**DEPARTMENT OF THE ARMY**
MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS
P.O. BOX 80
VICKSBURG, MISSISSIPPI 39181-0080

REPLY TO
ATTENTION OF:

CEMVD-PD-N 02 May 2011

MEMORANDUM FOR Commander, North Atlantic Division
ATTN: (Roselle Henn, CENAD-PSD-P)

SUBJECT: New York & New Jersey Harbor Deepening Project, Beneficial Use of Dredged Material to Restore Yellow Bar Hassock, Jamaica Bay and Marsh Islands, Jamaica Bay, Brooklyn, New York Engineering Documentation Report, New York District, Ecosystem Planning Center of Expertise Recommendation for Review Plan Approval

1. References:
   a. Engineering Circular (EC) 1165-2-209, Water Resources Policies and Authorities, CIVIL WORKS REVIEW POLICY, 31 Jan 2010
   b. EC 1105-2-407, Planning Models Improvement Program: Model Certification, 31 May 2005
   c. Engineering Regulation (ER) 1110-2-12, Quality Management, 30 Sep 2006

2. The enclosed Review Plan (RP) complies with all applicable policy and provides an adequate agency technical review of the plan formulation, engineering, and environmental analyses, and other aspects of plan development. The Ecosystem Restoration Planning Center of Expertise (ECO-PCX) has reviewed the RP and documentation of the review is enclosed.

3. The Evaluation of Planned Wetlands (EPW) model used in this study was reviewed in the fall of 2010 for the Jamaica Bay, Marine Park, and Plumb Beach Interim Feasibility Study, also conducted by New York District. The review comments are outlined in the model review report dated 29 October 2010. A memo from CENAN-PL dated 28 April 2011 summarizes the comments and is enclosed. The impact of the model review comments on application of EPW on the Yellow Bar project should be addressed by the PDT and reviewed by the Agency Technical Review (ATR) Team. This information should be provided to the ECO-PCX for use in preparation of a recommendation to Headquarters (HQUSACE) for single-us approval of EPW on the subject project.

4. The RP includes a risk informed decision for exclusion from Type I Independent External Peer Review (IEPR) for this study. The memo requesting exclusion is at Headquarters. The ECO-PCX concurred with the request. Final approval for exclusion must be obtained from the Director of Civil Works (DCW).

5. The ECO-PCX clears the RP for approval by the MSC Commander, pending the final approval from the DCW to exclude the study from IEPR. Upon approval of the RP, please provide a copy, the MSC Commander's approval memorandum, and the link to the District posting of the RP to Jodi Staebell.

6. If substantive revisions are made to the RP, due to changes in project scope or Corps policy, a revised RP should be provided to the ECO-PCX for review. Should either the MSC Commander or the DCW disapprove the request to exclude the study from IEPR, the RP should be revised to include IEPR and forwarded to the ECO-PCX. Non-substantive changes do not require further PCX review.

7. Thank you for the opportunity to assist in the preparation of the Review Plan.

Enclosures (3)

Jodi Staebell
Operational Director,
National Ecosystem Planning
Center of Expertise

CF:
CEMVD-RB-T (Vigh, Staebell, Knollenberg)
CEMVD-PD-N (Smith, Wilbanks)
CENAD-PSD (Veitri, Cocchieri, Henn)
CENAN-PL (Ashton, McDonald)
CECW-NAD (Shuman)

**ENCL 1**

# REVIEW PLAN

***New York & New Jersey Harbor Deepening Project***
***Beneficial Use of Dredged Material to Restore Yellow Bar Hassock***
***Jamaica Bay Marsh Islands***
***Jamaica Bay, Brooklyn, New York***
***Engineering Documentation Report***

***New York District***

**MSC Approval Date:**
**Last Revision Date:** April 2011

US Army Corps
of Engineers ®

**REVIEW PLAN**

***New York & New Jersey Harbor Deepening Project***
***Beneficial Use of Dredged Material to Restore Yellow Bar Hassock***
***Jamaica Bay Marsh Islands***
***Jamaica Bay, Brooklyn, New York***
***Engineering Documentation Report***

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## 1. PURPOSE AND REQUIREMENTS

**a. Purpose.** This Review Plan defines the scope and level of peer review for the *New York and New Jersey Harbor Deepening Project Beneficial Use of Dredged material to Restore Yellow Bar Hassock Jamaica Bay Marsh Islands Jamaica Bay, Brooklyn, New York – Engineering Documentation Report (EDR)*

**b. References**

(1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(2) EC 1105-2-412, Assuring Quality of Planning Models, 2010
(3) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
(4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
(5) *New York District Quality Management Plan*

**c. Requirements.** This review plan was developed in accordance with EC 1165-2-209, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products by providing a seamless process for review of all Civil Works projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

(1) District Quality Control/Quality Assurance (DQC). All **decision documents** (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home Major Subordinate Command (MSC).

(2) Agency Technical Review (ATR). ATR is mandatory for all **decision documents** (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess whether the analyses presented are technically correct and comply with published US Army Corps of Engineers (USACE) guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by a designated Risk Management Organization (RMO) and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC.

(3) Independent External Peer Review (IEPR). IEPR may be required for **decision documents** under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR: Type I is generally for decision documents and Type II is generally for implementation products.

(a) Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and an biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.

(b) Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

(4) Policy and Legal Compliance Review. All **decision documents** will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the Chief of Engineers. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

(5) Cost Engineering Review and Certification. All **decision documents** shall be coordinated with the Cost Engineering Directory of Expertise (DX), located in the Walla Walla District. The DX, or in some circumstances regional cost personnel that are pre-certified by the DX, will conduct the cost ATR. The DX will provide certification of the final total project cost.

(6) Model Certification/Approval. EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically

sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR. EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. Use of engineering models is also subject to DQC, ATR, and IEPR.

**2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION**

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the peer review effort described in this Review Plan is *the Ecosystem Restoration PCX at Mississippi Valley Division (MVD).*

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to conduct ATR of cost estimates, construction schedules and contingencies.

**3. STUDY INFORMATION**

**a. Decision Document.** *The study is the New York and New Jersey Harbor Deepening Project Beneficial Use of Dredged material to Restore Yellow Bar Hassock Jamaica Bay Marsh Islands Jamaica Bay, Brooklyn, New York. The purpose of the Engineering Documentation Report is to document project evaluations and facilitate acceptance of the study conclusions and recommendations by the sponsor, public, state and local agencies, and the Federal government to support modification of the New York & New Jersey Harbor Deepening Project "Project Cooperation Agreement". The current proposed plan for Yellow Bar Hassock is to restore approximately 47 acres of marsh within the northern half of the existing island. Approximately 85% of the restored marsh will be low marsh, with the balance restored as high marsh. Following headquarters approval, the next step is Congressional authorization for implementation. The NEPA documentation is provided in the Integrated Ecosystem Restoration Report and Environmental Assessment, approved July 2006. NEPA compliance and coordination is updated for the EDR implementation report, accordingly.*

**Study/Project Description.**

**b.** *An Integrated Ecosystem Restoration Report / Environmental Assessment Report (ERR/EA) dated December 2005 was prepared by the U.S. Army Corps of Engineers to evaluate alternatives for aquatic habitat restoration through the beneficial use of dredged material at various degraded marsh islands within Jamaica Bay, Gateway National Recreation Area, Brooklyn and Queens, New York. The ERR/EA was prepared in accordance Section 204 of the Water Resources Development Act (WRDA) of 1992 (Beneficial Uses of Dredged Material), as amended by Section 2037 of the WRDA of 1996 (33 U.S.C. 2326). Two (2) marsh island sites: Elders Point (including Elders Point East, Elders*

*Point West, and the Elders' Center island) and Yellow Bar Hassock were evaluated in detail in the ERR/EA and recommended for ecological restoration via placement of dredged material from new navigation or maintenance dredging projects. The ERR/EA feasibility plan recommended restoration of 33.75 acres of salt marsh habitat at Elders Point West, 27.25 acres of salt marsh habitat at Elders Point East, a sediment trap for the Elders Center island, and 31.0 acres at Yellow Bar Hassock. The ERR/EA was approved in July 2006. Construction was completed at Elders Point East as a mitigation project for the New York & New Jersey Harbor Deepening Project in 2008. Additionally, construction was completed at Elders Point West as a Beneficial Use of Dredged Material and restoration project in 2010. The proposed restoration of Yellow Bar Hassock is the third and final restoration project for the New York & New Jersey Harbor Deepening Project.*

The implementation document will be prepared in accordance with *Implementation Guidance for Regional Sediment Management – Section 2037 of the Water Resources Development Act of 2007 (WRDA 2007), dated 8 April 2008.*

**c. Factors Affecting the Scope and Level of Review.** *This section should discuss the factors affecting the risk informed decisions on the appropriate scope and level of review. The discussion must be detailed enough to assess the level and focus of review and support the PDT, PCX, and vertical team decisions on the appropriate level of review and types of expertise represented on the various review teams. At minimum, this section should address:*

- *The National Park Service, Fish and Wildlife Service as well as the New York State Department of Environmental Conservation all support this ecosystem restoration study, as Jamaica Bay provides valuable foraging, nesting and nursery habitat for a wide variety of migratory birds, fish species as well as other forms of wildlife. Jamaica Bay is one of the largest contiguous wetland habitats within metropolitan NYC and the Gateway National Recreation Area (of which Jamaica Bay is part) is used by over 9 million visitors annually. This will not be a highly controversial study, as the resource agencies and members of the public all support ecosystem restoration in Jamaica Bay. Implementation of the Jamaica Bay project will provide National Ecosystem Restoration benefits to the Nation, in terms of habitat units. There is no influential scientific information presented in this study, as the study is essentially a large scale ecosystem restoration study, recommending alternatives on eight sites within Jamaica Bay. The decisions on which sites to move forward with utilize the IWR-Planning Suite, which is the accepted and certified method of choosing between sites, and therefore are not using unique or new scientific principles to make decisions.*

- *The risks of this project occur mostly in the implementation phase, where risk of not receiving federal and non-federal funds would drive the costs of the project higher and delay the implementation and receipt of benefits to the environment. This risk has been documented in a risk register developed for the cost and schedule risk analysis. There are no significant threats to human life or safety as the alternatives mainly involve restoration of salt marsh grasses and earth moving. The purpose of the project does not involve storm damage reduction or flood risk management and there is no expectation from any stakeholder that the implementation of this project would provide any storm damage protection. As the recommended plan is to place dredged material on a marsh island in Jamaica Bay, there are no flood risk management issues. Lessons learned from the design, construction and monitoring of completed projects at Elders Point East and Elders Point West have been incorporated in accessing any risk for the implementation of Yellow Bar Hassock.*

*The District Chief of Engineering has determined that there is no significant risk to human life associated with the implementation of this project as evidenced in the IEPR Waiver Request that was submitted to HQUSACE on 8 February 2011 and is included in Attachment 4 of this Review Plan.*

- *The alternatives identified in this ecosystem restoration study would be designed in such a way as they would be self-sustaining. The redundancy, resiliency and/or robustness discussion does not apply to this ecosystem restoration study, as the purpose of this study is to bring natural restoration to Jamaica Bay. The anticipated construction sequencing is dependent upon funding, however, it is anticipated that design of alternatives would occur prior to construction of that alternative. There may be overlap with design of one alternative and construction of the next alternative, if funds permit.*

**d. In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-Federal sponsor include: *None.*

**4. DISTRICT QUALITY CONTROL (DQC)**

**a. Documentation of DQC.** *District Quality Control will be documented through the use of a Quality Control Report, which is managed in Dr Checks and signed by the members performing the DQC as well as the Division Chiefs of the major technical offices responsible for producing this report.*

**b. Products to Undergo DQC.** *DQC was completed in September 2010.*

**c. Required DQC Expertise.** *The expertise of the DQC review team will consist of Section Chiefs and subject matter experts or regional technical specialists in the fields of Plan Formulation, NEPA compliance, Engineering Design and Analysis as well as Real Estate.*

District Quality Control was completed by a team that consisted of Section Chiefs and subject matter experts. Documentation of completed District Quality Control is provided in Attachment 2 of this Review Plan.

**5. AGENCY TECHNICAL REVIEW (ATR)**

**a. Products to Undergo ATR.** *The products that will undergo ATR will be the Final Engineering Documentation Report. The final report will include NEPA and supporting documentation. The ATR was completed in September 2010.*

**b. Required ATR Team Expertise.** *The ATR team members is section should provide an estimate of the number of ATR team members and briefly describe the types of expertise that should be represented on the ATR team (not just a list of disciplines). The expertise represented on the ATR team should reflect the significant disciplines involved in the work effort and will generally mirror the expertise on the PDT. The PDT should make the initial assessment of what expertise is needed based on the PMP and the factors affecting the scope and level of review outlined in Section 3 of the review plan and may suggest candidates. The appropriate PCX(s) or RMC, in cooperation with the PDT and vertical team, will determine the final make-up of the ATR team. The following table provides examples of*

*the types of disciplines that might be included on the ATR team and some sample descriptions of the expertise required. Pick from the listed disciplines and/or add additional disciplines as needed and provide a short description of the expertise required for each discipline. The names, organizations, contact information, credentials, and years of experience of the ATR members are included in Attachment 3.*

| ATR Team Members/Disciplines | Expertise Required |
|---|---|
| ATR Lead/Environmental Model Certification | The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc). |
| Planning | The Planning reviewer should be a senior water resources planner with experience in the plan formulation process. The reviewer should be familiar with evaluation of alternative plans for ecosystem restoration projects. |
| Economics | The economics reviewer should be able to evaluate the appropriateness of cost effectiveness and incremental cost analysis (CE/ICA), using IWR-Planning Suite, as applied to dollar costs and ecosystem restoration benefits. The reviewer should also have experience with National Ecosystem Restoration analysis procedures. |
| Environmental Resources | The Environmental Resources Reviewer should have particular knowledge of ecosystem restoration and should also be familiar with all National Environmental Policy Act (NEPA) requirements. The reviewer should have experience in wetland ecology of urban regions, preferably experience in the densely populated mid-Atlantic or Northeast. |
| Coastal Engineering | The coastal engineering reviewer should have experience with engineering analyses related to wetland restoration or related projects in the urban northeast. |
| Geotechnical Engineering | Team member will have experience in with geotechnical analyses for wetland restoration. A certified professional engineer is recommended. |
| Civil Engineering | The civil engineering reviewer should have experience with engineering analysis and design of wetland restoration or related projects in the urban northeast. |
| Cost Engineering | Team member will be familiar with cost estimating for similar projects using MII. Team member will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. A separate process and coordination is also required through the Walla Walla District DX for cost engineering. |

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| Real Estate | The real estate reviewer will be familiar with the Corps of Engineers ER on Real Estate. |
| Hazardous, Toxic and Radioactive Waste (HTRW) | The HTRW reviewer will be familiar with HTRW investigations and Corps of Engineers practices and ERs. |

**c. Documentation of ATR.** DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date, for the AFB, draft report, and final report. ATR Certification was provided 8 September 2010 and Cost Dx Certification was provided 7 September 2010. ATR Certification documentation is included in Attachment 3 of this Review Plan.

## 6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

***Decision on IEPR.*** *EC 1165-2-209 states that Independent External Peer Review (IEPR) may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. There are two types of IEPR: Type I is generally for decision documents and Type II is generally for implementation products.*

*(a) Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study.*

*(b) Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.*

(1) *According to Engineer Circular 1165-2-209, Appendix D, any of the factors below require Independent External Peer Review:*

(2) *Significant threat to human life. The Yellow Bar Hassock project does not present a risk to human life.*

(3) *Total project cost greater than 45 million. The current cost estimate is $19 and has been reviewed by the Cost Estimating Center of Expertise at Walla Walla District. A Cost Dx certification was provided during Agency Technical Review.*

(4) *Request by the State Governor. There has been no request for Independent External Peer Review by the Governor of New York.*

(5) *Request by a State or Federal Agency. There has been no request for Independent External Peer Review by any State or Federal Agency, including the non-Federal sponsor, the Port Authority of New York & New Jersey, or stakeholders at the New York State Department of Environmental Conservation, the New York City Department of Environmental Protection, the National Park Service.*

(6) *Significant public dispute. There is no significant public dispute. An Environmental Impact Statement is not necessary and an Environmental Assessment was approved as included in the December 2005 ERR/EA.*

(7) *Methods are novel or complex. Pumping dredged material and planting are not novel. Additionally the Yellow Bar Hassock project will be the third Jamaica Bay marsh island to be constructed in the past five (5) years.*

(8) *On 8 February 2011, New York District and North Atlantic Division transmitted the recommendation to the Chief of Engineers that a waiver be granted from conducting Independent External Peer Review on the Yellow Bar Hassock, Beneficial Use of Dredged Material, Jamaica Bay Marsh Island Restoration Project. It is further recommended that approval authority be delegated to the North Atlantic Division Commander, BG Peter A. DeLuca, Commanding General. The District does not recommend that an IEPR (Type 1 or Type 2) is necessary at this juncture. All of the risks associated with the implementation of Yellow Bar Hassock have been minimized by lessons learned from the aforementioned completed Jamaica Bay marsh island projects.*

*Type II IEPR is not warranted, as this is an ecosystem restoration study and little to no threat to human life or safety is at risk if the project fails. The consequences of non-performance on project economics would mean that the region and nation do not realize the level of National Ecosystem Restoration benefits that this project would provide. The IEPR Waiver Request is included in Attachment 4 of this Review Plan.*

**b. Products to Undergo Type I IEPR.** *No products to undergo type I IEPR. An IEPR Waiver Request was submitted to HQUSACE on 8 February 2011 and is currently being reviewed for approval.*

1. According to Engineer Circular 1165-2-209, Appendix D, any of the factors below require Independent External Peer Review:

   a. Significant threat to human life. The Yellow Bar Hassock project does not present a risk to human life.

   b. Total project cost greater than 45 million. The current cost estimate is $19 and has been reviewed by the Cost Estimating Center of Expertise at Walla Walla District. A Cost Dx certification (attached) was provided during Agency Technical Review.

c. Request by the State Governor. There has been no request for Independent External Peer Review by the Governor of New York.

d. Request by a State or Federal Agency. There has been no request for Independent External Peer Review by any State or Federal Agency, including the non-Federal sponsor, the Port Authority of New York & New Jersey, or stakeholders at the New York State Department of Environmental Conservation, the New York City Department of Environmental Protection, the National Park Service.

e. Significant public dispute. There is no significant public dispute. An Environmental Impact Statement is not necessary and an Environmental Assessment was approved as included in the December 2005 ERR/EA.

f. Methods are novel or complex. Pumping dredged material and planting are not novel. Additionally, as indicated in Paragraph 3 of this Memorandum, the Yellow Bar Hassock project will be the third Jamaica Bay marsh island to be constructed in the past five (5) years.

2. Additional Review Efforts:

a. EC 1165-2-209 states that a fundamental principle of the review guidance is that "... an extra set of eyes is beneficial. Reviews have significantly contributed to improved quality of work in the planning, design, and construction of projects." The EC also states that Independent External Peer Review" ... is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of US ACE is warranted." The Yellow Bar Hassock project has incorporated several layers of outside review throughout the process, including review by the Port Authority of New York & New Jersey, the New York State Department of Environmental Conservation, the New York City Department of Environmental Protection, and the National Park Service (NPS), including review by a NPS Blue-Ribbon panel.

Although EC 1165-2-209 states that IEPR is not mandatory, it is still advisable for most projects. However, the Yellow Bar Hassock project was formulated taking into account lessons learned from the construction of Elders Point East and Elders Point West. Further, not one, but two Value Engineering studies were conducted. The first Value Engineering study was conducted for Yellow Bar Hassock during the development of the now constructed Elders Point West marsh island. A second Value Engineering study was conducted in November 2010 prior to the final draft of the Yellow Bar Hassock DPR that was forwarded to North Atlantic Division for Approval to transmit to the ASA (CW).

b. The Corps also invited other agencies and local governments to assist with various aspects of project development and environmental compliance, including reviewing drafts of the environmental document. Those that were invited to participate were chosen because they have jurisdiction by law or special expertise with respect to environmental issues. Agencies that have assisted with the

development of the project include the Department of State, Fish and Wildlife Service, and the Environmental Protection Agency.

3. Recommendations: New York District and North Atlantic Division recommend to the Chief of Engineers that a waiver be granted from conducting Independent External Peer Review on the Yellow Bar Hassock, Beneficial Use of Dredged Material, Jamaica Bay Marsh Island Restoration Project. It is further recommended that approval authority be delegated to the North Atlantic Division Commander, BG Peter A. DeLuca, Commanding General.

The District does not recommend that an IEPR (Type 1 or Type 2) is necessary. All of the risks associated with the implementation of Yellow Bar Hassock have been minimized by lessons learned from the aforementioned completed Jamaica Bay marsh island projects.

**c. Required Type I IEPR Panel Expertise.** *The expertise represented on the Type I IEPR panel is shown in the table below.*

| IEPR Panel Members/Disciplines | Expertise Required |
|---|---|
| Economics | The Panel Member should have a degree in economics or a related field and should be able to evaluate the appropriateness of cost effectiveness and incremental cost analysis (CE/ICA), as applied to dollar costs and ecosystem restoration benefits, and preferably familiar with the Corps of Engineers tool for CE/ICA called IWR-Planning Suite. Panel member should also have experience with National Ecosystem Restoration analysis procedures. |
| Environmental | The Panel Member should have at minimum a Masters Degree in ecology or biology. Panelist should have particular knowledge of ecosystem restoration and should also be familiar with all National Environmental Policy Act (NEPA) requirements. Panel Member should have experience in wetland ecology of urban regions, preferably experience in the densely populated mid-Atlantic or Northeast. |
| Civil Engineering | The Panel Member should have degrees in civil engineering and have demonstrated experience in performing cost engineering/construction management for all phases of ecosystem restoration or related projects. Team member should be familiar with similar projects across US and related Cost Engineering. Experience in associated contracting procedures, total cost growth analysis and related cost risk analysis is desired. Panel member should be familiar with construction industry and practices used in wetland restoration. |
| Coastal Engineering | The Panel Member should be a Professional Engineer and have |

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| | experience with engineering analyses related to wetland restoration or related projects in the urban northeast. Panel member will hold at a minimum a M.S degree in Civil Engineering or Coastal Engineering. The panel member should be familiar with the Corps Coastal Engineering Manual. |
| Civil Works Planning | The Panel Member should have a degree in planning or a related field and should have experience in the plan formulation process. Panelist should be familiar with evaluation of alternative plans for ecosystem restoration projects. Familiarity with USACE standards and procedures is required. |

**d. Documentation of Type I IEPR.** The IEPR panel will be selected and managed by an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D. Panel comments will be compiled by the OEO and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 4.d above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document and shall:

- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions; and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the OEO no later than 60 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

## 7. MODEL CERTIFICATION AND APPROVAL

**a. Planning Models.** The following planning models are anticipated to be used in the development of the decision document: *The planning models used in this study include IWR-Plan for evaluation of alternatives and sites as well as the Evaluation of Planned Wetlands (EPW) model to determine the habitat benefits gained from the restoration of each of the proposed sites.*

| Model Name and Version | Brief Description of the Model and How It Will Be Applied in the Study | Certification / Approval Status |
|---|---|---|
| *Evaluation of Planned Wetlands* | *The model was developed for use in assessing various functions of planned wetlands. The model is used to develop and evaluate alternative plans/designs for wetlands based on six major design parameters. EPW was developed as a tool to assess various design parameters for planned wetlands and to characterize potential desired or undesired changes in wetland structure and function likely to result from project activities. It is intended to complement applications of Habitat Evaluation Procedures and the Wetland Evaluation Technique, and is generally characterized as a tool that facilitates comparisons between a natural wetland in a characteristic wetland assessment area and a planned wetland.*<br><br>*EPW provides a technique for comparing the functional capacity of a wetland assessment area and a planned wetland. There are six functional areas that are addressed during the planning process. These include:*<br>*1) Shoreline bank erosion control*<br>*2) Sediment stabilization*<br>*3) Water quality*<br>*4) Wildlife*<br>*5) Fish*<br>*6) Uniqueness/heritage* | *Model Approval (Attachment 3)* |
| *IWR-Plan* | *This is the approved, certified model developed by IWR that will be used to evaluate alternatives.* | *Certified* |

**b. Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document: *None.*

| Model Name and Version | Brief Description of the Model and How It Will Be Applied in the Study |
|---|---|
| *None* | N/A |

**8. REVIEW SCHEDULES AND COSTS**

**a. ATR Schedule and Cost.** *The ATR of the Engineering Documentation Report and Environmental Assessment was completed in September 2010, including the Cost Risk Analysis through the Cost DX at Walla Walla District.*

**b. Type I IEPR Schedule and Cost.** *Not Applicable*

**c. Model Certification/Approval Schedule and Cost.** *Model approval was provided by the ATR Lead on 8 September 2010.*

## 9. PUBLIC PARTICIPATION

*Members of the public have provided comments on this study at public meetings and information sessions held throughout the study development. The final decision document, associated review reports will be made available to the public through the use of the District's Web site and mailing of notices that information is available to interested parties and stakeholders.*

Please note that the public comments were incorporated into the revised EDR that was reviewed by the ATR team.

## 10. REVIEW PLAN APPROVAL AND UPDATES

The *North Atlantic Division* Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

## 11. REVIEW PLAN POINTS OF CONTACT

Public questions and/or comments on this review plan can be directed to the following points of contact:

- *Karen Ashton, P.E., Flood Risk Management and Ecosystem Restoration Section, New York District, (917) 790-8607*
- *Chris Ricciardi, New York District Support Team, North Atlantic Division, (718) 765-7034*
- *Sue Ferguson, NAD Regional Program Manager, ECO-PCX, (615) 736-7192*

**ATTACHMENT 1: TEAM ROSTERS**

Yellow Bar Hassock, Beneficial Use of Dredged Material, Jamaica Bay Marsh Islands, Jamaica Bay, Brooklyn, New York, Engineering Documentation Report PDT, ATR, Vertical Team and OEO POCs.

PDT Members

| NAME | OFFICE | PHONE | EMAIL |
|---|---|---|---|
| Mark Lulka | CENAN-PP-H | 917-790-8205 | Mark.F.Lulka@usace.army.mil |
| Lisa Baron | CENAN-PP-H | 540-667-6290 | William.F.Slezak@usace.army.mil |
| Gail Woolley, P.E. | CENAN-EN-MC | 917-790-8297 | Sheila.Rice-McDonnell@usace.army.mil |
| Karen Ashton, P.E. | CENAN-PL-F | 917-790-8607 | Karen.Ashton@usace.army.mil |
| Peter Weppler | CENAN-PL-E | 917-790-8634 | Peter.M.Weppler@usace.army.mil |
| Caroline McCabe | CENAN-PL | 917-790-8316 | Caroline.M.McCabe@usace.army.mil |
| Anthony Schiano | CENAN-EN-C | 917-790-8347 | Anthony.Schiano@usace.army.mil |
| Melissa Alvarez | CENAN-PL-EA | 917-790-8604 | Melissa.D.Alvarez@usace.army.mil |
| Stephen Couch | CENAN-PL-F | 917-790-8707 | Stephen.Couch@usace.army.mil |

DQC Team Members

| NAME | OFFICE | PHONE | EMAIL |
|---|---|---|---|
| Jodi McDonald | CENAN-PL-FR | 917-790-8720 | Jodi.m.McDonald@usace.army.mil |
| Howard Ruben | CENAN-PL-ES | 917-790-8723 | Howard.Ruben@usace.army.mil |
| Michael Morgan | CENAN-EN-H | 917-790-8269 | Michael.J.Morgan@usace.army.mil |

ATR Team Members

| NAME | OFFICE | PHONE | EMAIL |
|---|---|---|---|
| Marshall Plumley | CENWW-EC-X | 309-794-5447 | Marshall.B.Plumley@usace.army.mil |
| Robert Blama | CENAB-OP-NN | 410-962-6068 | Robert.N.Blama@usace.army.mil |
| Regina Berger | CENAB-PL-P | 410-736-9877 | Regina.R.Bergner@usace.army.mil |
| Tom Martin | CESAJ-EN-WC | 904-232-2428 | Thomas.R.Martin@usace.army.mil |
| Sue Ferguson | CELRN-PM-P | 615-736-7192 | Sue.L.Ferguson@usace.army.mil |
| Jim Neubauer | CENWW-EC-X | 509-527-7332 | James.G.Neubauer@usace.army.mil |

ATR Team Member Bios

**Marshall Plumley:** has been with Rock Island District as a Study Manager in the Planning Branch for 10 years. Planning, policy and project management experience includes work in all stages of Civil Works projects from reconnaissance through construction. As the Environmental Plan Formulation RTS for MVD he provides direct support to MVD Districts in review of decision documents as well as provides ATR team lead services to other Divisions. Finally, he serves the District as the Illinois River Basin Integrator responsible for coordinating the various Corps missions throughout the Basin with our stakeholders and three sister Districts.

**Robert Blama:** BS University of Maryland -- Conservation and resource development with emphasis on fish and Wildlife management. Graduate studies in Biology and Ecology. Started in Corps in Planning Division as Outdoor Recreation Planner then biologist in 1978 until 1988 in which he worked on various projects, included preparing multiple EISs and EAs. From 1989 until the present he is working in Operations Division as Ecologist in Navigation Branch and as project manager with emphasis on the beneficial use of dredged material to create various habitats including wetlands, SAV, Island, oyster bars, etc.

**Regina Berger: Not available**

**Tom Martin:** Mr. Tom R. Martin is a Hydraulic Engineer for the Coastal Design Section, Jacksonville District, U.S. Army Corps of Engineers. He currently serves as senior coastal engineer for the Jacksonville District, and Regional Technical Specialist in coastal engineering for South Atlantic Division. Mr. Martin has over twenty-five years of experience in all phases of the design, construction, maintenance, and monitoring of Federal shore protection and navigation projects. Duties require extensive knowledge and experience in coastal hydraulics and sediment transport, coastal geology, statistical analysis, and numerical modeling of coastal processes. Mr. Martin is highly experienced in the principles, policies, and methodologies of conducting advanced coastal engineering studies.

**Jim Neubauer**: Since August 2007 Mr. Neubauer has served as the ATR coordinator and a lead reviewer in the Cost Engineering Directory of Expertise for Civil Works located in Walla Walla District (Cost DX). He has served 29 years as a civil engineer with experience in military and civil works construction, project management and cost engineering. Mr. Neubauer is a licensed professional engineer, a certified cost engineer and a certified project manager – level 1. Since 1992, Mr. Neubauer has served as a senior lead cost engineer for Albuquerque District, Europe District and Walla Walla District in both military and civil works. His current reviews include civil works cost estimates, schedules and risk analyses. Mr. Neubauer assisted the development of the current civil works cost Engineer Regulation ER 1110-2-1302, was a main author of the civil works cost Engineering Technical Letter ETL 1110-2-573, the current Cost and Schedule Risk Analysis Guidance and the Cost ATR Guidance for the US Army Corps of Engineers. Mr. Neubauer has led many cost ATRs and numerous teams in developing or reviewing multi-billion dollar estimates for the Corps and the Department of Energy.

Vertical Team Members

| NAME | OFFICE | ROLE | PHONE | EMAIL |
|---|---|---|---|---|
| Sue Ferguson | CELRN Plan Formulation | ECO-PCX Lead | 615-736-7192 | Sue.L.Ferguson@usace.army.mil |
| Peter Blum | CENAD Planning CoP Team Lead | MSC Lead | 718-765-7066 | Peter.R.Blum@usace.army.mil |
| Roselle Henn | CENAD Environmental Team Lead | MSC | 718-765-7062 | Roselle.E.Henn@usace.army.mil |
| Catherine Shuman | NAD-RIT | HQ RIT Lead | 202-761-1379 | Catherine.M.Shuman@usace.army.mil |

**ATTACHMENT 2: DQC Documentation**

New York & New Jersey Harbor Deepening Project

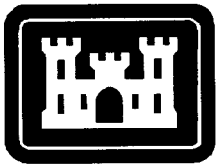
Beneficial Use of Dredged Material to Restore Yellow Bar Hassock

Detailed Project Report

Jamaica Bay Marsh Islands

Jamaica Bay, Brooklyn, New York

Section 207



# QUALITY CONTROL REPORT

September 2010

# STATEMENT OF TECHNICAL REVIEW
**for**
**Yellow Bar Hassock, Jamaica Bay Marsh Islands**
**Jamaica Bay, Brooklyn, New York**
**Detailed Project Report for Beneficial Use of Dredged Material**
**Section 204 of WRDA 1992, as amended by Section 207 of WRDA 1996 and Section 2037 of WRDA 2007**

Completion of District Quality Control:

The U.S. Army Corps of Engineers, New York District has prepared all documents related to the Yellow Bar Hassock, Jamaica Bay, Brooklyn, New York, Engineering Documentation Report for the Beneficial Use of Dredged Material, Jamaica Bay Marsh Islands, Yellow Bar Hassock, Jamaica Bay, Brooklyn, New York Draft Detailed Project Report.

A Quality Assurance/Quality Control (QA/QC) review was undertaken to a level of detail that is appropriate to the level of risk and complexity inherent in the study. During the independent technical review, compliance with established policy principles and procedures utilizing justified and valid assumptions were verified. This included review of assumptions; methods, procedures, and material used in analysis; alternatives evaluated; the appropriateness of data used and level of data obtained; and reasonableness of results, including whether the product meets the customers' needs consistent with law and existing Corps policy.

This report was prepared by a team comprised of engineers, scientists and environmental specialists each having the necessary skills, knowledge and abilities to conduct such studies. Major concerns and issues were addressed as per the attached documentation.

**Yellow Bar Hassock, Jamaica Bay Marsh Islands**
**Jamaica Bay, Brooklyn, New York**
**Detailed Project Report for Beneficial Use of Dredged Material**
**Section 204 of WRDA 1992, as amended by Section 207 of WRDA 1996 and Section 2037 of WRDA 2007**

## CERTIFICATION OF TECHNICAL REVIEW

As noted above, all concerns resulting from technical review of this project have been incorporated or adequately addressed. It is recommended that the report be forwarded to HQUSACE and the public. The report and all associated documents required by the National Environmental Policy Act have been fully reviewed.

Frank Santomauro, P.E.
Chief, Planning Division
9/13/2010
Date

Arthur Connolly, P.E.
Chief, Engineering Division
9/20/10
Date

Noreen Dean Dresser
Chief, Real Estate Division
9/20/10
Date

Joseph Seebode
Chief, Programs and Project Management
9-22-10
Date

**Yellow Bar Hassock, Jamaica Bay Marsh Islands**
**Jamaica Bay, Brooklyn, New York**
**Detailed Project Report for Beneficial Use of Dredged Material**
**Section 204 of WRDA 1992, as amended by Section 207 of WRDA 1996 and Section 2037 of WRDA 2007**

## CERTIFICATION OF LEGAL REVIEW

The Yellow Bar Hassock, Jamaica Bay Marsh Islands, Detailed Porject Report the Beneficial Use of Dredged Material, Jamaica Bay, Brooklyn, New York Draft Detailed Project Report (Section 207 of WRDA 1996), including all associated documents required by the National Environmental Policy Act, has been fully reviewed by the Office of Counsel, New York District and is approved legally sufficient.

Lorrae Lee

Lorraine Lee
District Counsel

9/22/10
Date

**Yellow Bar Hassock, Jamaica Bay Marsh Islands**
**Jamaica Bay, Brooklyn, New York**
**Detailed Project Report for Beneficial Use of Dredged Material**
**Section 204 of WRDA 1992, as amended by Section 207 of WRDA 1996 and Section 2037 of WRDA 2007**

STUDY DEVELOPMENT TEAM REVIEW

| | |
|---|---|
| Mark Lulka<br>Project Manager | 17 SEP 2010<br>Date |
| William F. Slezak, P.E., CENAN-PP-H<br>Chief – PPMD, Harbor Branch | 21-Sep 2010<br>Date |
| Sheila Rice-McDonnell, P.E., CENAN-EN-MC<br>Engineering | 20 Sep 2010<br>Date |
| Karen Ashton, P.E.<br>Project Planner | 17 September 2010<br>Date |
| Caroline McCabe<br>Economist | 17 September 2010<br>Date |
| Melissa Alvarez<br>Biologist | 20- Sept 2010<br>Date |
| Gail Woolley, P.E.<br>Engineering | 20 - Sept 2010<br>Date |
| Anthony Schiano<br>Cost Engineering | 20 - SEPT 2010<br>Date |
| Stephen Couch, CENAN-PL-F<br>Plan Formulation | 17 Sep 2010<br>Date |
| Peter Weppler, CENAN-PL-E<br>Environmental | 20 Sept 10<br>Date |

**Yellow Bar Hassock, Jamaica Bay Marsh Islands**
**Jamaica Bay, Brooklyn, New York**
**Detailed Project Report for Beneficial Use of Dredged Material**
**Section 204 of WRDA 1992, as amended by Section 207 of WRDA 1996 and Section 2037 of WRDA 2007**

## DISTRICT QUALITY CONTROL

We, the Technical Review Team, certify that a District Quality Control review has been completed. The Technical Review Team worked in collaboration with the Study Team to discuss and to resolve technical comments and issues.

Jodi McDonald., CENAN-PL-F
Plan Formulation

20 Sept 2010
Date

Howard Ruben, CENAN-PL-E
Environmental

20 Sept 2010
Date

Michael Morgan, CENAN-EN-H
Engineering

9/17/10
Date

**ATTACHMENT 3: ATR Certification Documentation**

CEMVR-PD-F 08 September 2010

MEMORANDUM FOR RECORD

SUBJECT: Beneficial Use of Dredged Material to restore Yellow Bar Hassock, Summary of Agency Technical Review.

1. The Draft Engineering Documentation Report for the Yellow Bar Hassock Project Agency Technical Review (ATR) was conducted from July 19 August to 08 September 2010.

2. The team was comprised of Corps of Engineers employees that did not participate in the planning of the project (see table below).

| District | Name | Specialist | Org Code |
|---|---|---|---|
| CENWW-EC-X | James Neubauer | Cost Dx | G4L1X00 |
| CEMVR-PD-F | Marshall Plumley | ATR Lead | B5K2100 |
| CENAB-OP-NN | Robert Blama | Operations | E1R0600 |
| CENAB-PL-P | Regina Berger | Biologist | E1K0500 |
| CELRN-PM-P | Sue Ferguson | ECO/PCX | H3H4D00 |
| CESAJ-EN-W | Tom Martin | Engineering | K3L0AD0 |

3. A kickoff meeting was held via phone on 19 July 2010 to begin the review. The PDT presented an overview of the project. The schedule for the review and basic ATR protocol was discussed. Over a two week period, the team reviewed the document and submitted comments using DrChecks. Editorial comments were provided offline via email.

4. Following standard DrChecks procedure the PDT evaluated comments in the database and the ATR team back checked the comments. The team was provided the revised report and appendices. The team verified that necessary changes were made satisfactorily, and all comments resulting from Agency Technical Review have been resolved.

Marshall B. Plumley
ATR Team Leader
Plan Formulation Reviewer
Corps of Engineers
Rock Island District

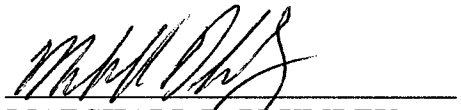
## STATEMENT OF TECHNICAL REVIEW

## BENEFICIAL USE OF DREDGED MATERIAL TO RESTORE YELLOW BAR HASSOCK

## CERTIFICATION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review team and the New York District Project Delivery Team have completed the review of the Draft Engineering Documentation Report for the Yellow Bar Hassock Project. Notice is hereby given that an agency technical review, that is appropriate to the level of risk and complexity inherent in the project, has been conducted. During the agency technical review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses; alternatives evaluated; the appropriateness of data used and level obtained; and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing Corps policy. The agency technical review was accomplished by an independent team composed of Corps of Engineers employees that were not involved in the planning of the project.

The review is hereby certified.



**MARSHALL B. PLUMLEY**
Team Leader/Plan Formulation Reviewer
Regional Technical Specialist
Corps of Engineers
Rock Island District.

9/8/10
Date

**NEW YORK & NEW JERSEY HARBOR DEEPENING PROJECT**
**RESTORE YELLOW BAR HASSOCK**
**ENGINEERING DOCUMENTATION REPORT (EDR)**
**USACE- NEW YORK DISTRICT**

## COST ENGINEERING DX TPCS ATR CERTIFICATION

The Walla Walla Cost Dx representatives have provided an adequate Agency Technical Review (ATR) of the 2011 Budget and Total Project Cost, studying the project scope, report, cost estimates, schedules, escalation, and contingency development in accordance with ER 1110-2-1150 Engineering and Design for Civil Works Projects and ER 1110-2-1302 Civil Works Cost Engineering.

As of 7 September 2010, the Walla Walla District, Cost Engineering Directory of Expertise (Dx) for Civil Works, certifies the NAN Yellow Bar Hassock EDR presented by USACE New York District. The Cost DX agency technical review (ATR) resulted in the total project cost estimated values of:

| | |
|---|---|
| Oct 2011 Price Level: | $25,177,000 |
| Fully Funded Amount: | $25,687,000 |

It is the responsibility of the New York District to correctly reflect these cost values within the Final Report.

7 Sep 2010
**Date**

**John P. Skarbek**
**Chief, Cost Engineering**
**Walla Walla District**

## Table C-4
## * * * Fully Funded Estimate * * *

Project: Yellow Bar Ecosystem Project (large design)
Location: Queens, NY

Calc. by: AS

| Acct. No. | Feature Description | Current MII Estimate Prepared: Jan 2010 / Effective Pricing Level: Jan 2010 Cost ($K) | Cont. ($K) | Cont. (%) | First Cost Including Contingencies ($K) | Program Year (Budget EC): 2011 / Effective Price Level Date: Oct 2010 Escalation % | Cost ($K) | Cont. ($K) | Contingencies ($K) | Fully Funded Estimate: Escalation % | Midpoint Date | Cost ($K) | Cont. ($K) | Fully Funded Cost Including Contingencies ($K) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06 | Fish and Wildlife Facilities | $ 17,572 | $ 3,491 | 20% | $ 21,063 | 0.77% | $ 17,708 | $ 3,518 | $ 21,227 | 1.84% | 2012Q2 | $ 18,030 | $ 3,583 | $ 21,613 |
| | Total | $ 17,572 | $ 3,491 | | $ 21,063 | | $ 17,708 | $ 3,518 | $ 21,227 | | | $ 18,030 | $ 3,583 | $ 21,613 |
| 30 | Engineering & Design | $ 1,248 | $ 248 | 20% | $ 1,496 | 1.18% | $ 1,263 | $ 251 | $ 1,514 | 1.55% | 2011Q3 | $ 1,280 | $ 255 | $ 1,535 |
| 30.1 | Monitoring | $ 441 | $ 88 | 20% | $ 529 | 1.18% | $ 446 | $ 89 | $ 535 | 3.88% | 2012Q2 | $ 464 | $ 92 | $ 556 |
| 30.2 | Adaptive Management | $ 147 | $ 29 | 20% | $ 176 | 1.18% | $ 149 | $ 30 | $ 178 | 3.88% | 2012Q2 | $ 155 | $ 31 | $ 186 |
| 31 | Constr. Mgmt | $ 1,421 | $ 282 | 20% | $ 1,703 | 1.18% | $ 1,438 | $ 286 | $ 1,723 | 3.88% | 2012Q2 | $ 1,500 | $ 297 | $ 1,797 |
| | **Totals** | **$ 20,829** | **$ 4,139** | **20%** | **$ 24,968** | | **$ 21,003** | **$ 4,173** | **$ 25,177** | | | **$ 21,429** | **$ 4,258** | **$ 25,687** |

| | |
|---|---|
| Based on First Costs: | |
| Total Federal Costs (65%) | $ 16,360 |
| Total Non-Federal Costs (35%) | $ 8,817 |
| | $ 25,177 |
| Based on Fully Funded Costs: | |
| Total Federal Costs (65%) | $ 16,700 |
| Total Non-Federal Costs (35%) | $ 8,987 |
| | $ 25,687 |

**ATTACHMENT 4: IEPR Waiver Request**

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
JACOB K. JAVITS FEDERAL BUILDING
NEW YORK, N.Y. 10278-0090

REPLY TO
ATTENTION OF

CENAN-PL

MEMORANDUM THRU: NORTH ATLANTIC DIVISION (CENWD- CENAD-PD-CID-S)
COMMANDER, NORTH ATLANTIC DIVISION
DISTRICT SUPPORT TEAM
ATTN: PD-CID 302 GENERAL LEE AVENUE, BROOKLYN, NY 11252
FOR HQUSACE (CECW-P/Tab Brown), 441 G STREET NW, WASH DC 20314

SUBJECT: Request for Waiver from Independent External Peer Review for the Yellow Bar Hassock, Jamaica Bay Marsh Islands, Brooklyn, NY Project

1. Reference is made to CENAD-PD-CID-S memorandum, subject as above, dated 9 November 2010, regarding Division's review of the draft Detailed Project Report for the subject project.

2. Reference is also made to the following:

   a. Draft Yellow Bar Hassock, Detailed Project Report (DPR), dated December 2010
   b. EC 1165-2-209

3. An Integrated Ecosystem Restoration Report / Environmental Assessment Report (ERR/EA) dated December 2005 was prepared by the U.S. Army Corps of Engineers to evaluate alternatives for aquatic habitat restoration through the beneficial use of dredged material at various degraded marsh islands within Jamaica Bay, Gateway National Recreation Area, Brooklyn and Queens, New York. The ERR/EA was prepared in accordance Section 204 of the Water Resources Development Act (WRDA) of 1992 (Beneficial Uses of Dredged Material), as amended by Section 207 of the WRDA of 1996 (33 U.S.C. 2326). Two (2) marsh island sites: Elders Point (including Elders Point East, Elders Point West, and the Elders' Center island) and Yellow Bar Hassock were evaluated in detail in the ERR/EA and recommended for ecological restoration via placement of dredged material from new navigation or maintenance dredging projects. The ERR/EA was approved by the North Atlantic Division on July 6, 2006.

   The Yellow Bar Hassock DPR was prepared to specifically address and update the restoration plan for salt marsh habitat at Yellow Bar Hassock, in accordance with Section 207 Authority as amended by Section 2037 of WRDA 2007. During the time that has passed since completion of the ERR/EA, Elders Point East Marsh Island was restored as environmental mitigation for the New York and New Jersey Harbor Deepening Project (NY/NJ HDP) and Elders Point West Marsh Island was as a Beneficial Use of Dredged Material, Ecosystem Restoration project.

Lessons learned from construction and monitoring at Elders Point East and construction at Elders Point West have provided information and resulted in design and construction refinements for the other islands within Jamaica Bay.

The current proposed plan for Yellow Bar Hassock is to restore approximately 47 acres of marsh within the northern half of the existing island. Approximately 85% of the restored marsh will be low marsh, with the balance restored as high marsh. The estimated total cost of project implementation is $19.1 million, including planning, engineering & design; construction management; monitoring and adaptive management; contingencies and escalation; and project close-out.

Due to the complicated nature of the Yellow Bar Hassock site and new information available, the interagency project delivery team agreed to update the design plans for this site after the additional monitoring results from the Elders Point East site were available and Elders Point West had been designed and constructed. Construction lessons learned and post-construction monitoring data from implementation of Elders East and construction lessons learned from the construction of Elders Point West has provided pertinent information to support modifications to the design of Yellow Bar Hassock. Further, a Value Engineering study was conducted that further refined costs and construction.

Based upon timing in implementing the beneficial use restoration plan identified in the ERR/EA, the opportunity for specific source contract reaches from the NY/NJ HDP has passed. Therefore, only one (1) material source has been identified in the DPR. This alternate source includes sand from Ambrose S-AM-3 contract reach. However, because the Ambrose contract is the final dredging contract for the NY/NJ HDP, timing of approval for the project is critical. Failure to utilize dredged material with the Ambrose contract for Yellow Bar would require identifying an alternate non-Federal partner with funding capabilities and utilizing material from a future maintenance dredging project.

4. EC 1165-2-209 states that Independent External Peer Review (IEPR) may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. There are two types of IEPR: Type I is generally for decision documents and Type II is generally for implementation products.

   (a) Type I IEPR. Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study.

   (b) Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior

to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

5. According to Engineer Circular 1165-2-209, Appendix D, any of the factors below require Independent External Peer Review:

   a. Significant threat to human life. The Yellow Bar Hassock project does not present a risk to human life.

   b. Total project cost greater than 45 million. The current cost estimate is $19 and has been reviewed by the Cost Estimating Center of Expertise at Walla Walla District. A Cost Dx certification (attached) was provided during Agency Technical Review.

   c. Request by the State Governor. There has been no request for Independent External Peer Review by the Governor of New York.

   d. Request by a State or Federal Agency. There has been no request for Independent External Peer Review by any State or Federal Agency, including the non-Federal sponsor, the Port Authority of New York & New Jersey, or stakeholders at the New York State Department of Environmental Conservation, the New York City Department of Environmental Protection, the National Park Service.

   e. Significant public dispute. There is no significant public dispute. An Environmental Impact Statement is not necessary and an Environmental Assessment was approved as included in the December 2005 ERR/EA.

   f. Methods are novel or complex. Pumping dredged material and planting are not novel. Additionally, as indicated in Paragraph 3 of this Memorandum, the Yellow Bar Hassock project will be the third Jamaica Bay marsh island to be constructed in the past five (5) years.

6. Additional Review Efforts:

   a. EC 1165-2-209 states that a fundamental principle of the review guidance is that " ... an extra set of eyes is beneficial. Reviews have significantly contributed to improved quality of work in the planning, design, and construction of projects." The EC also states that Independent External Peer Review" ... is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of US ACE is warranted." The Yellow Bar Hassock project has incorporated several layers of outside review throughout the process, including review by the Port Authority of New York & New Jersey, the New York State Department of Environmental Conservation, the New York City Department of Environmental Protection, and the National Park Service (NPS), including review by a NPS Blue-Ribbon panel.

   Although EC 1165-2-209 states that IEPR is not mandatory, it is still advisable for most projects. However, the Yellow Bar Hassock project was formulated taking into account lessons learned from the construction of Elders Point East

and Elders Point West. Further, not one, but two Value Engineering studies were conducted. The first Value Engineering study was conducted for Yellow Bar Hassock during the development of the now constructed Elders Point West marsh island. A second Value Engineering study was conducted in November 2010 prior to the final draft of the Yellow Bar Hassock DPR that was forwarded to North Atlantic Division for Approval to transmit to the ASA (CW).

b. The Corps also invited other agencies and local governments to assist with various aspects of project development and environmental compliance, including reviewing drafts of the environmental document. Those that were invited to participate were chosen because they have jurisdiction by law or special expertise with respect to environmental issues. Agencies that have assisted with the development of the project include the Department of State, Fish and Wildlife Service, and the Environmental Protection Agency.

7. Recommendations: New York District and North Atlantic Division recommend to the Chief of Engineers that a waiver be granted from conducting Independent External Peer Review on the Yellow Bar Hassock, Beneficial Use of Dredged Material, Jamaica Bay Marsh Island Restoration Project. It is further recommended that approval authority be delegated to the North Atlantic Division Commander, BG Peter A. DeLuca, Commanding General.

The District does not recommend that an IEPR (Type 1 or Type 2) is necessary at this juncture. All of the risks associated with the implementation of Yellow Bar Hassock have been minimized by lessons learned from the aforementioned completed Jamaica Bay marsh island projects.

Further, the success of the implementation of this project is contingent upon meeting the schedule requirements of the New York & New Jersey Harbor Deepening project to be able to beneficially use the dredged material for Jamaica Bay marsh restoration-contract award in FY11. The success of implementation of this project is also contingent upon timing with the implementation of the O&M dredging of Rockaway Inlet to its authorized depth in FY11 and construction award of the Harbor Deepening Project's final contract channel in FY11.

Based on the above information, the District purports that there is sufficient and appropriate rationale to support a waiver request.

Should you have any questions or comments please contact Karen Ashton, P.E., Project Planner at (917) 790-8607.

Respectfully,

Frank Santomauro, P.E.
Chief, Planning Division
New York District
U.S. Army Corps of Engineers

**ATTACHMENT 5: ACRONYMS AND ABBREVIATIONS**

| Term | Definition | Term | Definition |
|---|---|---|---|
| AFB | Alternative Formulation Briefing | NED | National Economic Development |
| ASA(CW) | Assistant Secretary of the Army for Civil Works | NER | National Ecosystem Restoration |
| ATR | Agency Technical Review | NEPA | National Environmental Policy Act |
| CSDR | Coastal Storm Damage Reduction | O&M | Operation and maintenance |
| DPR | Detailed Project Report | OMB | Office and Management and Budget |
| DQC | District Quality Control/Quality Assurance | OMRR&R | Operation, Maintenance, Repair, Replacement and Rehabilitation |
| DX | Directory of Expertise | OEO | Outside Eligible Organization |
| EA | Environmental Assessment | OSE | Other Social Effects |
| EC | Engineer Circular | PCX | Planning Center of Expertise |
| EIS | Environmental Impact Statement | PDT | Project Delivery Team |
| EO | Executive Order | PAC | Post Authorization Change |
| ER | Ecosystem Restoration | PMP | Project Management Plan |
| FDR | Flood Damage Reduction | PL | Public Law |
| FEMA | Federal Emergency Management Agency | QMP | Quality Management Plan |
| FRM | Flood Risk Management | QA | Quality Assurance |
| FSM | Feasibility Scoping Meeting | QC | Quality Control |
| GRR | General Reevaluation Report | RED | Regional Economic Development |
| HQUSACE | Headquarters, U.S. Army Corps of Engineers | RMC | Risk Management Center |
| IEPR | Independent External Peer Review | RMO | Review Management Organization |
| ITR | Independent Technical Review | RTS | Regional Technical Specialist |
| LRR | Limited Reevaluation Report | SAR | Safety Assurance Review |
| MSC | Major Subordinate Command | USACE | U.S. Army Corps of Engineers |
| | | WRDA | Water Resources Development Act |

**ENCL 2**

CELRN-PM-P 28 April 2011

MEMORAMDUM FOR RECORD

SUBJECT: Ecosystem Restoration Planning Center of Expertise, Review of Peer Review Plan for New York & New Jersey Harbor Deepening Project Beneficial Use of Dredged Material to Restore Yellow Bar Hassock Jamaica Bay and Marsh Islands Jamaica Bay, Brooklyn, New York Engineering Documentation Report, New York District

1. The Ecosystem Restoration Planning Center of Expertise (ECO-PCX) has reviewed subject review plan (RP) which essentially documents a completed review process. Agency Technical Review (ATR) of the Engineering Documentation report The RP (Attachment 1) meets the criteria outlined by Engineering Circular (EC) 1165-2-209, Water Resources Policies and Authorities, CIVIL WORKS REVIEW POLICY, 31 Jan 2010. A draft endorsement memorandum (Attachment 2) is also attached.

2. The RP includes a discussion of both engineering and planning models. The ecosystem restoration benefits were calculated using the Evaluation of Planned Wetlands (EPW) Model. This model was also used in the Jamaica Bay, Marine Park, and Plumb Beach Interim Feasibility Study, conducted by New York District. The EPW Model underwent review including IEPR in the fall of 2010. The model review report, dated 29 October 2010, recommended changes to the EPW template after ATR of Yellow Bar Hassock was completed in September 2010. A subsequent sensitivity analysis (Attachment 3) of how the model was used for Yellow Bar Hassock compared to the model review comments was made by the District. A total of 35 comments were made on the model, of those 24 related to spreadsheets not used in the analysis for Yellow Bar Hassock. Of the remaining 11 comments, most were related to additional documentation. None of the comments received from either the model certification panel or any of the subsequent recommendations to change or alter the model implementation method from the District PDT, would result in changes to the analysis performed or results achieved during the plan formulation process for the Yellow Bar Hassock Project.

3. The District has requested exclusion from Independent External Peer Review (IEPR) due to the existence of completed phases, the low risks associated with project implementation and its lack of controversy. The exclusion request is at Headquarters.

4. Approval of this review plan is recommended.

Sue Ferguson
NAD Account Manager
Ecosystem Restoration Planning Center of Expertise

ATTACHMENT:
Approved Peer Review Plan
Draft Endorsement Memo from PCX
Sensitivity Analysis of Model Comments

CF:
CENAN-PL-FC (K. Ashton, J. McDonald)
CENAD-PSD-P (R. Henn)
CEMVD-RB-T (J. Staebell and C. Knollenberg)

**ENCL 3**

CENAN-PL 28 April 2011

New York & New Jersey Harbor Deepening Project
Beneficial Use of Dredged Material to Restore Yellow Bar Hassock
Jamaica Bay Marsh Islands
Jamaica Bay, Brooklyn, New York

Use of Evaluation of Planned Wetlands (EPW) Model for Habitat Improvement Assessment – Sensitivity Analysis and Applicability of the Plan Formulation

The Yellow Bar Hassock Beneficial Use of Dredged Material Project utilized the EPW model to compare existing and with project improvements in habitat for the purposes of the Cost Effectiveness/Incremental Cost Analysis (CE/ICA). EPW is a rapid-assessment methodology that is appropriate for rapid, qualitative screening of basic ecological trends and predicting the likelihood that a function is occurring. The applicability of the EPW model for tidal wetland restoration projects was reviewed as part of the model certification process for the Jamaica Bay, NY Ecosystem Restoration Feasibility Study. As such, the model review panel indicated that "Indices, as used in the Evaluation of Planned Wetlands (EPW) Model, provide a rapid assessment of wetland structure and thus serve well as a tool for U.S. Army Corps of Engineers (USACE) mitigation and ecosystem restoration planning evaluations." Although the panel indicated that they oversimplify complex ecological issues, the District indicated that the EPW is a tool to demonstrate overall habitat improvements compared to the without project condition. The comments provided by the model review panel would not affect the relative change in model output values given possible changes in model input values associated with tidal saltwater marsh systems found in the Hudson Raritan Estuary. For the purposes of this study and future intended applications within District boundaries, the District expects to use this model, with recommended changes on these systems.

Of the 41 total comments received for the EPW Model Review, 29 of the comments were relevant only to the spreadsheets used for the Jamaica Bay Ecosystem Restoration Study specifically. Of the remaining 12 comments, only two have specific relevance to the Yellow Bar Hassock study. The first concern raised relevant to Yellow Bar is that the EPW Model frequently mentions wetland functions, but these are often not in a strictly ecological context. Specifically for the Yellow Bar Hassock Project, the EPW model was utilized to define the existing and future with project conditions for the restoration of vegetated tidal wetlands on a former marsh island within Jamaica Bay. The EPW for Yellow Bar Hassock was used as a tool to demonstrate overall habitat improvements compared to the without project condition. The EPW outputs compared the impaired condition of the current remnant marsh island and calculated the relative potential habitat improvement values in order to provide a "benefit" value. Based on the comments received on the model, the application of the model for the Yellow Bar Project meets the intent of utilizing this model on tidal saltwater marsh projects within the Hudson Raritan Estuary study area. To ensure that the model meets the District's goal of assessing and designing planned (creation/restoration) wetlands, the District will ensure additional information is included in the habitat evaluation discussion in the report which indicates that the EPW model

provides results that are useful relative to other alternatives within this project and the scope of the wetland of interest will be defined more clearly (to include intertidal creeks).

The other concern raised by the model certification review panel relevant to Yellow Bar is the fact that the EPW model does not take into consideration broader landscape scale issues, such as fish larval supply to tidal saltwater marshes. This concern does not affect the formulation of the alternatives for the Yellow Bar Hassock specific project, mainly because the purpose of the project is to restore tidal wetland islands to a historical level, not specifically to define the restoration with explicit functional components, such as fish larval supply, which would be part of a much larger scale restoration planning effort throughout Jamaica Bay, New York Harbor and the Hudson-Raritan Estuary. These marsh islands are significant by being where there are; providing important ecological services, including wildlife habitat, support for the food web, shoreline erosion control, and water column filtration.

Further, restoring the degraded ecosystem of the Jamaica Bay Marsh Islands contributes to the Hudson-Raritan Estuary Comprehensive Restoration Plan (HRE-CRP) whose overall goal is to restore or create 15,200 acres of wetland within the Hudson-Raritan Estuary over the 50 year period of analysis. The restoration of the marsh islands in Jamaica Bay will contribute to meeting the HRE-CRP goals. The overall project purpose is to improve the environmental quality (water and wildlife habitat) of the Jamaica Bay Marsh Islands and its associated salt marshes as part of the overall Jamaica Bay system. Yellow Bar Hassock is so degraded that, if not pursued now, there would be little to no opportunity to salvage existing marsh plants and salt marsh habitat. Strategies are needed to stop additional deterioration and to rebuild salt marshes as the remaining marsh islands are anticipated to be entirely lost within the next decade.

Again, to summarize the evaluation of the EPW model comments with the application of the model for the Yellow Bar Hassock Project, the use of the EPW model in concert with the professional judgment of the users provided “quantifiable benefits” for the purposes of the CE/ICA analysis. None of the comments received from either the model certification panel, or any of the subsequent recommendations to change or alter the model implementation method from the District PDT, would result in changes to the analysis performed or results achieved during the plan formulation process for the Yellow Bar Hassock Project.