



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

DEC 14 2012

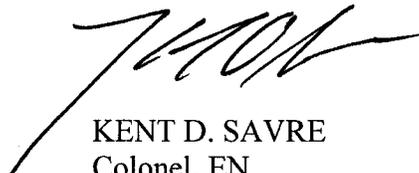
CENAD-PD-PP

MEMORANDUM FOR Commander, Baltimore District, ATTN: CENAB-PP-C

SUBJECT: Review Plan Approval for Chesapeake Bay Comprehensive Water Resources and Restoration Plan, DC, DE, MD, NY, PA, VA & WV

1. The attached Review Plan for the subject study has been prepared in accordance with EC 1165-2-209, Civil Works Review Policy.
2. The Review Plan has been coordinated with the Ecosystem Planning Center of Expertise of the Mississippi Valley Division, which is the lead office to execute this plan. For further information, contact Ms. Jodi Creswell at 309-794-5448. The Review Plan currently does not include independent external peer review due to a pending approval decision by Headquarters, U.S. Army Corps of Engineers.
3. I hereby approve this Review Plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require new written approval from this office.

Encl



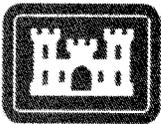
KENT D. SAVRE  
Colonel, EN  
Commanding

# **REVIEW PLAN**

**Chesapeake Bay Comprehensive Water Resources and Restoration Plan,  
DC, DE, MD, NY, PA, VA & WV**

**Baltimore District, U.S. Army Corps of Engineers**

**MSC Approval Date: Pending  
Last Revision Date: None**



**US Army Corps  
of Engineers**  
Baltimore District

**REVIEW PLAN**

**Chesapeake Bay Comprehensive Water Resources and Restoration Plan,  
DC, DE, MD, NY, PA, & VA**

**Watershed Assessment**

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## 1. PURPOSE AND REQUIREMENTS

**Purpose.** This Review Plan defines the scope and level of peer review for the Chesapeake Bay Comprehensive Water Resources and Restoration Plan, DC, DE, MD, NY, PA, VA & WV (Comp Plan).

### a. References

- (1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, Change 1, 31 Jan 2012
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (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) Planning SMART Guide (<http://planning.usace.army.mil/toolbox/smart.cfm>)
- (6) U.S. Army Corps of Engineers, Baltimore District (USACE) Quality Management Plan

- b. 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).

## 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 National Ecosystem PCX (ECO-PCX).

The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review team. The Comp Plan will not have detailed cost estimates or construction schedules. It is likely the Comp Plan would have planning level costs; therefore, it is anticipated that the Cost DX will not be required to review the Comp Plan.

## 3. STUDY INFORMATION

- a. Watershed Assessment.** The Chesapeake Bay's ecosystem is an intricate system of terrestrial and aquatic habitats. It is composed of the thousands of miles of river and stream habitat that interconnect the land, water, living resources and human communities of the Chesapeake Bay watershed. Long-term protection of this unique ecosystem is essential. A comprehensive plan, or integrated watershed management plan for the purpose of cross-cutting problem identification, identifying alternatives and recommending technical solutions and implementation strategies is needed. The Comp Plan will include existing Federal (including DoD), State and local plans and will address the most recent Chesapeake Bay Agreement commitments and Executive Order 13508,

which mandates the integration of living resource protection and restoration, vital habitat protection and restoration, water quality protection and restoration, sound land use, and stewardship and community engagement.

- b. **Study/Project Description.** The study area is the Chesapeake Bay watershed encompassed in DC, DE, MD, NY, PA, VA & WV. The following figure presents the location of the study area.



The Comp Plan is authorized by a Resolution of the Committee on Environment and Public Works of the United States Senate, adopted September 26, 2002 and Section 729 of the Water Resources Development Act of 1986, as amended.

- c. **Factors Affecting the Scope and Level of Review.** Upon execution of a feasibility cost sharing agreement with a non-Federal sponsor, the Comp Plan will include the predefined milestone meetings with the PDT, ECO-PCX, and vertical team following the USACE Planning SMART Guide (<http://planning.usace.army.mil/toolbox/index.cfm>). With the ecosystem restoration and protection watershed assessment purpose there is no life safety concern.
- d. **In-Kind Contributions.** Upon execution of a feasibility cost sharing agreement with a non-Federal sponsor, products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR.

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

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC prior to ATR. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the 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 MSC.

- a. **Documentation of DQC.** DQC will be documented via a memorandum signed by USACE, Baltimore District division or branch chiefs for various organizational branches/sections involved in preparation of the decision document or supporting analyses. This document will certify that DQC has been accomplished and will serve as the Quality Control Review Report. This memorandum will be provided to the ECO-PCX as proof that DQC occurred.
- b. **Products to Undergo DQC.** The Comp Plan report documentation and technical products produced during the feasibility study, including any products included as in-kind services.
- c. **Required DQC Expertise.** DQC will be conducted by USACE, Baltimore District staff and supervisors.

#### 5. 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 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 the designated 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. The ATR team lead will be from outside the home MSC.

- a. **Products to Undergo ATR.** It is envisioned that the primary products to undergo ATR include the Draft Comp Plan report documentation and technical appendices. ATR team members may also

review information prior to meetings with Baltimore District staff and the vertical team primarily for the team members' preparation to participate during the meeting. During the feasibility study scoping process and subsequent update to this review plan, this section will be updated to identify any other products necessary to undergo ATR. Presumably, SMART Planning review guidance would be completed, and any pertinent documentation necessary for ATR would be identified in this section accordingly.

- b. **Required ATR Team Expertise.** The number of ATR reviewers participating in the various reviews will depend on the corresponding segment of the assessment. The disciplines identified to serve as the ATR team include an ATR lead, plan formulation, economics, environmental resources, hydrology, hydraulic engineering, and civil engineering.

<b>ATR Team Members/Disciplines</b>	<b>Expertise Required</b>
ATR Lead	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. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc).
Plan Formulation	The Plan Formulation reviewer should be a senior water resources planner with experience in ecosystem restoration. The Planner should have experience associated with stream restoration and non-tidal wetland restoration actions with preference toward ecosystem restoration in urban watersheds. In addition, the planner should have experience with water resource planning and watershed assessment.
Environmental Resources	The environmental resources reviewer should be a senior water resources planner or biologist with experience in ecosystem restoration. The reviewer should have knowledge of aquatic and wetland ecology, with extensive experience developing or reviewing HSI, HEP, and IBI methodologies and scoring. In addition, the environmental resources reviewer should have experience with watershed assessments.
Hydrology	The hydrologic engineering reviewer will be an expert in the field of hydrology. Experience with ESRI ArcGIS software (version 10.0 or later) is required. Experience forecasting future without-project conditions hydrology using changes in land use and other available information is required.
Civil Engineering	The civil engineering reviewer will be an expert in the field of civil engineering, and be experienced with stream restoration design using Rosgen-type restorative measures for streambank stabilization and floodplain reconnection. The reviewer should also have experience designing non-tidal wetlands as part of floodplain reconnection practices.
Cost Engineering	The cost estimating reviewer will be an expert when preparing cost estimates as part of civil engineering designs. It is envisioned

ATR Team Members/Disciplines	Expertise Required
	planning-level cost estimates would be prepared instead of detailed feasibility level design cost estimates. The Cost Engineering Directory of Expertise (DX) will complete the Cost Engineering review.

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. A sample Statement of Technical Review is included in Attachment 2.

**6. 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 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 underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review (SAR)) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.
  - **Type II IEPR.** Type II IEPR, or 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.
- a. **Decision on IEPR.** It is anticipated that Type I IEPR will not be required to be completed on the Comp Plan and based on the risk informed decision as prescribed in EC 1165-2-209, Section 11.d(1). A request to waive the IEPR requirement will be submitted to HQUSACE for review and approval. Additionally, with the study purpose identified as a comprehensive watershed planning document, there is not a significant threat to human life that would require a Type II IEPR. Table 1 summarizes these trigger and a discussion on each point is below:

<b>Table 1. Mandatory Triggers</b>	<b>Yes</b>	<b>No</b>
Significant threat to human life		<b>X</b>
Exceeds \$45 million		<b>X</b>
Governors Request		<b>X</b>

Controversial by DCW		X
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- (1) Significant threat to human life. The Comp Plan likely would not impact a structure or feature of a structure whose performance involves potential life safety risks.
- (2) The Comp Plan likely would not have investments of public monies required beyond the study cost.
- (3) No governor likely would not request IEPR.
- (4) It is likely there would not be controversy surrounding Federal actions associated with this work product. The Comp Plan likely would on the best available scientific information, opinion, and consensus.

Guidance also indicates other triggers that may influence the need for IEPR. These are listed in Table 2 and are discussed below.

Table 2. Additional Triggers	Yes	No
Environmental Impact Statement		X
Impacts tribal/cultural/historic		X
Impacts on Fish & Wildlife		X
Endangered Species Act impacts		X

The Comp Plan will not lead to project implementation and does not require NEPA documentation. Study products may inform future feasibility or implementation documents. If subsequent studies are undertaken NEPA documentation would be required during those study processes.

The Comp Plan likely would not trigger any of the requirements contained in Table 1 or 2.

Prior to execution of the feasibility cost sharing agreement, a memo requesting an exclusion from IEPR would be prepared and submitted to the MSC in the future along with this review plan, or a subsequent update to this review plan.

- a. **Products to Undergo Type I IEPR.** N/A
- b. **Required Type I IEPR Panel Expertise.** N/A
- c. **Documentation of Type I IEPR.** N/A

## 7. 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 home MSC Commander. 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.

## 8. COST ENGINEERING DX REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The RMO is responsible for coordination with the Cost Engineering DX. Detailed cost estimates will not be prepared as part of the Comp Plan. Planning-level cost information may be used to help determine future courses of action. The District, in coordination with the RMO, will seek DX guidance as to the appropriate level of review. Certification will not be required.

## 9. MODEL CERTIFICATION AND 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 (if required).

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. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. 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 (if required).

- a. **Planning Models.** Currently, planning models to be utilized during the feasibility study have not been determined. During the feasibility study scoping process and subsequent update to this review plan, this section will be updated to identify any proposed planning models to be used during the feasibility study.
- b. **Engineering Models.** Currently, engineering models to be utilized during the feasibility study have not been determined. During the feasibility study scoping process and subsequent update to this review plan, this section will be updated to identify any proposed engineering models to be used during the feasibility study.

## 10. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** The USACE planning modernization initiative incorporates the assumption that feasibility studies will be completed within three years. In order to comply with the current guidance presented ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007, activity milestones, particularly the review requirements associated with EC 1165-2-209, Civil Works Review Policy, 31

Jan 2012, must be completed within predefined and accepted durations. Currently there is no funding or schedule for completion of the Comp Plan.

b. **Type I IEPR Schedule and Cost.** N/A.

c. **Model Certification/Approval Schedule and Cost.** N/A

## **11. PUBLIC PARTICIPATION**

The Chesapeake Bay watershed includes numerous public organizations that advocate for its restoration. Existing avenues for public coordination would be used during the feasibility study, and managed appropriately for effective information sharing.

During the feasibility study scoping process and subsequent update to this review plan, this section will be updated to identify proposed public participation opportunities to be pursued during the feasibility study.

## **12. 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. Baltimore District is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. 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, will be posted on North Atlantic Division's approved Review Plan webpage. The latest Review Plan should also be provided to the RMO and home MSC.

## **13. REVIEW PLAN POINTS OF CONTACT**

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

- Dan Bierly, Acting Chief, Civil Projects Development Branch, Planning Division, Baltimore District, (410) 962-6139.
- Roselle Henn, MSC Environmental Team Leader, North Atlantic Division, (347) 370-4562.
- Sue Ferguson, North Atlantic Division Account Manager for ECO-PCX, (615) 736-7192.

**ATTACHMENT 1: TEAM ROSTERS**

To be determined.

**ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS**

**COMPLETION OF AGENCY TECHNICAL REVIEW**

The Agency Technical Review (ATR) has been completed for the *<type of product>* for *<project name and location>*. The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-209. During the ATR, 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 results, including whether the product meets the customer’s needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrChecks<sup>sm</sup>.

SIGNATURE

Name

ATR Team Leader

Office Symbol/Company

Date

SIGNATURE

Name

Project Manager

Office Symbol

Date

SIGNATURE

Name

Architect Engineer Project Manager<sup>1</sup>

Company, location

Date

SIGNATURE

Name

Review Management Office Representative

Office Symbol

Date

**CERTIFICATION OF AGENCY TECHNICAL REVIEW**

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

As noted above, all concerns resulting from the ATR of the project have been fully resolved.

SIGNATURE

Name

Chief, Engineering Division

Office Symbol

Date

SIGNATURE

Name

Chief, Planning Division

Office Symbol

Date

<sup>1</sup> Only needed if some portion of the ATR was contracted

**ATTACHMENT 3: REVIEW PLAN REVISIONS**

<b>Revision Date</b>	<b>Description of Change</b>	<b>Page / Paragraph Number</b>

**ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS**

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	IWR	Institute of Water Resources
CE/ICA	Cost Effectiveness/Incremental Cost Analysis	NPDES	National Pollutant Discharge Elimination System
CWRB	Civil Works Review Board	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DQC	District Quality Control/Quality Assurance	P&G	The Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies
DX	Directory of Expertise	PCX	Planning Center of Expertise
EC	Engineer Circular	PMP	Project Management Plan
ECO-PCX	National Ecosystem Planning Center of Expertise	QMP	Quality Management Plan
ER	Engineering Regulation	RAM	Read Ahead Material
FSM	Feasibility Scoping Meeting	RMC	Risk Management Center
GIS	Geographic Information System	SET	Scientific and Engineering Technology
HQUSACE	Headquarters, U.S. Army Corps of Engineers	USACE	U.S. Army Corps of Engineers
IEPR	Independent External Peer Review	WRDA 2007	Water Resources Development Act of 2007