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

REPLY TO
ATTENTION OF

CENAD-PSD-P

DEC 17 2007

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

SUBJECT: Review Plan Approval for Lower Potomac-St. Mary's River Watershed Restoration 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 Lower Potomac-St. Mary's River Watershed 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 currently does not include 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

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

LOWER POTOMAC—ST. MARY'S RIVER WATERSHED RESTORATION FEASIBILITY STUDY

QUALITY CONTROL (QC) AND INDEPENDENT TECHNICAL REVIEW (ITR) PLAN

1.0 PURPOSE

This Review Plan presents the process that assures quality products for the Lower Potomac—St. Mary's River Watershed Restoration Feasibility Study, General Investigation (GI) Feasibility Study. This QC and ITR Plan define the responsibilities and roles of each member on the study and technical review team.

Because the FCSA was signed in 2001, it was expected that the study would be grandfathered under the implementation guidance for EC1105-2-408 dated May 31, 2005. However, revised guidance received in March 2007 has lifted the grandfathering conditions. Therefore, ITR is now required. This QC and ITR plan will document existing ITR processes and identify future actions to make the study compliant with existing policy.

Under the provisions of new U.S. Army Corps of Engineers (USACE) policy, the ITR will be conducted by specialists from organizations outside of the district responsible for the study. Independent Technical Review will be conducted for all decision documents requiring headquarters approval and will be independent of the technical production of the project.

2.0 APPLICABILITY

This document provides the Quality Control Plan for the Feasibility Study. It identifies quality control processes and independent technical review for all work to be conducted under this study authority, including in-house, sponsor and contract work.

3.0 REFERENCES

EC1105-2-408 "Peer Review of Decision Documents" dated May 31, 2005
ER 1105-2-100 "Planning Guidance Notebook & Appendices"

4.0 GENERAL PROJECT DESCRIPTION

The Lower Potomac—St. Mary's River Watershed Restoration Study was designed to develop watershed restoration tools for St. Mary's County, Maryland. St. Mary's County is a rapidly growing county of southern Maryland and is experiencing associated environmental impacts. The first phase focused on environmental planning products, including watershed assessments, baseline stream data, and sensitive species management tools. These documents were stand alone documents, designed to help steer development in a more environmentally sensitive manner.

The second phase of the project addressed specific projects that could be implemented to improve the watershed and developed restoration projects. The District found that it was practical to work in two major areas—the upstream areas of the St. Mary's River Watershed,

where older development was not optimized and in the receiving estuaries, where severe oyster and SAV loss has dramatically reduced the estuarine environment. Several project categories were developed including (1) hydrology restoration, (2) oyster restoration, and (3) SAV restoration. These categories were analyzed to develop an overall restoration plan. The plan includes 28 hydrologic modifications, such as retrofitting existing hydrology management facilities, incorporating marsh cells, and expanding ponds, 1360 acres of SAV seeding, and 462 acres of oyster restoration. The project is expected to cost $43 million over the next 25 years. The 25-year program that this study recommends allows for implementation of the various features within the estuaries sequentially. The hydrologic modifications will be constructed up front. The programmatic approach was selected over conventional project implementation due to the numerous and changing variables associated with SAV seeding and oyster restoration practices. This approach will allow for integration of new technology and approaches as well as flexibility when choosing site selection based on data available at that future point in time. Further, by staggering the timing implementation of projects in each estuary, there will be a tremendous amount of lessons learned as the process goes along.

5.0 REVIEW REQUIREMENTS

Initial Quality Control (QC) review will be handled within the Section or Branch performing the work or by staff in the corresponding Sponsor Department when it involves In-Kind Services. Additional QC will be performed by the PDT during the course of completing the integrated Feasibility Study. The detailed checks of computations and methodology should be performed at the District level, and the processes for this level of review are well established.

Pursuant to EC 1105-2-408, item 2 c (2), Models used in the preparation of decision documents covered by this Circular will be reviewed in accordance with EC 1105-2-407, Planning Models Improvement Program: Model Certification, and are not subject to the requirements of this Circular. The uses and applications of models in individual studies that lead to the preparation of decision documents covered by this Circular will be reviewed in accordance with the requirements of this Circular.

For this study effort, two models were used that may require certification. They are both spreadsheet models. The first was used to assess the watershed and help define restoration measures, such as hydrologic improvements. The other was a three part model used to determine environmental benefits as a result of oyster restoration. The three components to the model are: 1) a forecast of water filtration capacity by the oysters, 2) an estimate of an oyster bar reseeding plan, and 3) an evaluation of site suitability. This information is to be provided to the Planning Center of Expertise (PCX) for a determination on whether model certification is necessary or appropriate.

Pursuant to EC 1105-2-408, due to the complex nature of this project the integrated Feasibility Report will need an ITR team assigned by the PCX for Environmental Restoration (National Ecosystem Planning) Projects. Dr. Dave Vigh (CEMVD-RB-T) will assign this team. It is recommended that the ITR be handled entirely within USACE, as the scope and technical complexity do not warrant an External Peer Review (EPR), based upon the initial Risk Screening Process conducted by the Project Development Team (PDT) noted in Section 9. It is anticipated

that while this study will be challenging and beneficial, it will not be novel, controversial or precedent setting, nor have significant national importance. As a result, the ITR will focus on:

- Review of the planning process and criteria applied.
- Review of the methods of preliminary analysis and design.
- Compliance with authority and NEPA requirements.
- Completeness of preliminary design and support documents.
- Spot checks for interdisciplinary coordination.

6.0 REVIEW PROCESS

It is anticipated that the ITR Team Review Process will begin after the ITR Team has been assigned, and will cover the feasibility study and associated products developed to date. As alternative plans are formulated, the Review Process will focus on data, assumptions and the engineering, scientific, economic, social & environmental analysis process. Major Review Process milestones are listed below:

- Approval of Review Plan by NAD
- ITR team assigned by PcX
- P-8 Milestone – AFB RAM
- AFB
- Draft Report Review
- Final Report Review

7.0 REVIEW COST

The cost of the ITR is estimated to be $10,000. It is assumed that documents to be reviewed will be transmitted electronically. Comments will be made and addressed in Dr. Checks. It is also assumed that the external ITR team will be working virtually. Only under extreme circumstances should the external ITR team, or a representative of that team, be required to physically attend team or milestone meetings. The team should participate in all P milestone meetings; however, via conference call or video tele-conference.

8.0 REVIEW SCHEDULE

Note that since the commencement of this study preceded the requirement for PcX involvement and development of this Review Plan, the review schedule below does not match the major review process milestone list above.

TASK	START DATE	FINISH DATE
Develop ITR Plan & post to Web Site, PCX	15 April 07	1 Oct 07
Identify Regional ITR resources & Recommend ITR Plan to PCX	13 Aug 07	25 Sep 07
PCX Approves or Assigns ITR Team	28 Sep 07	
Review of Draft Feasibility Report	31 Oct 07	
Review Final Feasibility Report	TBD Based on HQ comments and Public review	

9.0 PROJECT RISK

The PDT members were asked to rate their assessment of the risk associated with this project based upon several factors and rate the project quantitatively among the defined levels of project risk of failure ranging from low to high. Based upon this analysis by the PDT, the project is projected to be low to medium in risk. The PDT considered previous District project experience when making this analysis. No attempt was made to tie this to a national scale of rating, so it is likely that the risk level would have been lower if the team were to have compared the risk of this project to a large ecosystem restoration project. The Project Delivery Team (PDT) scored each item in the QCP Score Guide (Table 9.1) to get an average score. The Project schedule and cost were assessed as a low degree of risk if they both remained flexible and a high degree of risk if the Project schedule and cost was fixed. Staff Technical Experience was assessed as a low degree of risk if the staff had a high level of ecosystem restoration experience and a high degree of risk if the staff had a low level of ecosystem restoration experience. The score for the risk items were summed and the average value of the Assessment Score was used to determine the overall level of project risk. The results of the evaluation are tabulated as follows:

Table 9.1 Quality Control/Review Plan Score Guide

Project Risk Item	**Assessment Score (Low Degree to High Degree)**					**Score**
	Low		Medium		High	
Potential for Failure	1	2	3	4	5	4
Uncertainties of Predictions	1	2	3	4	5	4
Long Term Cumulative Effects/Customer Expectations	1	2	3	4	5	3
Staff Technical Experience	1	2	3	4	5	2
Failure Impact and Consequences	1	2	3	4	5	2
Average Project Risk Assessment Score						**3.0**
Project Magnitude Item						
Product Schedule/Cost	1	2	3	4	5	2
Project Complexity	1	2	3	4	5	3
Project Benefits	1	2	3	4	5	4
Project Scale	1	2	3	4	5	2
Average Project Magnitude Assessment Score						**2.8**

10.0 REVIEW PLAN

The components of the Review Plan (external ITR only) were developed pursuant to the requirements of EC1105-2-408.

10.1 Review tasks to date

The late stage of this study includes several ITR activities conducted prior to the lifting of the ITR grandfathering clause. Included in QC activities prior to the ITR requirement include:

1. Coordination and review by the College of St. Mary's Biology Department. Several professors and field technicians were instrumental in the design, review, and development of the study. This included the verification of data, analysis approach, and results.

2. Internal QC. Internal QC was conducted in the period from August 2006 through March 2007, where several rounds of comments were integrated into the draft report. Three separate reviews and backchecks were held during this period.

3. HQ Issue Resolution Conference. An Issue Resolution Conference (IRC) was held on 4 May 2006. This meeting addressed components of the report and issues. RAM was circulated to HQ prior to the meeting. The RAM and Final MFR are attached.

10.1 Team Information

The decision documents that will be the ultimate focus of the peer review process are the integrated Feasibility Report, the Division Commander's Public Notice, and the Environmental Record of Decision (ROD) for the Lower-Potomac—St Mary's River Watershed Restoration Study. The purpose of the decision document will be to begin the approval process leading to the authorization to begin Plans & Specifications.

The PDT is listed as follows. This list provides the points of contact of NAB team members that are available to answer specific technical questions as part of the Peer Review Process. The list also provides the names and organization of participating outside entities.

District PDT Members:

CENAB-PL
Project Manager

CENAB-EN
Civil Engineer

CENAB-PL
Environmental Specialist

Non-District PDT Members:

Sue Vieth
Environmental Planner
St. Mary's County Maryland

Chris Tanner
St. Mary's College
SAV restoration

Bob Paul PhD.,
St. Mary's College
GIS analysis

Independent Technical Review Team:

ITR will be performed by members of the Seattle District.

CENWS-PM-PL-PF
Plan Formulation and
Review Lead

CENWS-EC-TB-WM
Hydrology

CENWS-EC-DB-CS
Coastal Engineer

CENWS-PM-PL
Economics

CENWS-PM-PL-ER
NEPA and Environmental

Cost Estimating Review will be conducted by the Walla Walla District.

10.2 Scientific Information

Based upon the self-evaluation by the PDT, it is unlikely that the USACE report to be disseminated will contain influential scientific information. The environmental restoration measures that were identified were evaluated using standard hydrologic, hydraulic, geotechnical and economic processes. Several pioneering projects in terms of scale and adaptive management practices involving SAV seeding and oyster restoration have already been initiated. Examples include the Smith Island, Maryland Environmental Restoration and Protection Project, executed by the Baltimore District, and the Native Oyster Program, executed by the Norfolk and Baltimore Districts. It is unlikely that this effort will create new and untested methods or scientific information; however, it will benefit from ongoing research by others and from practical lessons learned during the course of the restoration program.

Economic and planning processes will additionally consider the Collaborative Planning EC. This EC describes all the economic accounts that can be used to describe economic benefits. The four main economic accounts are national economic development (NED), national ecosystem restoration (NER), regional economic development (RED), and the other social effects (OSE).

While the restoration of these watersheds and estuaries is a key component of the Chesapeake Bay Program goals, the efforts envisioned to date will not result in a highly influential scientific assessment.

10.3 Timing
The ITR process is envisioned to begin spring 2007 with an assessment of key models to be used in the evaluation and comparison of alternative plans in this feasibility study. It is anticipated that work would start within days of naming the external ITR team. The estimated schedule is noted in Part 8 of this QCP.

10.4 External Peer Review Process
No External Peer Review process is envisioned at this time. This assessment is supported by the evaluation of the PDT in March 2007 and tabulated as shown in Section 9 of this QCP.

10.5 Public Comment
Public involvement is anticipated throughout the Feasibility Study. The Public Involvement meeting dates have not been scheduled at this time.

It is anticipated that minutes of Public Involvement Meetings will be disseminated to the Peer Review Team following the meetings. This will allow the public response to be available to the ITR team.

10.6 ITR Reviewers
The reviewer disciplines and contact information should are stated in Section 10.1 of this QCP.

The expertise brought to the review team includes the following:

1) Planning – The reviewer should have recent experience in reviewing Plan Formulation processes for multi-objective studies and be able to draw on "lessons learned" in advising the PDT of best practices.
2) Economics – The reviewer should have a solid understanding of Economic Models including cost effective incremental cost analysis (e.g. IWR Plan Suite) and Hedonic Pricing and their application to ecological
3) Ecology – The reviewer should have a solid background in the restoration of NEP, tidal wetlands, oyster and SAV habitats, and understand the factors that influence the reestablishment of native species of plants and animals.
4) Engineering - The majority of this study does not use heavily engineered structures. Therefore, the reviewer should be familiar with hydrology, coastal processes and well as low tech design techniques and ecological methods.

10.7 External Peer Review Selection
Because an External Peer Review is not anticipated for this study, there is no EPR selection.

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REPLY TO ATTENTION OF:

CEMVD-PD-N

04 September 2007

MEMORANDUM FOR Commander, North Atlantic Division
ATTN: (Joe Vietri, CENAD-PSD-P)

SUBJECT: Lower Potomac, St. Mary's Watershed Restoration Feasibility Report, Ecosystem Planning Center of Expertise Recommendation for Approval of Peer Review Plan

1. The Ecosystem Planning Center of Expertise (ECO-PCX) reviewed the Peer Review Plan for the St. Mary's Watershed Restoration Feasibility Report. The ECO-PCX finds that the subject Peer Review Plan complies with EC 1105-2-408, EC 1105-2-407, and CECW-CP memorandum dated 30 March 2007.

2. The plan recommends ITR only because 1) no influential scientific information will be produced by the study and 2) the risk was assessed as low. The NAD vertical team concurs with this decision.

3. The Baltimore District (NAB) should send a final copy of the Peer Review Plan (with team member names included) to the ECO-PCX (Deb Freeman and Camie Knollenberg). NAB should make available on the web a copy of the PRP with individuals names removed. A link to this site should be provided to the ECO-PCX (Freeman).

4. Conclusion. The ECO-PCX recommends the PRP for approval by NAD.

Rayford Wilbanks
Director, National Ecosystem Planning Center of Expertise

CF:
CEMVD-RB-T (Vigh)
CEMVR-PM-F (Staebell)
CENAD-PSD-P (Blum, Doukas)
CENAB (Face, Guise, Bierly)
CECW-NAD