



REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
NORTH ATLANTIC DIVISION, US ARMY CORPS OF ENGINEERS  
FORT HAMILTON MILITARY COMMUNITY  
BROOKLYN, NEW YORK 11252-6700

CENAD-PSD-P

DEC 17 2007

MEMORANDUM FOR Commander, Baltimore District, ATTN: CENAB-PL

SUBJECT: Review Plan Approval for Mid-Chesapeake Bay Island Ecosystem Restoration Integrated Feasibility Study

1. Reference:

- a. EC 1105-2-408, Peer Review of Decision Documents, 31 May 2005.
- b. Memorandum, CECW-CP, 30 March 2007, subject: Peer Review Process.

2. The enclosed Review Plan for the Mid-Chesapeake Bay Island Ecosystem Restoration Integrated Feasibility Study has been prepared in accordance with the referenced guidance.

3. The Plan has been made available for public comment, and any comments received have been incorporated. It has been coordinated with the Ecosystem Planning Center of Expertise of Mississippi Valley Division which is the lead office to execute this Plan. The Plan includes external peer review.

4. I hereby approve this Plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Plan or its execution will require new written approval from this office.

Encl

Joseph R. Vietri  
Chief, Planning & Policy Community of Practice  
Program Support Division  
Programs Directorate

**PEER REVIEW PLAN**

**MID-CHESAPEAKE BAY ISLAND ECOSYSTEM RESTORATION  
INTEGRATED FEASIBILITY REPORT AND ENVIRONMENTAL IMPACT  
STATEMENT**

## **1. Purpose and Requirements.**

a. This document outlines the peer review plan for Mid-Chesapeake Bay Island Ecosystem Restoration Integrated Feasibility Report and Environmental Impact Statement. EC 1105-2-408 dated 31 May 2005 "Peer Review of Decision Documents" (1) establishes procedures to ensure the quality and credibility of Corps decision documents by adjusting and supplementing the review process and (2) requires that documents have a peer review plan. The Circular applies to all feasibility studies and reports and any other reports that lead to decision documents that require authorization by Congress. The feasibility level report will lead to Congressional Authorization and is therefore covered by the Circular.

b. The Circular outlines the requirement of the two review approaches (independent technical review (ITR) and external peer review (EPR)) and provides guidance on Corps Planning Centers of Expertise (PCX) involvement in the approaches. This document addresses review of the decision document as it pertains to both approaches and planning coordination with the appropriate Center.

(1) ITR. Districts are responsible for reviewing the technical aspects of the decision documents through the ITR approach. ITR is a critical examination by a qualified person or team that was not involved in the day-to-day technical work that supports the decision document. ITR is intended to confirm that such work was done in accordance with clearly established professional principles, practices, codes, and criteria. In addition to technical review, documents should also be reviewed for their compliance with laws and policy. The Circular also requires that DrChecks (<https://www.projnet.org/projnet/>) be used to document all ITR comments, responses, and associated resolution accomplished.

(2) EPR. The Circular added external peer review to the existing Corps review process. This approach does not replace the standard ITR process. The peer review approach applies in special cases where the magnitude and risk of the project are such that a critical examination by a qualified person outside the Corps is necessary. EPR can also be used where the information is based on novel methods, presents complex interpretation challenges, contains precedent-setting methods or models, or is likely to affect policy decisions that have a significant impact. The degree of independence required for technical review increases as the project magnitude and project risk increase.

(a) Projects with low magnitude and low risk may use a routine ITR.

(b) Projects with either high magnitude/low risk or low magnitude/high risk would require both Corps and outside reviewers on the ITR team to address the portions of the project that cause the project to rate high on the magnitude or risk scale.

(c) Projects with high magnitude and high risk require a routine ITR as well as an EPR.

(d) Supplemental information provided in the March 30, 2007 CECW-CP Memorandum Subject: Peer Review Process stated that in the near term, expensive projects would warrant External Peer Review even if they don't trigger other criteria.

(3) PCX Coordination. The Circular outlines PCX coordination in conjunction with preparation of the review plan. Districts should prepare the plans in coordination with the appropriate PCX. The Corps PCX are responsible for the accomplishment and quality of ITR and EPR for decision documents covered by the Circular. Centers may conduct the review or manage the review to be conducted by others. Reviews will be assigned to the appropriate Center based on business programs. The Circular outlines alternative procedures to apply to decision documents. Each Center is required to post review plans to its website every three months as well as links to any reports that have been made public. The Office of Water Policy Review (OWPR) will consolidate the lists of all review plans and establish a mechanism for soliciting public feedback on the review plans.

## **2. Project Description.**

a. Decision Document. The purpose of the decision document entitled Mid-Chesapeake Bay Island Ecosystem Restoration Integrated Feasibility Report and Environmental Impact Statement is to present the results of a feasibility study undertaken to restore the islands in the middle region of Chesapeake Bay and dispose of dredged material from the Upper Chesapeake Bay Approach Channels to the Port of Baltimore. The feasibility phase of this project is cost shared 50/50 with the project sponsor, the State of Maryland Department of Transportation, Maryland Port Administration. The report provides planning, engineering, and implementation details of the recommended restoration plan to allow final design and construction to proceed subsequent to the approval of the plan.

b. General Site Description. The Mid-Chesapeake Bay study area includes the eastern half of the Chesapeake Bay, from the Chester River to the MD/VA state line. This area is consistent with those geographical areas outlined in the Federal Dredged Material Management Plan, which define the Middle Bay as the region of the Bay and its tributaries from the Chesapeake Bay Bridge south to the Virginia state line.

c. Project Scope. This study focuses on restoration of islands and associated habitats through beneficial use of dredged material based on recommendations from the *Baltimore Harbor and Channels, Dredged Material Management Plan, Preliminary Assessment*, dated July 2001. The DMMP recommended investigation of dredged material placement options in Mid-Chesapeake Bay. One hundred and five (105) named islands are present within the study area and were considered in the study scoping process. Those islands were systematically narrowed down using various engineering

and environmental filtering criteria, resulting in the selection of James and Barren Island for further consideration. The estimated first cost of construction is \$1.1 billion.

d. **Problems and Opportunities.** The goal for this feasibility study is to restore and protect valuable but threatened Mid-Chesapeake Bay island ecosystems through the beneficial use of dredged material. Remote island habitat is critical to the Chesapeake Bay ecosystem. In the last 150 years, it has been estimated that 10,500 acres of remote island habitat have been lost in the middle-eastern portion of Chesapeake Bay due to erosion and sea-level rise. Most island habitats will likely be completely eroded and lost to the Chesapeake Bay in the next 20 years (Leatherman, S. et al, 1995). Within the Chesapeake Bay, isolated island habitat is used by many species of migratory birds, as well as fish and other wildlife species. These islands provide a uniquely isolated nesting and foraging habitat to a diverse assemblage of wildlife. Even though similar vegetative communities may occur on the mainland, isolation, lack of human disturbance, and fewer predators, particularly on wetland islands with hummocks of 5 acres or less, make islands more attractive.

There is also the opportunity to provide capacity for placement of dredged material (3.2 million cubic yards/ year). The Federal DMMP identified a need to place 30 to 70 million cubic yards of material over a 20 year period.

e. **Product Delivery Team.** The product delivery team (PDT) is comprised of those individuals directly involved in the development of the decision document. Disciplines are listed below.

<b>Organization</b>	<b>Discipline</b>
PPMD	Project Manager
Planning Division	Study Manager
Planning Division	Biologist
Planning Division	Economist
Engineering Division	Design Manager
Engineering Division	Civil Engineering Technician
Engineering Division	Civil Engineer
Engineering Division	Cost Estimating
Engineering Division	Hydraulic Engineer
Engineering Division	Geotechnical Engineer
Real Estate	Real Estate Specialist

f. **Vertical Team.** The Vertical Team includes District management, District Support Team (DST) and Review Integration Team (RIT) staff as well as members of the Planning of Community of Practice (PCoP).

<b>Organization</b>	<b>Discipline</b>
CENAB	Plan Formulation
CENAD	Chief, Plan Formulation
CECW-NAD	RIT Manager
CECW-PC	Office of Water Project Review Manager
CEMVD	Ecosystem Restoration PCX (ECO-PCX) Director
CEMVD	ECO-PCX Deputy Director
CEMVD	ECO-PCX Technical Director
CEMVR-PM-F	ECO-PCX Action District

3. **ITR Plan.** As outlined above in paragraph 1.b. (1), the District is responsible for ensuring adequate technical review of decision documents. The responsible PDT District of this decision document is Baltimore District (NAB).

a. General. An ITR Manager shall be designated for the ITR process. The ITR Manager is responsible for providing information necessary for setting up the review, communicating with the Study Manager, providing a summary of critical review comments, collecting grammatical and editorial comments from the ITR team (ITRT), ensuring that the ITRT has adequate funding to perform the review, facilitating the resolution of the comments, and certifying that the ITR has been conducted and resolved in accordance with policy.

b. Team. The ITRT was comprised of individuals that have not been involved in the development of the decision document and were chosen based on expertise, experience, and/or skills. The members roughly mirrored the composition of the PDT. Additional ITR of cost and timing issues will be conducted by a Corps Economist outside of NAD. The ITRT member's areas of expertise are:

<b>Organization</b>	<b>Title</b>
USACE, Philadelphia District	Regional Technical Specialist, Plan Formulation; Lead for Independent Technical Review
USACE, Philadelphia District	Chief, Economics and Social Analysis Branch
USACE, Philadelphia District	Regional Technical Specialist (Biologist)
USACE, Philadelphia District	Chief, Geotechnical Section

USACE, Baltimore District	Realty Specialist
USACE, Philadelphia District	Cost Engineer
USACE, Philadelphia District	Regional Technical Specialist (Coastal)
USACE, Philadelphia District	Project Manager, Operations Division
USACE	Senior Economist

c. Communication. The communication plan for the ITR is as follows:

(1) The team provided comments for consolidation by the ITR manager. The comments and documentation of the review were provided to the Study Manager, and considered for response by the PDT.

(2) A revised electronic version of the report and appendices with comments incorporated was made available to the ITR team during back checking of the comments.

d. Funding.

(1) The PDT district provided labor funding. The Study Manager worked with the ITR manager to ensure that adequate funding is available and is commensurate with the level of review needed. The cost for this review was \$22,000.

e. Timing and Schedule.

(1) The ITR was conducted in April 2005. The team was given two weeks time for review, though some comments took a few days longer to be received.

(2) The ITR process for this document followed the timeline below.

<b>Task</b>	<b>Date</b>
Comment period begin	8 April 2005
ITR Comments due	22 April 2005
Certification	31 October 2005

f. Review.

(1) ITR Team responsibilities were follows:

(a) Reviewers reviewed the draft report to confirm that work was done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy.

(b) Reviewers paid particular attention to one's discipline but also commented on other aspects as appropriate. Reviewers that did not have any significant comments pertaining to their assigned discipline provided a comment stating this.

(2) PDT Team responsibilities are as follows:

(a) The team reviewed comments provided by the ITRT and provide responses to each comment.

(b) Team members contacted the PDT and ITRT managers to discuss any "non-concur" responses prior to submission.

g. Resolution.

(1) Reviewers back checked PDT responses to the review comments. Conference calls were used to resolve any conflicting comments and responses.

(2) Reviewers may "agree to disagree" with any comment response and close the comment with a detailed explanation. ITRT members shall keep the ITR manager apprised of problematic comments. The vertical team will be informed of any policy variations or other issues that may cause concern during Headquarter review.

h. Certification. To fully document the ITR process, a statement of technical review was prepared. Certification by the ITR manager and the Study Manager occurred once issues raised by the reviewers were addressed to the review team's satisfaction. Indication of this concurrence will be documented by the signing of a certification statement, which is attached to draft report Quality Control Review Report (QCRR). A summary report of all comments and responses will follow the statement and accompany the report throughout the report approval process as part of the QCRR.

i. Feasibility Review Conference (FRC). The FRC for this project was held on May 23, 2006. The Project Guidance Memorandum for the subject report has been prepared and HQ comments have been resolved. Finalization of the PGM is anticipated following completion of the EPR.

#### **4. EPR Plan.**

a. This decision document will present the details of a feasibility study undertaken to restore islands in Chesapeake Bay and dispose of dredged material as described in paragraph 2 above. This project meets only the cost criteria (high magnitude) for EPR outlined in the Circular. Due to its high cost, External Peer Review will be conducted.

(1) Novel Methods. The project involves restoration of aquatic habitat through the implementation of standard restoration and dredged material placement concepts and methodologies which are not novel. Construction methods are based on the Corps' extensive history of dredged material placement around the nation, including Chesapeake Bay, and involve standard construction of confined dredged material placement cells, hydraulic offloading of scows, placement of fine dredged material, dewatering of cells, shaping material and establishing vegetation. Specifically, the Corps has applied these same constructions methods in the ongoing restoration of Poplar Island also in the middle portion of Chesapeake Bay. Design of ecological features of the restoration project apply basic concepts of estuarine ecology and propose implementation of standard restoration methods such as shaping and establishment of native vegetation. The restoration would be conducted in small increments as dredged material is available to assure proper dewatering and efficient placement. Shaping and planting will occur when an individual cell reaches the required elevations and is stable. Over the 40 plus-year implementation time-frame (from dike construction to final close-out), these small increments would cumulatively result in the large magnitude of restoration.

(2) Complex challenges for interpretation. The project does not present complex challenges for interpretation. Project needs and benefits are not difficult to interpret. Historic data clearly document the loss of islands in the bay and specifically those under evaluation. The link between island habitat and benefits to fish and wildlife are clearly documented through the monitoring that has been conducted at Poplar Island. The Poplar Island project has been monitored extensively during construction and no major performance issues have been identified.

(3) Precedent-setting methods or models. The construction/restoration methods, as described above, are not precedent-setting. Nation-wide, the Corps is pursuing beneficial use of dredged material such as the proposed project. The methods have already been applied at the Poplar Island site. The ecosystem output model may be considered precedent-setting. The Island Community Unit model was used to quantify ecosystem outputs and was developed specifically for the Mid-Bay and Poplar Island Expansion Projects. The model was developed in cooperation with resource agencies and utilized the expertise of agency and university avian, fisheries, and macroinvertebrate ecologists. The model uses the U.S. Fish and Wildlife Service's Habitat Evaluation Procedures accounting framework. The experts were used to develop the habitat quality scores. Ecologists at the Corps' Engineering Research and Development Center who were not involved in model development will evaluate the quality of the model and the accuracy of the math and spreadsheets used in the model.

(4) Conclusions of the study are not likely to change prevailing practices. Recommendations will continue the practice of beneficial use of dredged material to restore key habitats such as island and near-shore habitat. The actual practices used in the placement of dredged material to restore island habitat are being perfected in the field during construction of the Poplar Island Project. Lessons are continually being learned that will be applied to the Mid-Bay Island Project during implementation.

(5) The project is unlikely to affect policy decisions that have a significant impact.

b. **Project Magnitude.** The magnitude of this project is determined to be high, primarily due to project costs. The first costs of the project are estimated at \$1.1 billion. The project would be implemented over approximately 52 years, from initiation of PED to project close-out. The benefits of the project are relatively large. It would result in protection of 267 acres of island habitat, restoration of 2,142 acres of island habitat, and restoration/ maintenance of 1,350 acres of submerged aquatic vegetation at Barren Island and James Island. Project implementation would utilize 90-95 million cubic yards of dredged material from a Corps maintained channel. While the scale is large, the restoration is not complex and involves standard dredged material placement and restoration techniques. The project would have positive cumulative effects as it would be an incremental step towards addressing historic island loss and future dredged material placement needs in the Chesapeake Bay, and contribute to an island network.

c. **Project Risk.** This project is considered low risk overall.

(1) The potential for failure is low because restoration of islands is a straight forward concept with successful applications at the Poplar Island Environmental Restoration which involves restoration of 570 acres of wetland and 570 acres of island. Project failure is unlikely to result in risk to human life or health. The project would be constructed in increments, which further reduces project risk. Initial increments would be monitored and lessons-learned would be applied to later increments.

(2) The potential for controversy regarding project implementation is low. The recommended plan has taken into account the public concerns regarding island construction and placement of dredged material in the bay. A socio-economic analysis was prepared. Public scoping meetings were held in February and March 2003 and public meetings were held during review of the draft report and draft EIS in October 2006. The State, County and Federal agencies are in agreement with the recommended plan and did not submit any negative comments. The local citizens and Dorchester County strongly support the project.

The State of Maryland is strongly opposed to construction of islands where no islands previously existed. Through coordination of the DMMP, the State of Maryland encouraged the interagency team to focus on restoration of existing islands such as Barren and James, which have experienced significant reduction in size in the past century. The State of Maryland supports the project as demonstrated by their continuing commitment to the project through the Maryland Port Administration, the project sponsor. The major risk associated with the project is the risk that the Corps does not have suitable dredged material placement sites such as the proposed project identified and under construction before capacity is reached at existing placement sites.

(3) The uncertainty of predictions and outcomes of the project is low because the methods used for implementation of the project are standard and the concept of constructing islands is not innovative. The methods have been successfully implemented

at Poplar Island in the upper portion of Chesapeake Bay and there is no data or information to indicate that outcomes will be similarly successful at James and Barren Islands. The ecosystem has not reached an irreversible state so it is likely that a restoration effort of the magnitude proposed will be successful

(4) The proposed restoration is not irreversible. If needed, dredged material could be excavated from the constructed islands and placed in another location.

d. Coordination with Vertical Team. The vertical team concurs that the subject matter covered in the decision document is NOT novel, controversial, or precedent-setting, and the project will not have significant interagency interest or significant economic, environmental or social effects. However, in accordance with “Supplemental Information” for the CECW-CP 30 March 2007 memorandum, expensive projects may warrant External Peer Review even if they don’t trigger the other criteria. While the project doesn’t trigger the majority of the criteria outlined in the EC, a limited External Peer Review will be conducted due to the high cost (\$1.1 B).

e. EPR Method. The EPR will focus on the formulation of the restoration plan and will address project scoping, alternative screening, sizing, location and design, and the likelihood of producing significant ecological output for island and near-shore areas including beds of submerged aquatic vegetation. The review panel will be composed of 3 individuals with expertise in estuarine ecology and coastal processes (geomorphology). The entire Integrated Feasibility Report and EIS with appendices, including the public comments, will be provided. The reviewers will have up to 56-80 hours to conduct the review. The reviewers will provide comments individually. There will be no travel or conference calls among reviewers. The reviewers will be compensated through a contract with MVR.

MVR will manage the EPR. Management tasks will include identifying, contacting, and selecting reviewers; preparing scopes of work and procuring contracts with reviewers; compiling review comments, compiling NAB response to comments and compiling comments and responses into an EPR Report. MVR will follow EC-1105-2-408 in managing the EPR.

f. Schedule and Cost/ The EPR will be conducted during the Summer and Fall 2007. The estimated cost is \$48,800. Following is the draft schedule for the EPR:

Prepare EPR plan	29 Jun – 10 Aug 2007
Peer reviewers contacted for availability and screened	8-15 Aug 2007
Peer reviewers selected and availability confirmed	16-21 Aug 2007
Draft charge completed	24 Aug 2007
Peer reviewer contracts in place	7 Sept 2007
Report and final charge sent to reviewers	10 Sept 2007
Comments received from panelists	10 Oct 2007
MVR prepare peer review report	10-16 Oct 2007
NAB responses received and incorporated into peer review report	30 Oct 2007

Peer reviewers offered opportunity to respond to NAB responses	1-2 Nov 2007
MVR finalize peer review report and provide to ECO-PCX for transmittal	14 Nov 2007
NAB append final peer review report to the Integrated Feasibility Report and EIS	20 Nov 2007

## 5. Model Certification

a. The Baltimore District developed an Island Community Index model to measure the quality of aquatic, wetland and terrestrial habitat in the with and without project condition. This was the main planning model utilized in the study. The model evaluates the quality of habitat for communities of species rather than single species. The model evaluates the quality of 4 habitat types – upland, high marsh, low marsh and intertidal. Habitat quality is evaluated for 9 guilds or communities – colonial nesting wading birds (herons, egrets, ibises), waterfowl, colonial nesting waterbirds (gulls, terns, skimmers), raptors, shorebirds, herpetofauna, benthic invertebrates, resident/forage fish, and commercial/predatory/higher trophic level fish. The suitability models were developed using the Delphi technique which utilizes expert-opinion-based Suitability Index models. NAB followed the Delphi process outlined in the document “Guidelines for using the Delphi technique to develop Habitat Suitability Index curves” (USFWS Biological Report 82 (10.134) April 1987). Spreadsheets were used to calculate ICUs.

b. In accordance with the Model Certification EC (EC 1105-2-407), the ECO-PCX recommends that a Level 2 review of the model be initiated immediately. Level 2 review was selected as this is a non-complex, regional model to be used for a costly project. EC 1105-2-407 requires certification of all planning models. The model has not been certified by the ECO-PCX. There were no ITR comments on the ecosystem output model suggesting that the model was not technically reviewed as part of the ITR. In a conference call on 5/24/07, HQ, IWR, MVD, and ERDC decided to conduct a model assessment, not certification. ERDC will assess the technical and system quality of the model and be available to provide a summary of the assessment at the Civil Works Review Board. The review may uncover items that need to be addressed. Certification would entail a more rigorous review.

c. Model assessment will be conducted by ERDC in the Summer-Fall 2007. Following is the draft schedule for model assessment:

NAB submits Model Documentation to ECO-PCX (PMIP Protocol, Table 2)	6/25/07
NAB provides funding to ERDC	
ERDC initiates review	+ 7 days
ERDC submits draft model assessment report to ECO-PCX and NAB	+ 30 days
ECO-PCX and NAB provide ERDC comments on draft model assessment report	+7 days
ERDC submits Final Model Assessment Report to ECO-PCX	+ 14 days
NAB revises Model Documentation if appropriate	unknown

d. The model assessment would utilize 6 experts, one of each with the following areas of expertise: avifauna, benthic macroinvertebrates, fish, submersed aquatic vegetation, herptiles, integration and summary. The assessment is estimated to cost \$25,000.

**6. Public and Agency Review.**

a. Public review of the draft report and DEIS occurred in August – October 2006. Public comments received during review of the draft report and EIS, and at any public meetings held during the planning process are included in the Final Report and will be made available to the review team.

b. Public review of the Final Report EIS will begin after the completion of the ITR process and policy guidance memo, and following a successful Civil Works Review Board. The period will last 30 days as required by law.

c. The public review of necessary State or Federal permits will also take place during this period.

d. Upon completion of the review period, comments will be consolidated in a matrix and addressed, if needed. A comment resolution meeting will take place if needed to decide upon the best resolution of comments. A summary of the comments and resolutions will be included in the document.

**7. PCX coordination.** The appropriate PCX for this document is the National Ecosystem Planning Center of Expertise (ECO-PCX) located at MVD. This review plan will be submitted through the PDT District (NAB) Planning Chief, to the ECO-PCX Director, and PCX Deputies for approval. The PCX assigned a manager from MVR to manage the External Peer Review and Model Assessment. MVR has conducted QA/QC on the ITR that was conducted. The approved review plan will be posted by NAD and a link posted on the ECO-PCX website.