



**DEPARTMENT OF THE ARMY**  
U.S. ARMY ENGINEER DIVISION, GREAT LAKES AND OHIO RIVER  
CORPS OF ENGINEERS  
550 MAIN STREET  
CINCINNATI, OH 45202-3222

CELRD-PD-GL

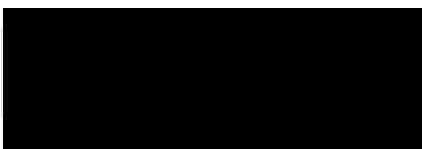
14 April 2016

MEMORANDUM for Huntington District Commander, (CELRH-PM-PD-R/ [REDACTED]),  
502 Eight Street, Huntington, WV 25701-2070

SUBJECT: Review Plan Approval, Section 14, Streambank Protection Project, City of  
Charleston, WV

1. Reference CELRH-PM-PD-R Memorandum dated 14 January 2016, Section 14, Kanawha River, Greenbrier Street to Elk River, Streambank Protection Project, City of Charleston, Kanawha County, West Virginia - Review Plan, copy enclosed.
2. The subject Review Plan has been prepared in accordance with EC 1165-2-214, Civil Works Review and dated 15 December 2012. The Review Plan was reviewed for policy compliance and MSC comments and the district's resolution are posted in DrChecks. All comments have been satisfactorily resolved and are closed.
3. I approve the enclosed Review Plan. Subsequent revisions to this Review Plan or its execution will require new written approval from this office and is subject to change as circumstances require, consistent with the Project Management Business Process.
4. The District is requested to post the Review Plan to its website. Prior to posting, the names of all individuals identified in the Review Plan should be removed.
5. The point of contact for the MSC's approval is [REDACTED] he can be reached at 513-684-3159.

Encl



Brigadier General, USA  
Commanding



DEPARTMENT OF THE ARMY  
HUNTINGTON DISTRICT, CORPS OF ENGINEERS  
502 EIGHTH STREET  
HUNTINGTON, WEST VIRGINIA 25701-2070

CELRH-PM-PD-R

14 January 2016

MEMORANDUM FOR Commander, US Army Corps of Engineers, Great Lakes and Ohio River Division, (ATTN: [REDACTED] CELRD-PD-PDM), 550 Main Street, Room 10-524 Cincinnati, Ohio 45202

SUBJECT: Section 14, Kanawha River, Greenbrier Street to Elk River, Streambank Protection Project, City of Charleston, Kanawha County, West Virginia - Review Plan

1. Submitted for review and approval is a Review Plan outlining the peer review requirements for the decision document being prepared to address streambank erosion in the City of Charleston located in Kanawha County, West Virginia. The proposed project is being accomplished under Section 14 of the Flood Control Act of 1946, as amended. The subject Review Plan had been completed in accordance with Engineer Circular (EC) 1165-2-214, "Civil Works Review", dated 15 December 2012.
2. Agency Technical Review (ATR) for this project is managed within US Army Corps of Engineers and is conducted by the team identified in the Review Plan. Team members may be from within the home MSC with exception of the ATR Lead.
3. Following approval, the Review Plan, will be made available for public comment on the Huntington District public website. The primary point of contact for the Review Plan is [REDACTED]. Should you have any questions regarding this submittal, please contact her directly at 304-399-5947.

Encl



Colonel, Corps of Engineers  
Commanding

# **DECISION DOCUMENT AND IMPLEMENTATION PHASE REVIEW PLAN**

**Kanawha River, Greenbrier Street to Elk River  
Charleston, West Virginia  
Section 14 Emergency Streambank Protection Project**

**Huntington District**

**MSC Approval Date:**

**Last Revision Date:** None



**US Army Corps  
of Engineers®**

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## 1. PURPOSE AND REQUIREMENTS

- a. **Purpose.** This Review Plan defines the scope and level of peer review for the Kanawha River, Greenbrier Street to Elk River, City of Charleston, West Virginia, Section 14 project decision document and design and implementation activities.

Section 14 of the Flood Control Act of 1946, as amended, authorizes the US Army Corps of Engineers (USACE) to study, design and construct emergency streambank and shoreline works to protect public services including (but not limited to) streets, bridges, schools, water and sewer lines, National Register sites, and churches from damage or loss by natural erosion. It is a Continuing Authorities Program (CAP) which focuses on water resource related projects of relatively smaller scope, cost and complexity. Traditional USACE civil works projects are of wider scope and complexity and are specifically authorized by Congress. The Continuing Authorities Program is a delegated authority to plan, design, and construct certain types of water resource and environmental restoration projects without specific Congressional authorization.

Additional Information on this program can be found in Engineering Regulation 1105-2-100, Planning Guidance Notebook, Appendix F.

- b. **Applicability.** This review plan is based on the model Programmatic Review Plan for Section 14, 107, 111, 204, 206, 208 and 1135 project decision documents, which is applicable to projects that do not require Independent External Peer Review (IEPR), as defined in EC 1165-2-214 Civil Works Review Policy. A Section 14, 107, 111, 204, 206, 208 and 1135 project does not require IEPR if ALL of the following specific criteria are met:

- The project does not involve a significant threat to human life/safety assurance;
- The total project cost is less than \$200 million;
- There is no request by the Governor of an affected state for a peer review by independent experts;
- The project does not require an Environmental Impact Statement (EIS),
- The project/study is not likely to involve significant public dispute as to the size, nature, or effects of the project;
- The project/study is not likely to involve significant public dispute as to the economic or environmental cost or benefit of the project;
- The information in the decision document or anticipated project design is not likely to be based on novel methods, involve the use of innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices;
- The project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule; and
- There are no other circumstances where the Chief of Engineers or Director of Civil Works determines Type I IEPR is warranted.

If any of the above criteria are not met, the model Programmatic Review Plan is not applicable and a study specific review plan must be prepared by the home district, coordinated with the appropriate Planning Center of Expertise (PCX) and approved by the home Major Subordinate Command (MSC) in accordance with EC 1165-2-214.

Applicability of the model Programmatic Review Plan for a specific project is determined by the home MSC. If the MSC determines that the model plan is applicable for a specific study, the MSC Commander may approve the plan (including exclusion from IEPR) without additional coordination with a PCX or Headquarters, USACE. The initial decision as to the applicability of the model plan should be made no later than the Federal Interest Determination (FID) milestone (as defined in Appendix F of ER 1105-2-100, F-10.e.1) during the feasibility phase of the project. A review plan for the project will subsequently be developed and approved prior to execution of the Feasibility Cost Sharing Agreement (FCSA) for the study. In addition, per EC 1165-2-214, the home district and MSC should assess at the Alternatives Formulation Briefing (AFB) whether the initial decision on Type I IEPR is still valid based on new information. If the decision on Type I IEPR has changed, the District and MSC should begin coordination with the appropriate PCX immediately.

This programmatic review plan may be used to cover implementation products. Following the format of the model programmatic review plan, the project review plan may be modified to incorporate information for the review of the design and implementation phases of the project. This review plan has been developed to include the appropriate peer review for both the decision document and the follow-on design and implementation activities.

### c. References

- (1) Engineering Circular (EC) 1165-2-214, Civil Works Review, 15 Dec 2012
- (2) Director of Civil Works' Policy Memorandum #1, Jan 19, 2011
- (3) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2010
- (4) Engineering Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
- (5) ER 1105-2-100, Planning Guidance Notebook, Appendix F, Continuing Authorities Program, Amendment #2, 31 Jan 2007
- (6) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007

- d. Requirements.** This programmatic review plan was developed in accordance with EC 1165-2-214, 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 1165-2-214) and ensuring that planning models and analysis are compliant with Corps policy, theoretically sound, computationally accurate, transparent, described to address any limitations of the model or its use, and documented in study reports (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 Section 14 projects is the home MSC. The MSC maintains authority and oversight but delegates the coordination and management of decision document ATR to the District. The home District will post the MSC approved review plan on its public website. A copy of the approved review plan (and any

updates) will be provided to the appropriate Planning Center of Expertise to keep the PCX apprised of requirements and review schedules.

### 3. PROJECT INFORMATION

- a. **Decision Document.** The Kanawha River, Greenbrier Street to Elk River, City of Charleston, West Virginia decision document will be prepared in accordance with ER 1105-2-100, Appendix F. The approval level of the decision document (if policy compliant) is the home MSC. An Environmental Assessment (EA) will be prepared along with the decision document.

**Study/Project Description.** The City of Charleston is located at the confluence of the Elk and Kanawha Rivers in Kanawha County, West Virginia (38.346125, -81.634892). The City of Charleston serves as the state capital and is the largest city within the state with a population of 50,000. The proposed Section 14 project would address streambank erosion along the right descending bank of the Kanawha River between river miles 57.9 and 59.8. The proposed project would essentially extend from Greenbrier Street to the Elk River excluding the Haddad Riverfront Park area (38.346125, -81.634892).

US Route (US) 60, also known as Kanawha Boulevard, is the principal secondary highway through the City of Charleston and a significant component of an integrated arterial system. US 60 is also underlain by critical public utilities including water, sewer, gas, and storm water lines. The area affected by streambank erosion spans approximately 9,900 linear feet (LF) and extends from Greenbrier Street to the Elk River excluding Haddad Riverfront Park. This segment of US 60 and the underlying public utilities are in danger of failing and require immediate protection and stabilization. Since 2014, Huntington District has monitored flood flow erosion and recessional failure site conditions resulting in the loss of hydraulic fill material and displacement of derrick stone along the lower portion of the bank. During recent flood events, Kanawha River stages have resulted in streambank erosion and saturation. Upon flood recession, the river falls out more quickly than these bank materials can drain. Seepage exits the bank at openings between derrick stones, which concentrates flows and erodes the hydraulic fill. Loss of fill material has resulted in upper slope subsidence, which is encroaching on US 60 travel ways, drop inlets, and underlying utilities. Without treatment, fill material will continue to undergo flood related erosion and failure and will eventually result in US 60 and utilities being breached. Failure to protect US 60 would result in loss of access to numerous manufacturing facilities, warehouses, and the State Capitol complex. In addition, failure would impact the designated emergency detour route for Interstate 64 traffic and related access to Interstates 77 and 79 and US 119

As a result, the primary purpose of this study is to develop a viable treatment solution for the protection of US 60 and related underlying utilities serving the City of Charleston. During the feasibility phase, a minimum of four alternatives will be evaluated beyond the *No Action Alternative*: Alternative Plan A (Lower Slope Mineral Filter overlaid by Stone Slope Protection together with Upper Slope Reinforcement and Drainage Interception Trenches), Alternative Plan B (Sheet Pile Wall Slope Stabilization), Alternative Plan C (Vegetative Stabilization), and Alternative Plan D (Road Relocation).

- b. **Design and Implementation Activities.** The design and implementation phase begins after the decision document is approved and extends through the transfer of a completed project and fiscal closeout. The primary engineering products prepared during the design and implementation phase



are the design analysis, plans, technical specifications and other elements needed for award and administration of a construction contract to build the recommended plan.

**Factors Affecting the Scope and Level of Review.** The study being conducted will recommend the effective, environmentally acceptable, least cost solution for stabilizing the right descending bank of the Kanawha River at the affected reach adjacent to US Route 60 (Kanawha Boulevard). Challenges associated with this study would include determining the optimal method for construction of the recommended plan. Land and river-based construction will be implemented with a floating plant barge and equipment along the mid-slope walkway. Partial closure of Kanawha Boulevard may be needed to permit construction contractor or material supplier access. The risk associated with this challenge is low. Due to the extent of the project area and its location adjacent to the Kanawha River, coordination with multiple agencies will be necessary for the completion of all required local, state, and Federal regulations including but not limited to: U.S. Fish and Wildlife (USFWS), West Virginia State Historic Preservation Office (WV SHPO), West Virginia Department of Environmental Protection (WVDEP). In the West Virginia Mussel Survey Protocol, the Kanawha River is listed as Group 4 stream and would require a mussel survey in the project area. The mussel survey will require additional coordination with USFWS and the project may incur additional costs due to the survey. Coordination with WV SHPO under Section 106 of the National Historic Preservation Act will require additional time and cost to the project schedule. The project would most likely require a Memorandum of Agreement with USACE, WV SHPO, and the City as US 60 and its contributing elements are eligible for the National Register of Historic Places due to the projects association with Public Works Administration. An Environmental Assessment will be prepared for this project.

The bank stabilization project will focus on addressing bank erosion in order to maintain the structural integrity US 60. This project is not anticipated to have significant economic, environmental, or social effects to the nation. No significant interagency interest in this project is anticipated. The project is not expected to be highly controversial since failure to protect this highway would result in safety concerns and possible permanent road closure. The study is considered routine without any significant factors requiring any special treatment. The Governor of West Virginia has not requested any peer review by independent experts. No novel construction methods are required by any alternatives and therefore should not present any challenges to a competent construction firm. The simple nature of the alternatives (i.e. Stone Slope Protection and Sheet Piling) should not require any redundancy, resiliency, and/or robustness, unique construction sequencing, or complicated construction schedule.

- c. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC and ATR, similar to any products developed by USACE. No in-kind products or analyses are anticipated to be provided by the non-Federal sponsor, based on previous discussions. If the non-Federal sponsor elects to provide in-kind services during the design and implementation phase, an Integral Determination Report (IDR) would be prepared to verify the proposed contributions are integral to the project. If an IDR is necessary, this review plan will be revised accordingly to reflect the corresponding peer review requirements.

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

All decision and design and implementation documents (including supporting data, analyses, environmental compliance documents, plans, technical specifications, 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. DQC procedures shall be performed in accordance with applicable USACE regulations and the regional Quality Management System (QMS), including local work procedures. DQC shall include, but not be limited to, internal and supervisory design checks; PDT reviews; and biddability, constructability, operability, environmental, and sustainability (BCOES) reviews.

Detailed quality control (QC) and quality assurance (QA) procedures shall be published as a project or product Quality Control Plan (QCP). Preferably the QCP shall be published for the project or each product as a document separate to this review plan. Alternatively, the QCP may be published as an appendix or attachment to this review plan.

For implementation documents, the Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) review is considered an integral part of DQC. Reviews by experienced senior professionals will assure solicitation documents are readily understood; the product can be bid, built, operated and maintained efficiently; environmental concerns are protected, and sustainability is addressed. BCOES certification will verify that each technical component of the design documentation and construction plans and specifications has been checked for accuracy. Interdisciplinary team members will conduct the BCOES reviews using DrChecks. All DrChecks comments must be resolved and closed out by the reviewer. Comments not entered in DrChecks, but discussed during the BCOES meeting will be recorded and inserted in the BCOES Technical Memorandum. BCOES Reviewers will be selected during the implementation phase of this project.

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

ATR is mandatory for all decision and design and implementation 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.** ATR will be performed throughout the study in accordance with the regional Quality Management System. The ATR of the decision document shall be documented and discussed at the MSC Decision Milestone (MDM) milestone. Certification of the ATR will be provided prior to the District Commander signing the final report. Products to undergo ATR include the draft Detailed Project Report (DPR) and corresponding appendices including the cost estimate. During the design and implementation phase, ATR will be accomplished for all design analyses and procurement documents including plans and technical specifications.
- b. Required ATR Team Expertise.** The ATR team for this project consists of personnel from outside of the Huntington District. The disciplines represented on the ATR team will reflect the significant

disciplines involved in the respective feasibility or design and implementation effort. During the feasibility phase, the ATR team will be comprised of personnel with experience in the following disciplines: Civil Engineering Design, Water Resources Engineering, Geotechnical Engineering, and Cost Engineering, Plan Formulation, Environmental Compliance, and Real Estate. Some of these disciplines were combined into one reviewer due to the simplistic nature of the project alternatives and small footprint. No economics reviewer is required as the project construction alternative used will be the least costly alternative. No operations disciplines are necessary due to the stationary nature of the alternatives. Alternative costs are critical for Section 14 project evaluations; therefore the cost reviewer will be recommended from the Cost Engineering Mandatory Center of Expertise and Agency Technical Review (MCX) located in Walla Walla District. During the design and implementation phase, the ATR team will be more specified based on the products produced and will likely be comprised of personnel with experience in the following disciplines: Civil Engineering Design and Geotechnical Engineering.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional preferably with experience in preparing Section 14 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). The ATR Lead MUST be from outside of the Great Lakes and Rivers Division.
Plan Formulation	The Planning reviewer should be a senior water resources planner with experience in Section 14 CAP studies.
Environmental Resources	The environmental reviewer will be a senior environmental professional with NEPA experience.
Water Resources Engineering	The Water Resources Engineering reviewer should be a senior engineer, familiar with small stream flows and HEC-RAS. Must be CERCAP certified.
Geotechnical Engineering	The geotechnical engineering reviewer should have experience in design of bank stabilization features of civil works projects. Must be CERCAP certified. Must be CERCAP certified.
Civil Engineering Design	The civil engineering reviewer should have experience in the design of bank stabilization features of civil works projects. Must be CERCAP certified.
Cost Engineering	Cost MCX Staff or Cost MCX Pre-Certified Professional as assigned by the Walla Walla Cost Engineering Mandatory Center of Expertise with experience preparing cost estimates for Section 14 cost estimates. Must be CERCAP certified.
Real Estate	The real estate reviewer shall have experience developing a Real Estate Plan with Section 14 or similar studies.

- 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 been 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 EC 1165-2-214 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 prior to the District Commander signing the 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 1165-2-214, 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) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-214.

For this Section 14 study, a Type I IEPR is not required as the mandatory criteria listed in paragraph 1.b were not triggered.

- **Type II IEPR.** Type II IEPR, or Safety Assurance Review (SAR), is managed outside the USACE and is 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.

. The District Chief of Engineering has assessed the project and concluded that a Type II IEPR is not required in the design and implementation phase as the project does not pose a potential hazard or a significant threat to human life.

- a. Decision on IEPR.** Based on the information and analysis provided in the preceding paragraphs of this review plan, the project covered under this plan is excluded from IEPR because it does not meet the mandatory IEPR triggers and does not warrant IEPR based on a risk-informed analysis. If any of the criteria outlined in paragraph 1(b) are not met, this model Programmatic Review Plan is not applicable and a study specific review plan must be prepared by the home district, coordinated with the appropriate PCX and approved by the home MSC in accordance with EC 1165-2-214.
- b. Products to Undergo Type I and/or Type II IEPR.** Not applicable.
- c. Required Type I and/or Type II IEPR Panel Expertise.** Not Applicable.
- d. Documentation of Type I and/or Type II IEPR.** Not Applicable.

## **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 AGENCY TECHNICAL REVIEW AND MANDATORY CENTER OF EXPERTISE (MCX) REVIEW AND CERTIFICATION**

All decision documents shall be coordinated with the Cost Engineering MCX, located in the Walla Walla District. For decision documents prepared under the model Programmatic Review Plan, Regional cost personnel that are pre-certified by the MCX and assigned by the Cost Engineering MCX, will conduct the cost engineering ATR. The MCX will provide the Cost Engineering MCX certification. The Cost Engineering MCX will make the selection of the cost engineering ATR team member.

## **9. MODEL CERTIFICATION AND APPROVAL**

The approval of planning models under EC 1105-2-412 is not required for CAP projects. MSC Commanders are responsible for assuring 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. Therefore, the use of a certified/approved planning model is highly recommended should be used whenever appropriate. Planning models 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 selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC and ATR.

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 and ATR.

- a. Planning Models.** The following planning models are anticipated to be used in the development of the decision document: In regards to model certification, no planning models will be used in the plan formulation, economic, or environmental evaluation of alternatives for this study. HEC-RAS hydraulic modeling may be performed by Water Resources Engineering.

- b. Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document: HEC-RAS hydraulic modeling analysis may be performed by District Water Resources Engineering.

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-RAS 4.0 (River Analysis System)	The Hydrologic Engineering Center’s River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. The program will be used for steady flow analysis to evaluate the future without- and with-project conditions along the Kanawha River.	HH&C CoP Preferred Model

**10. REVIEW SCHEDULES AND COSTS**

- a. ATR Schedule and Cost.** The ATR of the decision document is tentatively scheduled to begin June 2016 and will take approximately four weeks to complete. A breakdown of the schedule is: 1) Initial ATR Review – 10 business days, 2) PDT evaluation of the ATR comments – 5 business days, and 3) ATR backcheck of the PDTs evaluation comments – 5 business days. The Cost to complete the ATR is estimated at \$10,000-\$12,000. The ATR of the design and implementation documents will be scheduled following the approval of the decision document and will be completed prior to the award of the construction contract. The ATR of the design and implementation documents will take approximately three to four weeks and will cost approximately \$3,000-\$5,000.
- b. Type I and Type II IEPR Schedule and Cost.** Not applicable.
- c. Model Review Schedule and Cost.** For decision documents prepared under the model Programmatic Review Plan, use of existing certified or approved planning models is encouraged. Where uncertified or unapproved models are used, review of the model for use will be accomplished through the ATR process. The ATR team should apply the principles of EC 1105-2-412 during the ATR to ensure the model is theoretically and computationally sound, consistent with USACE policies, and adequately documented. If specific uncertified models are identified for repetitive use within a specific district or region, the appropriate PCX, MSC(s), and home District(s) will identify a unified approach to seek certification of these models.

**11. PUBLIC PARTICIPATION**

State and Federal resource agencies may be invited to participate in the study covered by this review plan as partner agencies or as technical members of the PDT, as appropriate. Agencies with regulatory review responsibilities will be contacted for coordination as required by applicable laws and procedures. The ATR team will be provided copies of public and agency comments. The Huntington District will make the Draft Section 14 Kanawha River, Greenbrier Street to Elk River, City of Charleston, West Virginia Detailed Project Report and EA available to the public for a period of 30 days. A notice of availability will be published in local newspapers informing the public of the documents availability and on a public website.

## **12. REVIEW PLAN APPROVAL AND UPDATES**

The home MSC Commander is responsible for approving this review plan and ensuring that use of the Model Programmatic Review Plan is appropriate for the specific project covered by the plan. 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. 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. Significant changes may result in the MSC Commander determining that use of the Model Programmatic Review Plan is no longer appropriate. In these cases, a project specific review plan will be prepared and approved in accordance with EC 1165-2-214 and Director of Civil Works' Policy Memorandum #1. The latest version of the review plan, along with the Commanders' approval memorandum, will be posted on the home district's webpage.

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

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

[REDACTED]

[REDACTED]



**ATTACHMENT 1: TEAM ROSTERS**

Project Delivery Team

Team Member	Discipline	Email
[REDACTED]	Project Manager	[REDACTED]
[REDACTED]	Lead Planner/Environmental	[REDACTED]
[REDACTED]	Lead Engineer/Civil Engineer	[REDACTED]
[REDACTED]	Economist/Plan Form	[REDACTED]
[REDACTED]	Office of Council	[REDACTED]
[REDACTED]	Real Estate	[REDACTED]
[REDACTED]	HTRW	[REDACTED]
[REDACTED]	Cost Engineer	[REDACTED]
[REDACTED]	Geotechnical Engineer	[REDACTED]
[REDACTED]	Geotechnical Engineer	[REDACTED]
[REDACTED]	H&H Engineer	[REDACTED]

ATR Team Roster

Team Member	ORG	Discipline	Email
[REDACTED]	[REDACTED]	ATR Lead/Plan Formulator	[REDACTED]
[REDACTED]	[REDACTED]	Environmental	[REDACTED]
[REDACTED]	[REDACTED]	H&H	[REDACTED]
[REDACTED]	[REDACTED]	Civil and Geotechnical Engineering	[REDACTED]
[REDACTED]	[REDACTED]	Cost Engineer	[REDACTED]
[REDACTED]	[REDACTED]	Real Estate	[REDACTED]

BCOE Team Roster

Team Member	Discipline
TBD	Engineering
TBD	Environmental
TBD	Construction
TBD	Project Management
TBD	Operations
TBD	Safety

**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 1165-2-214. 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 \_\_\_\_\_ Date \_\_\_\_\_  
Name  
ATR Team Leader  
Office Symbol/Company

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Project Manager (home district)  
Office Symbol

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Architect Engineer Project Manager<sup>1</sup>  
Company, location

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Review Management Office Representative (or Delegate)  
Office Symbol

**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 \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Chief, Engineering Division (home district)  
Office Symbol

SIGNATURE \_\_\_\_\_ Date \_\_\_\_\_  
Name  
Chief, Planning Division (home district)  
Office Symbol

<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**

<b>Term</b>	<b>Definition</b>	<b>Term</b>	<b>Definition</b>
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
CAP	Continuing Authorities Program	O&M	Operation and maintenance
CSDR	Coastal Storm Damage Reduction	OMB	Office and Management and Budget
DPR	Detailed Project Report	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DQC	District Quality Control/Quality Assurance	OEO	Outside Eligible Organization
DX	Directory of Expertise	OSE	Other Social Effects
EA	Environmental Assessment	PCX	Planning Center of Expertise
EC	Engineer Circular	PDT	Project Delivery Team
EIS	Environmental Impact Statement	PAC	Post Authorization Change
EO	Executive Order	PMP	Project Management Plan
ER	Ecosystem Restoration	PL	Public Law
FDR	Flood Damage Reduction	QMP	Quality Management Plan
FEMA	Federal Emergency Management Agency	QA	Quality Assurance
FRM	Flood Risk Management	QC	Quality Control
FSM	Feasibility Scoping Meeting	RED	Regional Economic Development
GRR	General Reevaluation Report	RMC	Risk Management Center
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer 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