

DECISION DOCUMENT REVIEW PLAN

**Grand River/Bank Street,
City of Painesville, Lake County, Ohio
Continuing Authorities Program Section 14
Emergency Stream Bank Protection Project
P2# 461094**

Buffalo District

LRD Commander Approval Date: 4 June 2018



**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 decision document and design and implementation activities for the Section 14 of the Continuing Authorities Program (CAP), stream bank protection project on Bank Street along the Grand River in the City of Painesville located in Lake County, Ohio.

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 stream bank 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 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 (ER) 1105-2-100, Planning Guidance Notebook, Appendix F.

Applicability. This review plan is based on the Great Lakes and Ohio River Division (LRD) CAP Programmatic Review Plan Model for Section 14, 107, 111, 204, 206, 208 and 1135 project decision documents, which require case-by-case determination on the appropriateness of Type I Independent External Peer Review (IEPR). The LRD CAP Programmatic Review Plan Model is not approved for use on any CAP, Great Lakes Fishery and Ecosystem Restoration (GLFER) or Lake Michigan Waterfront projects where:

- A significant threat to human life/safety assurance exists;
- Total Project Cost is likely to exceed the limits established for the applicable Section in law.
- The Governor of an affected state has requested a peer review by independent experts;
- An Environmental Impact Statement (EIS) is required;
- Significant public dispute is likely due to the size, nature, or effects of the project;
- Significant public dispute is likely due to the economic or environmental cost or benefit of the project;
- Complex challenges will likely require use of novel methods, innovative materials, new techniques, precedent-setting methods or models, or result in conclusions that are likely to change prevailing practices;
- Redundancy, resiliency, and/or robustness are required or unique construction sequencing, or a reduced or overlapping design construction schedule will likely be required; or
- The Chief of Engineers or Director of Civil Works is likely to determine 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 Engineering Circular (EC) 1165-2-214.

Applicability of the model Programmatic Review Plan for a specific project is determined by the Buffalo District (LRB) and subsequently reviewed and approved by the LRD Commander. If the LRD 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 (HQUSACE). 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 1165-2-217, the home district and LRD should assess at the MSC Decision Milestone (MDM) 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.

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. The revised and approved review plan shall specify the Design and Implementation phase products to be reviewed and the associated level of peer review of each, including the appropriateness of a Type II IEPR (Safety Assurance Review).

b. References

- (1) Engineering Circular (EC) 1165-2-217, Civil Works Review, 20 Feb 2018
- (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

- c. Requirements.** This review plan was developed from the LRD CAP Programmatic Review Plan Model. It was developed in accordance with EC 1165-2-217, and 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), 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 1165-2-217) 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)

The Review Management Organization (RMO) is responsible for managing the overall peer review effort described in this review plan. The RMO for CAP Section 14 decision documents is typically LRD, because the LRD Commander is responsible for approving the Review Plan and the decision to implement projects under this authority. However, an appropriate National Planning Center of Expertise (PCX) may also serve as the RMO. Because of the potential for CAP Section 103 and Section 205 projects to have significant life safety implications, determination of the RMO for the decision document for those type projects is made on a case-by-case basis at the FID approval stage. The RMO for this Review Plan is LRD. Also, during the FID review and approval process, the home District may request LRD to delegate its RMO responsibility to the most appropriate PCX for any CAP project.

3. PROJECT INFORMATION

- a. **Decision Document.** The decision document for the Section 14 stream bank protection project on Bank Street along the Grand River 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. The preferred decision document format is contained in the Detailed Project Report (DPR) template in the LRD CAP Program Management Plan/Standard Operating Procedures, which integrates the environmental documentation required under the National Environmental Policy Act (NEPA) and other relevant environmental statutes into the project decision document. The purpose of a DPR is to document the basis for a recommendation to invest Federal and non-Federal resources to address a local water resource problem or opportunity of significance to the Nation. The approval level of the decision document is the LRD Commander.

Study/Project Description. The City of Painesville is located in Lake County in northeastern Ohio, approximately 30 miles east of Cleveland. Much of the city is situated along the west side of the Grand River that flows into Lake Erie. Within the city, Bank Street is a two-lane residential street and runs in a northwest to southeast direction from South State Street to East Walnut Avenue and parallel to a portion of the Grand River on the east side of the city limits. The proposed Section 14 project would address stream bank erosion along a portion of Bank Street on the Grand River.

For several decades, the City of Painesville has monitored flood flow erosion and recessional failure at this location resulting in the displacement of an existing retaining wall(s) and failure of reinforced slope protection that was designed to protect the stream bank along Bank Street. Seventeen homes front on Bank Street including 14 on the opposite side of the street from the river. An approximate 650 foot stretch of the Grand River near the intersection of Bank Street and South State Street has a very narrow and steep slope. This section is approximately 95-100 feet below the centerline of Bank Street. Approximately 325 feet of the stream bank is significantly eroded within the project area. All of the homes on Bank Street have driveway access on the street. Seven (7) of the homes are located directly adjacent to a reach of stream bank in imminent danger of collapse due to flood flow erosion and related recessional failures. The top-of-slope ranges from approximately 12-25 feet from the edge of curb.

In 2016, the City of Painesville released an inspection report (2015 Retaining Wall Inspection Report, Burgess & Niple, March 2016) of the existing retaining wall(s) system running from approximately mid-block on Bank Street stretching south onto South State Street. Electric utility lines on Bank Street run parallel and adjacent to the top-of slope along the river-side of the street. Gas, water, sanitary sewer, and storm drain lines are located between the road center line and residences on Bank Street. The stream bank material consists of a layer of clay/soil over shale.

As is the case with many Section 14 projects, the local municipality has attempted a temporary repair to address this problem that has not been successful. In 2012, the City of Painesville constructed a reinforced slope repair consisting of wire mesh facing and reinforcing bars (soil nails). Since that time, significant erosion and undermining of this repair has occurred. According to the report, without treatment, the stream bank material will continue to undergo flood-related erosion and failure, resulting in potential road collapse and breaching of utilities. Failure to protect this road would result in potential loss of public access to the residential area and endanger adjacent public utilities. Consequently, the primary purpose of this study is to develop a long-term viable alternative for the protection of Bank Street and adjacent public utilities.

In order to address flood flow-related erosion and further failure and endangerment of the retaining wall(s) and public utilities along the project area on Bank Street, two alternative measures will initially be considered, including Alternative A (Steel Sheet Pile Wall) to Alternative B (Soldier Pile and Precast Panel Wall) in addition to the No Action Alternative.

- b. Factors Affecting the Scope and Level of Review.** The study being conducted will recommend the most effective, environmentally acceptable, least cost solution for stabilizing the bank of the Grand River at the affected critical area adjacent to Bank Street. Further stream bank erosion at the site could disrupt public utility services for the residential area and require relocation of multiple public utilities including gas, water, and electric lines. Protecting the stream bank adjacent to Bank Street would ensure a safe environment for the road and the public infrastructure with continued operation of a residential street. Utilities associated with the neighborhood would also remain in a safe condition. Without Bank Street, several homeowners would have no access to their property. If the project moves forward and work is conducted, the stream bank within the project area would be protected long term with a top-of-slope Steel Sheet Pile Wall or other effective structure as well as bottom slope protections of a curb and 20-foot high Shotcrete wall.

Contingent on funding, challenges associated with this study would include determining the best method for construction of the recommended plan. It is anticipated that land-based construction will be implemented due to available access from Bank Street to this reach of the riverbank, which will allow for equipment access and the construction of proposed treatments. The Grand River does not have sufficient water depth to permit floating plant barge access. Partial closure of Bank Street may be needed to permit construction contractor access. The City of Painesville will be required to implement public safety responsibilities pursuant to local municipal code and State law. Due to the steep slope, proposed construction methods may involve heavy crane operation from Bank Street down the slope, where excavation is likely to be required in order to form suitable erosion protection.

Based on available information, any significant threat to traffic safety and/or utilities arising from further slope failure will require implementation of emergency protective measures on the part of the City to protect public safety. Due to the extent of the project area, excavation, and its location adjacent to the Grand River, coordination with multiple agencies may be necessary for the completion of all required local, state, and Federal regulations including but not limited to: U.S. Fish and Wildlife (USFWS), Ohio State Historic Preservation Office (SHPO), and the Ohio Department of Natural Resources (ODNR). An Environmental Assessment will be prepared for this project.

The bank stabilization project will focus on reducing or eliminating bank erosion along this bank of the Grand River in order to maintain the structural integrity of Bank Street and the public utilities. This project is not anticipated to have significant economic, environmental, or social effects to the natural environment or the nation. The project is not expected to be highly controversial since failure to protect

this road would result in safety concerns and possible permanent road closure. The feasibility study is considered routine without any significant factors requiring any special treatment. The Governor of Ohio has not requested any peer review by independent experts. No novel construction methods are anticipated and therefore should not present any challenges to a competent construction firm. The simple nature of the alternatives (i.e. Steel Sheet Pile Wall to a Soldier Pile and Precast Panel Wall) 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 sponsor (City of Painesville) 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 USACE Buffalo District shall manage DQC. Documentation of DQC activities is required and should be in accordance with the District and LRD Quality Management System (QMS) procedures. Attachment 1 lists the DQC team members according to each significant area of expertise needed to accomplish the feasibility study objectives.

- a. **Products to Undergo DQC.** 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 from this review plan. Alternatively, the QCP may be published as an appendix or attachment to this review plan.
- b. **Required DQC Expertise.** For implementation documents, the Biddability, Constructability, Operability, Environmental and Sustainability (BCOES) review is considered an integral part of DQC. Reviews to assure solicitation documents are readily understood; the product can be bid, built, operated and maintained efficiently; environmental concerns are protected, and sustainability is addressed. Expertise will include economics, environmental, engineering design and hydraulics and hydrology. BCOES is limited to the Planning Engineering and Design Phase.
- c. **Documentation of DQC.** 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. The BCOES Reviewers will be selected during the implementation phase of this project.

5. AGENCY TECHNICAL REVIEW (ATR)

The 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. The 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. The 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 LRD. At a minimum, the name of the ATR lead will be provided at the time of initial decision document review plan submission. Remaining ATR team members will be selected and identified in a revised review plan (Attachment 1) once the study funds are obtained.

- a. **Products to Undergo ATR.** The ATR will be performed throughout the study in accordance with the regional QMS. The ATR of the decision document shall be documented and discussed at the MSC MDM. 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 Buffalo 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 MCX located in the 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:

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.
Geotechnical Engineering	The geotechnical engineering reviewer should have experience in design of bank stabilization features of civil works projects. Must be Certification and Access Program (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 Certification and Access Program (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 Certification and Access Program (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 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 LRB, 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 1165-2-217 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.

The 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)

While CAP projects are generally smaller and less technically complicated than specifically authorized feasibility studies, IEPR may be required for CAP decision documents under certain circumstances. The EPR 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 1165-2-217, is made as to whether IEPR is appropriate. Where designated, IEPR panels will consist of independent, recognized technical experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for planning, design and construction of a Civil Works project. 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 1165-2-217.

- 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.
- a. **Decision on IEPR.** EC 1165-2-217 exempts CAP Section 14 projects from Type I IEPR, and based on the consideration of project specific factors presented in Section III.C relative to the criteria in Paragraph I.B above, the level of risk of the CAP Section 14 project does not warrant a Type I IEPR of the project decision documents.
 - 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. The 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

The Buffalo District, in conjunction with the RMO, is responsible for coordinating with the Cost Engineering MCX located in the Walla Walla District for review of the cost estimate for all CAP decision documents. For decision documents prepared under the LRD CAP Programmatic Review Plan Model, 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. Either the designated ATR Lead or the Cost Engineering MCX shall 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 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 and 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 USACE 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.** 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 Buffalo District 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 Grand River.	HH&C CoP Preferred Model

10. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** Contingent on funding, the ATR of the decision document is tentatively scheduled to begin on 02 AUG 2019 and will take approximately eight weeks to complete. A breakdown of the schedule is: 1) Initial ATR Review – 20 business days, 2) PDT evaluation of the ATR comments – 10 business days, and 3) ATR backcheck of the PDTs evaluation comments – 10 business days. The Cost to complete the ATR for the ATR team is estimated at \$30,000. 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 scheduled cost for ATR of the design and implementation documents cannot be determined at this time.
- 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 Buffalo District will make the Draft Section 14 Grand River/Bank Street, Detailed Project Report and Environmental Assessment 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 LRD Commander is responsible for approving this review plan and ensuring that use of the LRD CAP Programmatic Review Plan Model is appropriate for the specific project covered by the plan. The review plan is a living document and may change as the study progresses. LRB is responsible for keeping the review plan up to date. Minor changes to the review plan since the last LRD 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 LRD Commander following the process used for initially approving the plan. Significant changes may result in the MSC Commander determining that use of the LRD CAP Programmatic Review Plan Model is no longer appropriate. In these cases, a project specific review plan will be prepared and approved in accordance with EC 1165-2-217 and Director of Civil Works' Policy Memorandum #1. The Commander Approved Review Plan, along with the Commanders' approval memorandum, will be posted on the Buffalo 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:

USACE LRB POC:



ATTACHMENT 1: TEAM ROSTERS

Project Delivery Team				
Technical Discipline	Team Member	District	Credentials	Relevant Experience (Years)
Project Manager	[REDACTED]	[REDACTED]	[REDACTED]	> 20 Years
Plan Formulator	[REDACTED]	[REDACTED]	[REDACTED]	> 10 Years
Environmental Analysis	[REDACTED]	[REDACTED]	[REDACTED]	> 5 Years
Lead Engineer/Civil Engineer	[REDACTED]	[REDACTED]	[REDACTED]	> 20 Years
Office of Counsel	[REDACTED]	[REDACTED]	[REDACTED]	> 5 Years
Real Estate	[REDACTED]	[REDACTED]	[REDACTED]	> 5 Years
Geotechnical Engineer	[REDACTED]	[REDACTED]	[REDACTED]	> 10 Years
HTRW	[REDACTED]	[REDACTED]	[REDACTED]	> 10 Years
Cost Engineer	[REDACTED]	[REDACTED]	[REDACTED]	> 5 Years
Economist	[REDACTED]	[REDACTED]	[REDACTED]	> 5 Years
H&H Engineer	[REDACTED]	[REDACTED]	[REDACTED]	> 5 Years
Agency Technical Review Team				
Technical Discipline	Team Member	District	Credentials	Relevant Experience (Years)
Cost Engineer		MCX		> 5 Years
ATR Lead – Plan Formulator				>10 Years
Geotechnical Engineer				> 5 Years
Civil/Engineering Design				> 5 Years
Cost Engineer				> 5 Years
Real Estate				> 5 Years
Independent External Peer Review Team – Not Required				
Technical Discipline	Team Member	District	Credentials	Relevant Experience (Years)
Not Applicable				

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 Section 14 Project for Grand River/Bank Street, Painesville, Ohio. The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-217. 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.

SIGNATURE

ATR TEAM LEADER

DATE

SIGNATURE

PROJECT MANAGER (LRB)

DATE

SIGNATURE

ENGINEER

DATE

SIGNATURE

REVIEW MANAGEMENT OFFICE

DATE

COMPLETION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

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

SIGNATURE

CHIEF, ENGINEERING DIVISION (LRB)

DATE

SIGNATURE

CHIEF, PLANNING DIVISION (LRB)

DATE

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
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
MDM	MSC Decision Milestone	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act