiled expert sites, and referrals. Battelle prepared a draft list of primary and backup candidate panel members (who were screened for availability, technical background, and COIs), and provided it to USACE for feedback. Battelle made the final selection of panel members.

An overview of the credentials of the final four members of the Panel and their qualifications in relation to the technical evaluation criteria is presented in Table 2. More detailed biographical information regarding each panel member and his or her area of technical expertise is presented in the text that follows the table.

Table 2. Lake Worth Inlet IEPR Panel: Technical Criteria and Areas of Expertise

Technical Criterion	Hayes	Smith	Vittor	Ulrich
Engineering				
Minimum 10 years of experience in civil or hydraulic engineering	X			
Registered Professional Engineer	X			
Demonstrated experience in deep draft navigation channels	X			
Demonstrated experience in dredged material disposal	X			
Demonstrated experience in erosion	X			
Demonstrated experience in coastal currents	X			
Demonstrated experience in channel modification	X			
Active participant in related professional societies is encouraged	X			
M.S. degree or higher in civil, hydraulic or related engineering field	X			
Economics				
Minimum 10 years of experience in deep draft navigation economic analysis		X		
Project experience in evaluating and comparing alternative plans for USACE		X		
Project experience in evaluating and conducting National Economic Development (NED) analysis of deep draft navigation or inland navigation transportation-related projects		X		
Experience working directly for, or with, USACE in applying Principles and Guidelines (P&G) to Civil Works project evaluations		X		
Active participant in related professional societies is encouraged		X		
Minimum M.A./M.S./MBA degree		X		
Environmental				
Minimum 10 years of experience in environmental, estuarine, and coastal and estuarine processes			X	
Understanding of ecological responses to navigation channel improvements			X	
Understanding of environmental impacts associated with dredging			X	
Experience in the preparation of National Environmental Policy Act (NEPA) compliance documents			X	
Active participant in related professional societies is encouraged				
M.S. degree or higher in appropriate field of study			X	

Table 2. Lake Worth Inlet IEPR Panel: Technical Criteria and Areas of Expertise (continued)

Technical Criterion	Hayes	Smith	Vittor	Ulrich
Plan Formulation				
Minimum 10 years of experience in deep draft navigation analysis				X
Project experience in evaluating and comparing alternative plans for USACE				X
Project experience in evaluating and conducting National Economic Development (NED) analysis of deep draft navigation or inland navigation transportation-related projects				X
Experience working directly for, or with, USACE in applying Principles and Guidelines (P&G) to Civil Works project evaluations				X
Active participant in related professional societies is encouraged				X
Minimum M.A./M.S. degree				X

Donald Hayes, Ph.D., P.E., BCEE

Role: This panel member was chosen primarily for his civil engineering experience and expertise.

Affiliation: University of Las Vegas, Nevada

Dr. Hayes is the Department Chair and a professor in the Department of Civil & Environmental Engineering and Construction at the University of Nevada, Las Vegas. He is also Director of the Nevada Universities Transportation Center, and Director (1 of 10) of the Mineta National Transit Research Center. He earned his B.S and M.S. in civil engineering from Mississippi State University and his Ph.D. in civil engineering from Colorado State University. Dr. Hayes is a Board Certified Environmental Engineer, and a registered Professional Engineer in Louisiana, Mississippi, and Nevada. He has more than 30 years of experience in both academia and consulting, including 10 years of experience working with USACE at the Waterways Experimental Station.

Dr. Hayes has experience in deep draft navigation channel design and has performed work for many large U.S. ports, including Houston SC, Port of New York and New Jersey, Norfolk, Oakland, San Francisco, and Charleston. The focus of these projects has been primarily related to dredging and sediment management in these navigation channels. In addition, he has extensive experience in dredged material management and beneficial uses of dredge sediments, and has authored guidance documents and technical papers on these subjects. He is familiar with environmental dredging, open water and confined placement techniques for dredge material management, including contaminated sediments.

He was an original developer of the ADDAMS system distributed by the USACE Engineer Research and Development Center and is intimately familiar with the current available software

for managing dredged sediments. Dr. Hayes extensively used SedFlume and model results for estimating erosion due to prop wash and vessel movement including authoring papers and reports on the subject. Dr. Hayes has taught courses on coastal hydraulics using his knowledge of coastal hydraulics and wave processes and familiarity with coastal currents, tides, extreme events, and channel modifications for traffic safety and increased vessel size through work on various ports and harbors. He is a member of several engineering committees and societies, including the American Society of Civil Engineers and the Western Dredging Association (Board of Directors), and was a member of the PIANC/ASCE Dredging 2012 planning committee.

Daniel Smith

Role: This panel member was chosen primarily for his economics experience and expertise.

Affiliation: The Tioga Group, Inc.

Mr. Smith is a Principal and Founder of the Tioga Group, Inc., a consulting firm specializing in freight transportation and logistics, whose clients include ports, railroads, shippers, leasing companies, industry organizations, and government agencies. He holds a B.A. in mathematics and a M.A. in public policy from the University of California at Berkeley. Mr. Smith did further postgraduate work in transportation economics and policy. He is a former Adjunct Professor at Golden Gate University in San Francisco, where he taught introductory courses in transportation.

Mr. Smith has over 30 years of consulting experience in freight transportation strategy, policy, and planning, with particular emphasis on truck, rail, and marine intermodal transportation. He has performed deep-draft port studies for the Ports of Los Angeles, Long Beach, Oakland, Richmond, Stockton, Redwood City, New York and New Jersey, Seattle, and Vancouver. Mr. Smith has also led analyses of container port capacity, the maritime transportation system outlook, and the U.S. inland waterways system outlook for the USACE Institute for Water Resources. Mr. Smith has evaluated and compared alternative plans for USACE during his work on USACE projects for the Port of Freeport, Chesapeake Bay, and Sabine-Neches Waterway. He has experience evaluating and conducting National Economic Development (NED) analyses of deep draft navigation and inland navigation transportation projects including USACE project in Delaware Bay, Port Iberia, and the Sabine-Neches Waterway.

He has served on multiple IEPR panels between 2002 and 2011, most recently as the economics reviewer for the Freeport Harbor Channel Deepening Project. Mr. Smith has experience working with USACE in applying Principles and Guidelines (P&G) to Civil Works projects through his participation on previous reviews, notably Port Sacramento, Port of Freeport, and Columbia River.

Mr. Smith has written numerous publications and frequently speaks at industry and public sector conferences. Recent examples include “Container Port Capacity and Utilization Metrics, Diagnosing the Marine Transportation System, USACE, June 2012”, “Estimating U.S. Container Port Capacity And Utilization, TRB 92nd Annual Meeting, Ports and Channels Committee January, 2013” and “Port Drayage, Productivity, and Capacity: Results of Three New Studies, TransPacific Maritime Conference, March 2010.” Mr. Smith participates in relevant professional societies and is currently active in Transportation Research Board projects, panels, and

proceedings, and has testified before the House Judiciary Committee on the economic conditions in the world shipping industry.

Barry Vittor, Ph.D.

Role: This panel member was chosen primarily for his environmental experience and expertise.

Affiliation: Barry A. Vittor & Associates, Inc.

Dr. Vittor is President and Senior Scientist at Vittor & Associates, and has nearly 42 years of experience in studying benthic community ecology, seagrasses, and water quality in estuaries and coastal waters throughout the Southeastern United States. He earned his Ph.D. from the University of Oregon. As a Director of the Alabama Coastal Foundation and a member of the Mobile Bay National Estuary Program Management Committee, he has been very active in coastal resource management.

Dr. Vittor has studied the ecological responses of benthic communities and demersal fauna to navigation channel construction and maintenance projects. He has also conducted numerous studies to determine the ecological and environmental impacts of dredging projects on water quality, fisheries, and benthic communities in estuarine and marine environments. He has conducted numerous National Environmental Policy Act (NEPA) impact assessments for USACE, U.S. Environmental Protection Agency, and other public sector and private clients. Specifically he has prepared several environmental impact statements (EISs) concerning dredging and dredged material disposal for USACE. His NEPA experience also includes preparing EISs and environmental assessments (EAs) for post-hurricane reconstruction projects, beach renourishment, and commercial developments. Dr. Vittor has maintained and updated USACE protocols for NEPA compliance including guidance for EA and EIS preparation. In particular, he has addressed NEPA criteria for alternatives analysis, cumulative impacts, and coordination with other agencies.

Dr. Vittor has experience with the Endangered Species Act, has been involved in numerous cases of formal consultation with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service, and presently carries a Federal permit for handling certain species in the Southeast. He has evaluated coastal and offshore impacts on essential fish habitat for many types of studies including beach renourishment and sand borrow projects. He also has experience with the Marine Mammal Protection Act, including documentation and compliance. In addition, he has assessed potential impacts on marine mammals from ship traffic (collisions) and noise, for oil and gas developments in the Gulf of Mexico. Dr. Vittor has also assessed navigation improvements and construction impacts in several port areas.

Cheryl Ulrich, P.E.

Role: This panel member was chosen primarily for her plan formulation experience and expertise.

Affiliation: Weston Solutions, Inc.

Ms. Ulrich is a planner and engineer with Weston Solutions, Inc. in Atlantic Beach, Florida. She earned her M.S. in civil engineering (with an emphasis on coastal engineering and hydraulics) from the University of California at Berkeley and is a registered professional engineer in Florida.

Ms. Ulrich has over 20 years of Civil Works experience directly for USACE, including eight years as a plan formulator, eight years as a project manager, and five years as a program manager while working for Mobile and Jacksonville Districts. Through this previous work for USACE, she has direct project experience in every Civil Works mission area including deep draft navigation, flood damage reduction, coastal erosion and beach nourishment, shoreline and stream bank protection and ecosystem restoration, and is intimately familiar with the application of Principles and Guidelines (P&Gs) to Civil Works project evaluations. Ms. Ulrich has over two decades of USACE Civil Works experience in analyzing, evaluating, and comparing alternative plans with USACE.

While working for USACE Jacksonville District, Ms. Ulrich was responsible for leading the development of two major revisions to the Civil Works planning process: the first for the \$10.5B Comprehensive Everglades Restoration Program and the second with the Everglades ACCELER8 Program. Both these efforts involved team coordination with USACE South Atlantic Division, USACE Headquarters, Assistant Secretary of the Army (Civil Works), U.S. Fish and Wildlife Service, and the non-Federal sponsor.

Ms. Ulrich's project experience in evaluating and conducting NED analysis of deep draft navigation or inland navigation transportation-related projects includes her completing the Mobile District's first two General Reevaluation Reports for Panama City Hurricane and Storm Damage Reduction and Harbor Deepening Projects. These efforts were extremely challenging with complex cost-sharing calculations due to placement of dredged material from Panama City Harbor Deepening project on a portion of Panama City Beach in which the Federal government was responsible for correcting the erosion impacts caused by the Federal navigation project.

She is active in relevant professional societies, including the Society of Ecological Restoration, where she is currently on the Board of Directors and is the Chair of the Science and Policy Committee, and the American Water Resources Association, where she is a member of the Policy Committee. She is also a Co-Chair and Program Chair for the 2014 Conference on Ecological and Ecosystem Restoration.

5. SUMMARY OF FINAL PANEL COMMENTS

The panel members agreed among themselves on their "assessment of the adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used" (USACE, 2012; p. D-4) in the Lake Worth Inlet document. Table 3 lists the Final Panel Comments statements by level of significance. The full text of the Final Panel Comments is presented in Appendix A of this report. The following summarizes the Panel's findings.

Based on the Panel's review, the report is well-written, organized, and provides an excellent presentation and support of information through the use of photographs, maps, diagrams, tables, and appendices. The Executive Summary is very clear and focused and effectively summarizes the planning and decision-making process for the project. While the report assessed the economic, engineering, and environmental issues of the Lake Worth Inlet project, the Panel identified several elements of the report that should be clarified or revised.

Plan Formulation

The Panel found that the Plan Formulation process is easy to follow and the assumptions, methodologies, and results provide a well-reasoned basis for selecting the Tentatively Selected Plan. The report describes the dredged material placement alternatives, but lacks adequate detail to assess the degree of risk associated with accommodating the sediment volumes generated by project construction and annual maintenance of the settling basins and channels. This important risk should be acknowledged and resolved through a comprehensive plan for disposal of all dredged material.

Engineering

The report provides adequate levels of detail for most aspects of the project, but does not describe clearly the role of the Sand Transfer Plant in sediment management. Shoaling estimates cited in the text are inconsistent, and the text does not state clearly whether shoaling is expected to decrease, increase, or remain the same. These two issues can be addressed by providing a clear statement of anticipated with-project shoaling rates and sediment volumes, and a description of the extent to which the Sand Transfer Plant would help manage these volumes for the life of the project.

Economics

The Panel's most significant finding relates to the commodity forecast and vessel costing documentation. While the 2017-2067 commodity growth forecasts appear reasonable, the assumed growth between now and 2017 is not adequately supported by the report documentation and raises questions about the reliability of the benefits estimates. Illustrations and tables are used effectively to present the economic documentation within the report. Documentation on vessel operations and costing, however, is insufficient to validate the vessel cost savings estimates. This information may be available, but has not been provided to the Panel, and thus the Panel is concerned that the project's national economic development (NED) benefits may not support the benefit-cost ratio (BCR).

Environmental

Environmental documentation is thorough and comprehensive throughout the document, and provides an adequate environmental justification for the Tentatively Selected Plan. The Panel is concerned that the lack of data for sediment quality results in uncertainty about placement measures, including beneficial uses. The Panel believes this can be addressed by presenting an assessment of the worst-case scenario for sediment disposal options, wherein the material to be dredged is unsuitable for disposal in the ODMDS, or the USEPA declines to allow disposal of more than 500,000 CY of dredged material in the ODMDS. Cumulative impacts are presented well, but should address noise and air quality.

Table 3. Overview of Seven Final Panel Comments Identified by the Lake Worth Inlet IEPR Panel

No.	Final Panel Comment
Significance – High	
1	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.
2	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.
Significance – Medium	
3	The vessel cost savings for benefiting commodities cannot be verified from the documentation provided.
4	The long-term storage capacities of each dredged material management alternative have not been presented in sufficient detail to determine if, collectively, they are adequate for this project.
Significance – Low	
5	The exact role of the Sand Transfer Plant in the overall sediment management plan is unclear.
6	Inconsistencies in the description of estimated shoaling rates makes it difficult to determine whether shoaling rates are expected to decrease, maintain, or increase.
7	The cumulative impacts section does not discuss changes in air quality or noise associated with operations at the port.

6. REFERENCES

OMB (2004). Final Information Quality Bulletin for Peer Review. Executive Office of the President, Office of Management and Budget, Washington, D.C. Memorandum M-05-03. December 16.

The National Academies (2003). Policy on Committee Composition and Balance and Conflicts of Interest for Committees Used in the Development of Reports. The National Academies (National Academy of Science, National Academy of Engineering, Institute of Medicine, National Research Council). May 12.

USACE (2012). Water Resources Policies and Authorities: Civil Works Review. Department of the Army, US Army Corps of Engineers, Washington, D.C. Engineer Circular (EC) No. 1165-2-214. December 15.

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APPENDIX A

Final Panel Comments on the Lake Worth Inlet Draft IFR/EIS

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Final Panel Comment 1

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.

Basis for Comment

The Appendix C forecasts for benefiting commodities (molasses, diesel fuel, asphalt, cement, and general cargo) rely heavily on assumptions regarding growth between current levels and 2017 (the forecast base year). While the 2017-2067 growth rates in Appendix Table 15 appear conservative, attaining the 2017 base year volumes implies rapid growth between now and then. Appendix Table 37 (p. 59) shows the dependence of project benefits on the commodity flows. If the optimistic growth assumptions are not realized, benefits will be sharply reduced.

Table 33 of the Economic Model Documentation report shows the expected 2011 cargo flows. These expectations have been met for molasses, liquid petroleum (including fuel oil), and asphalt, but 2011 actuals are well below expectations for cement and general cargo. Table 33 also shows the optimistic nature of some growth assumptions for 2011-2017, as shown below.

Year	2011 Expected (Table 33)	2017 Expected (Table 33)	Assumed CAGR 2011-2017	2011 Actual	2017 Expected (Table 33)	Required CAGR 2011-2017
Molasses (Shipments)	164	265	8%	160	265	9%
Liquid Petroleum Products (Receipts)	222	232	1%	219	232	1%
Asphalt (Receipts)	66	76	2%	76	76	0%
Cement & Concrete (Receipts)	46	97	13%	0	97	NA
Non-Containerized General Cargo (Both Directions)	116	122	1%	69	122	10%
Total	568	695		525	695	

To validate the cargo forecasts and the project benefits, it is necessary to address/resolve the following comments regarding commodities:

Cement (13% of benefits). All the scenarios considered in Section 7 assume recovery of cement imports at Palm Beach, which has yet to occur. Appendix C assumes that the base year (2017) tonnage for cement imports will be 40% of the 14-year peak, or 96,500 metric tons. This is described as corresponding to a rebound in the construction industry. As shown in Figure 24, Palm Beach cement imports were already declining before the recession. Based on port-reported tonnages, there have been no cement imports through Palm Beach since November of 2008. Appendix C also notes that cement tonnage in the projections includes other commodities such as aggregates and other dry bulks. These should be separated from cement, as their outlook and vessel operations would differ.

The existence of an idle CEMEX import terminal does not guarantee a resumption of cement imports or a recovery of pre-recession levels. Palm Beach has been a minor import point for cement. In 2006, before the recession, Palm Beach imported 115,000 metric tons compared to 2.5 million metric tons through Port Everglades and roughly 1.3 million metric tons through Port Canaveral. Port Everglades and Port Canaveral apparently have substantial excess capacity.

Since CEMEX operates the only cement terminal in Palm Beach, the timing and volume of cement imports are a function of CEMEX's corporate strategy. CEMEX also imports cement through Port Everglades, where cement imports did not completely stop during the recession,

and where they have since recovered somewhat from a low point in 2010. Notes provided on the August 2011 interview with CEMEX indicate that CEMEX plans to import aggregates and other non-cement materials from Italy and the Caribbean, not cement. Since cement has different origins and shipping conditions than the commodities CEMEX actually anticipates the actual commodities would have different vessel cost savings.

Molasses exports (27% of benefits). Appendix C assumes that molasses tonnage “will likely return to 2004 levels by 2017 and then experience no growth over the period of analysis” (p. 37). While this seems to be a relatively conservative approach to the 2017-2067 forecast period, no justification is given for the assumption of rapid growth between current levels and 2017 (see table above). Port data show that molasses exports dropped from 390,467 metric tons in FY2004 to 185,912 metric tons in FY2005, before the recession, and have since varied between 111,687 and 193,896 metric tons annually. Calendar year 2012 molasses exports totaled 170,166 metric tons. A 9.3% compound annual growth rate (CAGR) would be required to reach 265,000 metric tons by 2017. In the absence of an explanation for the post-2004 decline and a rationale for a rebound between now and 2017, the assumption of 265,000 metric tons in 2017 is unsupported.

Diesel Fuel (combined with asphalt for 43% of benefits). No actual forecast for diesel fuel was located in the documentation. Appendix C does not provide a basis for the expected growth of diesel fuel imports between current levels (98,511 metric tons in FY2012) and 2017 (with 232,000 metric tons of combined diesel and fuel oil). The 2017-2067 growth rate of 0.6% (p. 29) is different from the 0.8% shown in Table 15. Table 15 and Figure 19 would be clearer if diesel was shown and labeled separately. No information is provided on the new bio-fuel plant (p. 30) or how it would impact diesel imports.

Asphalt (combined with diesel fuel for 43% of benefits). Appendix C does not provide a separate discussion of the asphalt forecast; it combines asphalt with cement and links it to the expected construction industry recovery. Port statistics show 78,902 metric tons of asphalt in FY2012, so the 76,000 tons shown in 2017 reflects no anticipated growth between now and 2017. By contrast, cement is expected to recover rapidly between now and 2017. If demand for both commodities is driven by recovery in construction activity, their outlooks should be similar.

General Cargo (17% of benefits). The Appendix C discussion of non-containerized general cargo (p. 38) is brief, and does not provide a justification for the growth between 2012 (73,922 metric tons) and 2017 (122,000 metric tons, a CAGR of 10.5%). The general cargo includes project cargo for Florida Power and Light (FPL). Project cargo is typically associated with specific near-term infrastructure projects and is difficult to forecast. Additional information on the commodities being handled and their outlook would be required to verify the reasonableness of the 2017 tonnage assumption.

Significance – High

The vessel cost savings benefits and the national economic development (NED) benefits and benefit-cost ratio (BCR) depend on the commodity forecasts, which in turn depend on the assumed 2017 base year cargo flows.

Recommendations for Resolution

1. Provide a detailed explanation for the assumed 2017 tonnages for benefitting commodities (diesel fuel, molasses, asphalt, cement-related minerals, and actual general cargo commodities).
2. Discuss cargo flows for benefitting commodities through calendar year 2012, including the

reasons for any declines.

3. Separate the discussion of diesel fuel from fuel oil, and provide a specific forecast of diesel fuel tonnage throughout.
4. Analyze the commodities anticipated by CEMEX that are currently listed as cement but are actually other minerals and aggregates.
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).
6. Reconcile the expected 2011 cargo flows shown in Table 33 of the Economic Model Documentation with actual port cargo flows through 2012.

Final Panel Comment 2

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.

Basis for Comment

The Ocean Dredged Material Disposal Site (ODMDS) is currently limited to 500,000 CY of dredged material per year. The future with project condition assumes that the EPA will increase the ODMDS to allow the project to dispose of the 1.4 MCY of dredged material estimated for construction of this project. The Panel was briefed during a mid-review teleconference on May 29, 2013 with the Project Delivery Team (PDT), Planning Center of Expertise and Battelle (facilitator) that the USACE PDT has initiated the modeling needed for the approval process; however, at this time it is uncertain whether the limit on the amount of dredged material disposed at the ODMDS will be increased.

Page 4-27 states the use of the ODMDS for disposal would require about two years and additional funding. The risk level assigned by the PDT is "moderate." Risk Register Attachment A, Table RE-3, states, "ODMDS Capacity - There is a current restriction on the volume per annum to be placed in the ODMDS. If there is no expansion to the current ODMDS, then there would not be capacity to accept the material from this project."

As shown on page 18, this is a key schedule risk driver. The recommendation is that:

"project leadership should proactively coordinate and communicate with District management and the other involved project partners and sponsors. Additionally, the PDT should actively research and report any changes to the characterization of the ODMDS capacity, operational restrictions, or other regulatory requirements. Ultimately, an amount and duration for this issue should be included and protected within the contingency and/or management reserve."

For both the cost and schedule risk assessment, the team selected "unlikely" for the likelihood of occurrence. If "likely or very likely" would have been selected, this item would have had a "high" risk level. The document needs to better explain why it is "unlikely" that EPA will not approve increasing the ODMDS.

The Draft Integrated Feasibility Report/Environmental Impact Statement does not provide a back-up plan if the ODMDS expansion is not approved. Without a clear placement scenario for all of the construction material, the risk level is considered to be high. Reliance on an informal arrangement with EPA leaves too much uncertainty about capacity limitations.

Significance – High

Project construction is contingent on EPA approval of increasing the ODMDS.

Recommendations for Resolution

1. Include information shared at the mid-review teleconference to enable the reader to reach the same conclusion about risk.
2. Include 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.
3. Add another disposal option with detailed costs to demonstrate the project can move forward if the change to the ODMDS limit is not allowed.

Final Panel Comment 3

The vessel cost savings for benefiting commodities cannot be verified from the documentation provided.

Basis for Comment

The existing reports do not provide a clear analytic path between the commodity projections, the vessel operations, and the summary of vessel cost savings benefits ultimately shown in Appendix C Table 37. The following issues prevent vessel cost savings from being clearly established and supported:

Commodities and Vessels. The discussion of vessel operations (Section 4.3) is not sufficiently detailed to verify the cost savings and the discussion mixes diesel fuel (benefiting commodity), asphalt (benefiting commodity), and fuel oil (non-benefiting commodity) together as “liquid petroleum” in the vessel analysis. The combination of asphalt, diesel, and fuel oil prevents the Panel from verifying the cost savings for the benefiting commodities (diesel fuel and asphalt).

Vessel Fleet and Operations. Appendix Tables 24-25 show vessels and vessel operations for 2017 and beyond, but does not compare them with current vessel operations. These tables show calls by vessel size, but not commodity tonnages. Table 25 also does not indicate which vessels would benefit from deeper draft. (Table 2-1 does not suggest “light loading”, but rather full loading in smaller vessels. This interpretation is confirmed by Appendix Table 13.) Given the combined vessel information, the Panel cannot verify the vessel costs savings benefits.

In addition, the analysis of vessel operations would benefit from information in the following areas:

- **Commodity Tonnages:** The analysis does not show what commodity tonnages would be moved in benefiting and non-benefiting vessels. Given that vessels usually sail at a maximum of around 90% of their design draft, as a rule of thumb only vessels with design drafts of over 33 feet would be expected to benefit from channel deepening below 33 feet. (The vessel would sail at a maximum of 30 feet of draft [90%], giving 3 feet of underkeel clearance in a 33 foot channel.) Per Table 31 in the Economic Model Documentation, only vessels of 35K dead weight tonnage (DWT) and up seem likely to benefit. Additional documentation is needed to show how vessel benefits were estimated.
- **Shifts in Product Origin:** Appendix C notes that the origin of some petroleum products will shift (p. 46). If the diesel fuel or asphalt origins shift, these should be explained in detail.
- **Vessel Size:** For cement, Table 24 suggests that the tonnage would be split between smaller (15K DWT) and larger vessels (35K and 40K DWT). However, vessels of 25-35K DWT can apparently be accommodated in the existing chan-

nel, and were used to carry cement through 2006 (Appendix Table 11). Some explanation is needed regarding the predicted use of smaller vessels.

- “Cement” Imports: The discussion of cement in Appendix C (p. 34) notes that the analysis uses “cement” as a proxy for several bulk materials, including dry cement itself, bauxite, alumina, silica sands, and aggregate. The interview notes from CEMEX indicate that the expected imports through Palm Beach are not cement at all, but silica sand (Italy), bauxite (Jamaica), alumina (Jamaica), and limestone (Bahamas). A little later in Appendix C (p. 50), the vessel route descriptions indicate that cement imports come from the Caribbean, East Coast South America, or Northern Europe. The cement analysis provided in the report thus appears inapplicable to the anticipated commodity flows.
- Forecast Tonnage and Commodities by Vessel Size: For general cargo, Table 25 indicates only one benefitting vessel call (37.5K DWT) in 2017, and two in 2037 and 2067. It is difficult to understand how this would result in the \$1.6 million cost savings noted in Table 37. Appendix C Tables 24–25 indicate a shift from 20K DWT vessels into larger sizes, but there is no information on the allocation of forecast tonnage or commodities by vessel size. Here too, because the split-route modeling assumption was applied to the benefitting vessels over 20K DWT, the basis on which cost savings are estimated is unclear. The explanation of savings provided in Appendix C (p. 45) is too general.

Barge to Tanker Shift. For liquid petroleum and other commodities, Tables 24 and 25 suggest that the major benefit will be shifting from barges to tankers. The analysis does not show what portion of which benefitting commodities would remain in barges vs. self-propelled tankers, at what volume threshold commodities would shift from barges to tankers, or when that threshold would be reached. There is no verification that the shift from barges to tankers would be feasible on both ends of the voyage, e.g., that the originating/terminating terminal could also efficiently shift to larger shipment sizes in larger vessels. There is also no indication that Palm Beach customers would be willing and able to switch.

Shipment Sizes. Appendix C notes that shipment size restrictions for diesel, asphalt, and cement are based on available storage (p. 17). There is no indication of how the limits were taken into account in the vessel analysis. This is a particular concern for the larger petroleum tankers (35K and 50K DWT), which apparently would not be able to discharge a full load at Palm Beach. These vessels would therefore not benefit from dredging unless they were making another port call after Palm Beach. Asphalt is also constrained by storage facilities (Appendix C, p. 44), and the impact on larger asphalt vessels is unclear.

Direct vs. Split Routes. The vessel analysis does not show the allocation of commodities to direct and split routes. The discussion of route groups in Appendix C (pp. 49–50) raises an issue of sailing drafts. A vessel that unloads a significant portion of its capacity at a prior port call would be arriving at Palm Beach at well below its design

draft and may not benefit from channel deepening. For example, a 50K DWT tanker with a 38.9 foot design draft (HarborSym Doc, Table 31) carrying half its capacity (23,000 metric tons) may not require channel deepening. The dredging benefit to split route shipment is thus not supported by the report information.

Vessel Cost Savings. The documentation reviewed to date summarizes the results of the vessel cost saving estimation, but does not provide enough detail for the Panel to understand and verify the methodology, assumptions, or results. The analysis does not show how barge and ship costs compare. For example, the economic advantages of self-propelled tankers over barges for diesel fuel and asphalt are mentioned in Appendix C (p. 44), but not documented.

The Economic Model Documentation report describes the HarborSym model and its application in general, but does not explain which commodity tonnages are forecast to be carried in which vessels, how or why commodity tonnages were allocated between barges and ships, or how the costs of barges and ships compare.

Significance – Medium

The estimated national economic development (NED) benefits consist entirely of vessel operating cost savings. It is not possible to determine the validity of these cost savings estimates from the documentation provided.

Recommendations for Resolution

1. Add sufficient detail to the Appendix C 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 recommend project.
2. Revise the analysis of cement import vessel cost savings to correspond to the actual commodities and origins anticipated by CEMEX.

Final Panel Comment 4

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.

Basis for Comment

Implementing the proposed plan for Lake Worth Inlet will result in a significant volume of dredged material during project construction and an increase in maintenance dredging requirements over the life of the project. Table 4-1 summarizes the sediment management plan for the dredged material volume that will result from the project construction. The Draft Integrated Feasibility Report/Environmental Impact Statement (IFR/EIS) also describes an increase in annual maintenance dredging requirements. However, the Draft IFR/EIS does not provide details on long-term management of sediments resulting from maintenance dredging. Clearly stating long-term storage capacities of available dredged material management alternatives in the context of the expected annual maintenance dredging volumes will demonstrate that the project is sustainable. It will also provide assurances that the required storage capacity to manage maintenance dredging sediments in future years is available.

Significance – Medium

A clear and concise plan for managing the dredged material generated during project maintenance is integral to the project's success and essential to accurately assess the sustainability of the proposed plan.

Recommendations for Resolution

1. Clearly show current storage capacity for each dredged material management alternative.
2. Explain the impact on these capacities of sediment volumes dredged during initial construction of the proposed plan.
3. Summarize likely long-term sediment management strategies, including anticipated life spans and potential alternatives for extending the life of specific alternatives.

Final Panel Comment 5

The exact role of the Sand Transfer Plant in the overall sediment management plan is unclear.

Basis for Comment

A Sand Transfer Plant (STP) is located immediately north of Lake Worth Inlet at the west end of the north jetty. It mimics the natural littoral drift of sand interrupted by the Lake Worth Inlet channel. The Draft Integrated Feasibility Report/Environmental Impact Statement (IFR/EIS) emphasizes its importance for sediment management in Lake Worth Inlet, including in Sections 2.4.6 and 5.4.6, both entitled “Sand Transfer Plant.” The Draft IFR/EIS states, “Sand Transfer Plant and settling basin mitigate for high shoaling rate...” (p. 2 of the Executive Summary under Existing and Future Conditions). The Draft IFR/EIS also references the Lake Worth Inlet Sand Transfer Plant Project and several recent Environmental Assessments (2004 and 2006) of the project.

Despite these numerous references, the Draft IFR/EIS does not clearly quantify the role of the STP in sediment management. Several items are missing:

1. A clear statement that the source of the sediment for the STP is sand accumulation within the settling basin, as well as a discussion of any issues the STP may have gathering those sediments.
2. An update on the contribution of the STP to sediment management, last defined in the 2006 Environmental Assessment, which states (p. 28), “Approximately 160,000 cubic yards per year would be bypassed per year.”
3. A clear statement indicating whether a cost comparison was done (or should be considered) to look at increasing the plant’s capacity to offset maintenance costs and take advantage of the enlarged settling basin.

Significance – Low

A more detailed presentation of the role of the Sand Transfer Plant will help clarify the plan formulation.

Recommendations for Resolution

1. In Sections 2 and 5, explain the role of the Sand Transfer Plant in sediment management including capacities, sediment sources, sediment destination, and cost implications.

Final Panel Comment 6

Inconsistencies in the description of estimated shoaling rates makes it difficult to determine whether shoaling rates are expected to decrease, maintain, or increase.

Basis for Comment

Existing shoaling rates are well documented in historical dredging events (summarized in Table ST1 in the Hydrodynamic Modeling Attachment), and construction volumes are estimated in Appendix A (Table T-3). Table ST1 states that the historical shoaling rate is 115,000 CY. Section 2.0, Existing Conditions, summary states "...high shoaling (annual shoaling - 176,000 cy)," but does not indicate whether this is for existing conditions or for future project conditions. The Hydrodynamic Modeling Attachment (Appendix A, p. 32) states that the shoaling rate per unit area would remain the same as the current condition, i.e., total shoaling would increase proportional to the area of the channel and that the annual shoaling rate is estimated to be 100,000 CY per year.

These statements seem inconsistent; the report needs an analysis that compares and contrasts current and with project shoaling rates.

Significance – Low

Clear statements on current and future shoaling rates are necessary to understand the impact of the project.

Recommendations for Resolution

1. Clearly state current and future shoaling rates in Sections 2 and 4.

Final Panel Comment 7

The cumulative impacts section does not discuss changes in air quality or noise associated with operations at the port.

Basis for Comment

The discussion of cumulative impacts (Section 5.5.4 and Table 5-3) addresses most aspects of anticipated environmental effects, whether or not predicted to be significant. However, neither changes to air quality nor noise are addressed. Air emissions are shown to be minor (Section 2.5). Noise is cited as occurring at moderate levels under current port operating conditions (Section 2.5.11), but is expected to be similar with the proposed project (Section 5.5.10). With the Tentatively Selected Plan, vessel visits are expected to decrease, potentially resulting in decreased air emissions and noise levels/duration.

Significance – Low

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.

Recommendations for Resolution

1. Discuss cumulative impacts of air quality and noise in Section 5.5.4 and Table 5-3.
2. Cite any expected relationships between changes in port operation air emissions and noise levels/duration.

APPENDIX B

**Final Charge to the Independent External Peer Review Panel
as Submitted to USACE on May 22, 2013**

on the

Lake Worth Inlet FR/EIS

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**Charge Questions and Guidance to the Peer Reviewers
for the
Independent External Peer Review
of the
Draft Integrated Feasibility Report and Environmental Impact Statement
Lake Worth Inlet, Palm Beach Harbor**

BACKGROUND

Lake Worth Inlet connects the Palm Beach Harbor to the Atlantic Ocean. The port is located in Riviera Beach, Palm Beach County, Florida – 80 miles north of Miami and 135 miles (217 km) south of Port Canaveral. The Port of Palm Beach is the fourth busiest container port in Florida and the eighteenth busiest in the continental United States. The port is positioned well for growth due to its access to intermodal capabilities, as well as its acreage available for warehousing. The port has evolved into an export port (one of only 11 in the United States) and is a major nodal point for the shipment of bulk sugar, molasses, cement, utility fuels, water, produce, and breakbulk items. In addition, the Bahamas Celebration cruise ship is based at the port. Located in the heart of south Florida’s tourism enclave, the port also serves significant recreational boat traffic. The Port of Palm Beach, along with its tenants, is an economic engine for the county, state, and nation – contributing \$260 million in business revenue and \$12 million in state and Federal taxes. Over \$7 billion of commodities move through the port each year, and approximately 2,400 people are employed directly and indirectly because of the port.

OBJECTIVES

The objective of this work is to conduct an independent external peer review (IEPR) of the Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth Inlet, Palm Beach Harbor (hereinafter: Lake Worth Inlet IEPR) in accordance with the Department of the Army, USACE, Water Resources Policies and Authorities’ *Civil Works Review* (EC 1165-2-214, December 15, 2012), and the Office of Management and Budget’s *Final Information Quality Bulletin for Peer Review* (December 16, 2004).

Peer review is one of the important procedures used to ensure that the quality of published information meets the standards of the scientific and technical community. Peer review typically evaluates the clarity of hypotheses, validity of the research design, quality of data collection procedures, robustness of the methods employed, appropriateness of the methods for the hypotheses being tested, extent to which the conclusions follow from the analysis, and strengths and limitations of the overall product.

The purpose of the IEPR is to assess the “adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used” (EC 1165-2-214; p. D-4) for the Lake Worth Inlet documents. The IEPR will be limited to technical review and will not involve policy review. The IEPR will be conducted by subject matter experts (i.e., IEPR panel members) with extensive experience in engineering, Civil Works planning, environment, and economic issues relevant to the project. They will also have experience applying their subject matter expertise to deep draft navigation projects.

The Panel will be “charged” with responding to specific technical questions as well as providing a broad technical evaluation of the overall project. Per EC 1165-2-214, Appendix D, review panels should identify, explain, and comment upon assumptions that underlie all the analyses, as well as evaluate the soundness of models, surveys, investigations, and methods. Review panels should be able to evaluate whether the interpretations of analysis and the conclusions based on analysis are reasonable. Reviews should focus on assumptions, data, methods, and models. The panel members may offer their opinions as to whether there are sufficient analyses upon which to base a recommendation.

DOCUMENTS PROVIDED

The following is a list of primary and secondary review documents and reference materials that will be provided for the review.

Documents for Review

The following primary documents are to be reviewed by each designated discipline:

Title	Approx. No. of Pages	Required Disciplines
Draft Feasibility Report and EIS	182	All Disciplines
Appendix A, Engineering	127	Engineer
Appendix A, Engineering (Boring logs and soils reports)	283	Engineer
Appendix A, Engineering (Value Engineering)	62	Engineer
Appendix B, Engineering (Cost Engineering and Risk Analysis)	146	Economist, Plan Formulator
Appendix C, Socio-economics	74	Economist
Appendix D, Section 404 and Mitigation (including costs)	167	Environmental
Appendix E, Summary of Public Comments	281	Plan Formulator
Appendix F, Real estate plan	16	Economist, Plan Formulator
Appendix G, Preliminary Assessment Update	17	All Disciplines
Total Page Count	1355	

The following secondary review documents will be reviewed by panel members, as needed to review background information referenced in the primary review documents.

- Risk Register
- Environmental Assessment and Finding of No Significant Impact, Maintenance Dredging, Palm Beach Harbor, Palm Beach County, Florida, October 1998
- Revised Environmental Assessment, Sand Transfer Plant Rehabilitation and Extended Outfall, Palm Beach Harbor Point and Permanent Booster Pump, Palm Beach Harbor-Lake Worth Inlet, Palm Beach County, Florida, August 2006
- Environmental Assessment, Palm Beach Harbor Operations and Maintenance Activities, Palm Beach Harbor-Lake Worth Inlet, Palm Beach County, Florida, January 2012

Documents for Reference

- USACE guidance *Civil Works Review*, (EC 1165-2-214, December 15, 2012)
- Office of Management and Budget's Final Information Quality Bulletin for Peer Review (December 16, 2004).

SCHEDULE

This schedule is based on the May 22, 2013 start of the review.

Task	Action	Due Date
Conduct Peer Review	Battelle sends review documents to panel members	5/21/2013
	Battelle convenes kick-off meeting with panel members	5/22/2013
	Battelle convenes kick-off meeting with USACE and panel members	5/22/2013
	Battelle convenes mid-review teleconference for panel members to ask clarifying questions of USACE	5/29/2013
	Panel members complete their individual reviews	5/31/2013
	Battelle provides panel members with talking points for Panel Review Teleconference	6/4/2013
	Battelle convenes Panel Review Teleconference	6/5/2013
Prepare Final Panel Comments and Final IEPR Report	Battelle provides Final Panel Comment templates and instructions to panel members	6/6/2013
	Panel members provide draft Final Panel Comments to Battelle	6/12/2013
	Battelle provides feedback to panel members on draft Final Panel Comments; panel members revise Final Panel Comments	6/12-6/18/2013
	Battelle finalizes Final Panel Comments	6/18/2013
	Battelle provides Final IEPR Report to panel members for review	6/19/2013
	Panel members provide comments on Final IEPR Report	6/20/2013
	*Battelle submits Final IEPR Report to USACE	6/24/2013
	Battelle inputs Final Panel Comments to DrChecks and provides Final Panel Comment response template to USACE	6/25/2013
	Battelle convenes teleconference with Panel to review the Post-Final Panel Comment Response Process (if necessary)	6/26/2013
	USACE provides draft PDT Evaluator Responses to Battelle	6/27/2013
Comment/Response Process	Battelle provides the panel members the draft PDT Evaluator Responses	6/28/2013
	Panel members provide Battelle with draft BackCheck Responses	7/2/2013
	Battelle convenes teleconference with panel members to discuss draft BackCheck Responses	7/2/2013
	Battelle convenes Comment-Response Teleconference with panel members and USACE	7/8/2013
	USACE inputs final PDT Evaluator Responses to DrChecks	7/9/2013
Comment/Response Process	Battelle provides PDT Evaluator Responses to panel members	7/9/2013
	Panel members provide Battelle with final BackCheck Responses	7/11/2013
	Battelle inputs the panel members' final BackCheck Responses to DrChecks	7/12/2013

Task	Action	Due Date
	*Battelle submits pdf printout of DrChecks project file	7/12/2013
Civil Works Review Board (CWRB)	Panel prepares and/or reviews slides for CWRB	July/August 2013
	Civil Works Review Board	10/25/2013

CHARGE FOR PEER REVIEW

Members of this IEPR Panel are asked to determine whether the technical approach and scientific rationale presented in the Lake Worth Inlet documents are credible and whether the conclusions are valid. The Panel is asked to determine whether the technical work is adequate, competently performed, properly documented, satisfies established quality requirements, and yields scientifically credible conclusions. The Panel is being asked to provide feedback on the economic, engineering, environmental resources, and plan formulation. The panel members are not being asked whether they would have conducted the work in a similar manner.

Specific questions for the Panel (by report section or Appendix) are included in the general charge guidance, which is provided below.

General Charge Guidance

Please answer the scientific and technical questions listed below and conduct a broad overview of the Lake Worth Inlet documents. Please focus your review on the review materials assigned to your discipline/area of expertise and technical knowledge. Even though there are some sections with no questions associated with them, that does not mean that you cannot comment on them. Please feel free to make any relevant and appropriate comment on any of the sections and appendices you were asked to review. In addition, please note the following guidance. Note that the Panel will be asked to provide an overall statement related to 2 and 3 below per USACE guidance (EC 1165-2-214; Appendix D).

1. Your response to the charge questions should not be limited to a “yes” or “no.” Please provide complete answers to fully explain your response.
2. Assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, and any biological opinions of the project study.
3. Assess the adequacy and acceptability of the economic analyses, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, and models used in evaluating economic or environmental impacts of the proposed project.
4. If appropriate, offer opinions as to whether there are sufficient analyses upon which to base a recommendation.
5. Identify, explain, and comment upon assumptions that underlie all the analyses, as well as evaluate the soundness of models, surveys, investigations, and methods.

6. Evaluate whether the interpretations of analysis and the conclusions based on analysis are reasonable
7. Please focus the review on assumptions, data, methods, and models.

Please **do not** make recommendations on whether a particular alternative should be implemented, or whether you would have conducted the work in a similar manner. Also please **do not** comment on or make recommendations on policy issues and decision making. Comments should be provided based on your professional judgment, **not** the legality of the document.

1. If desired, panel members can contact one another. However, panel members **should not** contact anyone who is or was involved in the project, prepared the subject documents, or was part of the USACE Agency Technical Review (ATR).
2. Please contact the Battelle Project Manager (Lynn McLeod, mcleod@battelle.org) or Program Manager (Karen Johnson-Young (johnson-youngk@battelle.org) for requests or additional information.
3. In case of media contact, notify the Battelle Program Manager, Karen Johnson-Young (johnson-youngk@battelle.org) immediately.
4. Your name will appear as one of the panel members in the peer review. Your comments will be included in the Final IEPR Report, but will remain anonymous.

Please submit your comments in electronic form to Lynn McLeod, mcleod@battelle.org, no later than May 31, 2013, 10 pm ET.

**Independent External Peer Review
of the
Draft Integrated Feasibility Report and Environmental Impact Statement Lake Worth
Inlet, Palm Beach Harbor**

Note that information in Appendices and supporting information should be taken into consideration when judging the overall adequacy and acceptability of the report for any of the questions below.

General Charge Questions

1. Are the assumptions that underlie the economic, engineering, environmental, and plan formulation analyses sound?
2. Comment on the adequacy and acceptability of the economic, engineering, and environmental methods, models, and analyses used.
3. In general terms, are the planning methods in the analyses used in the appropriate manner?
4. Were risk and uncertainty sufficiently considered and documented in the risk register?
5. In your opinion, are there sufficient analyses upon which to base the recommendation?

Specific Charge Questions

Chapter 1 Introduction

No questions.

Chapter 2 Existing and Future Without Project Conditions

6. Do you agree with the general analyses of the economic, navigation, built, and natural environments of the port operations?
7. For your particular area of expertise, provide an in-depth review of whether the analyses of the economic, navigation, built, and natural environments within the project area are sufficient to support the estimate of impacts for the alternatives.
8. Given your area of expertise, does this section appropriately address the existing conditions of all resources pertinent to the study?
9. Was the discussion of the economic, navigation, built and natural environment sufficient to characterize current baseline conditions and to allow for evaluation of forecasted conditions (with and without the recommended plan)?

10. Do the existing and historical conditions accurately describe the current commodity movements through the study area?
11. Are the assumptions regarding future commodity and ship movements through the study area reasonable and supported?

Chapter 3 Plan Formulation

12. Comment on the Planning Process. Has the USACE 6-Step Planning Process been followed?
13. Are there any additional problems, opportunities, constraints, or objectives that should be considered to ensure that the project's goals are reached?
14. Was a reasonably complete array of possible management measures considered in the development of alternatives?
15. Did the formulation process follow the requirement to avoid, minimize, and then mitigate adverse impacts on resources?
16. Does each alternative meet the formulation criteria of being effective, efficient, complete, and acceptable?

Chapter 4 Tentatively Selected Plan (Recommended Plan)

17. Discuss the addition of advanced maintenance and jetty stabilization to the Tentative Selected Plan and whether the level of detail is sufficient to provide a thorough understanding of these optimizations.
18. Discuss the extent to which need for land, easements, rights of way, relocations, borrow, disposal, and mitigation are clearly and adequately explained and costs justified.

Chapter 5 Effects of the Tentatively Selected Plan (Recommended Plan)

19. Are the changes between the without and with project conditions adequately described for the Tentative Selected Plan?
20. Are the uncertainties inherent in the evaluation of the impacts to the economic, navigation, built, and natural environment and any risks associated with those uncertainties, adequately addressed and described for the Tentatively Selected Plan?
21. Did the study address those resources identified during the scoping process as important in making decisions relating to the study?
22. Comment on whether the cumulative effects of the project and other previous and future projects in the area have been accurately described. What, if any, additional information should be included?

23. Given your area of expertise, does this section appropriately address the potential impacts of the Tentative Selected Plan on all resources pertinent to the study?

Chapter 6 Environmental Compliance

No questions.

Chapter 7 Recommendations

24. Comment on the extent to which the recommendations are consistent with and justified by the Feasibility Report/Environmental Impact Statement.

Chapter 8 List of Preparers and Reviewers

No questions.

Chapter 9 References

No questions.

Appendix A: Engineering

25. Comment on the adequacy and accuracy of the assumptions, models, and data used in the hydrodynamic modeling.
26. Comment on the adequacy and accuracy of the assumptions, models, and data used in the geotechnical investigations.

Appendix B: Cost Engineering

27. Was the methodology used to develop the Total Project Cost estimate adequate and valid?
28. Is the final cost estimate reliable, accurate, and justified?
29. Were the methods used in the risk and uncertainty analysis adequate and valid?
30. Are the results of the risk and uncertainty analysis reliable and accurate?
31. To what extent have significant project construction costs been adequately identified and described?

Appendix C: Socioeconomics

32. Comment on the adequacy and accuracy of the assumptions, models, and scenarios used to calculate benefits.
33. Comment on the accuracy of the description of expected future conditions.

34. Comment on the method used to calculate the National Economic Development (NED) benefits.
35. Comment on whether the range of commodity growth scenarios is adequate to account for uncertainty in the estimates.

Appendix D: Environmental

Subsection 1: 404(b)

No questions.

Subsection 2: Coastal Zone Management Plan

No questions.

Subsection 3: Mitigation Plan (Seagrass and Hard Bottom Mitigation)

36. Comment on the ability of the proposed mitigation plan to address adverse impacts from the project.

Subsection 4: Cost-Effective Incremental Cost Analysis (CE/ICA) for Mitigation

No questions.

Subsection 5: Environmental Survey Reports (Seagrass Survey)

No questions.

Subsection 6: ESA (Biological Assessment prepared by USACE)

No questions.

Subsection 7: EFH

No questions.

Appendix E: Pertinent Correspondence and Mailing List

No questions.

Appendix F: Real Estate

No questions.

Appendix G Preliminary Assessment Update Palm Beach Harbor, Florida

No questions.

Overview Questions

37. Please identify the most critical concerns (up to five) you have with the project and/or review documents.

38. Please provide positive feedback on the project and/or review documents.