



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DIVISION, GREAT LAKES AND OHIO RIVER
CORPS OF ENGINEERS
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CINCINNATI, OH 45202

CELRD-PD

JUL 31 2015

MEMORANDUM FOR Commander, US Army Corps of Engineers, Louisville District, (CELRD-P/Nate Moulder), PO Box 59, Louisville, KY 40201-0059

SUBJECT: Approval Memorandum for Youngs Creek, Franklin, Indiana, Section 205, Decision Document Review Plan

1. References:

a. Memorandum, CELRL-PMP-F, Subject: Youngs Creek, Franklin, Indiana, Section 205, Decision Document Review Plan, 12 JUN 2015. .

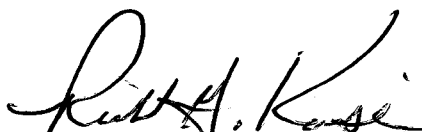
b. EC 1165-2-214, Civil Works Review, 15 DEC 2012.

2. The USACE LRD Review Management Organization (RMO) has completed their policy and quality assurance review of this Review Plan (RP). I concur with the recommendations of the RMO and approve the enclosed RP.

3. The District is requested to post the RP to its website. Prior to posting, the names of all individuals identified in the RP should be removed.

4. POC for this action within LRD is Mr Phil Tilly, 513-684-3025, philip.r.tilly@usace.army.mil.

Encl


RICHARD G. KAISER
Brigadier General, USA
Commanding

DECISION DOCUMENT REVIEW PLAN
USING THE DRAFT LRD PROGRAMMATIC REVIEW PLAN MODEL
for
Continuing Authorities Program
Section 14, 107, 111, 204, 205 206, 208 and 1135 Projects

Youngs Creek – Franklin, IN
Section 205 Project

Louisville District

LRD Approval Date: 7-31-2015

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 Youngs Creek, Section 205 project decision document. Attachment 1 lists the DQC team members according to area of technical expertise.

Section 205 of the Flood Control Act of 1948, as amended, authorizes USACE to study, design and construct flood risk management projects. 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 CAP 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 DRAFT LRD Programmatic Review Plan Model for Section 14, 107, 111, 204, 205, 206, 208 and 1135 project decision documents, which accounts for Section 103 and Section 205 CAP projects that may require Type I IEPR. The LRD CAP Programmatic Review Plan Model is not approved for use on any Section 14, 107, 111, 204, 206, 208 or 1135 project that:

- Involves a significant threat to human life/safety assurance;
- Total project cost exceeds \$45 million;
- The Governor of an affected state has requested a peer review by independent experts;
- Requires an Environmental Impact Statement (EIS),
- Is likely to involve significant public dispute as to the size, nature, or effects of the project;
- Is likely to involve significant public dispute as to the economic or environmental cost or benefit of the project;
- Is 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;
- Is anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule; and
- Meets circumstances where the Chief of Engineers or Director of Civil Works determines Type I IEPR is warranted.

If any of the above criteria are 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.

Requesting Exclusion to Type I IEPR requirements

EC 1165-2-214 requires a case-by-case risk informed decision on whether to conduct a Type I IEPR for CAP Section 205 projects. Section 6.a. of this Review Plan provides a detailed assessment of the

risks associated with a USACE decision on a recommended plan for the Young's Creek, IN Flood Risk Management Study, and the District's recommendation on Type I IEPR.

Initial applicability of the model Programmatic Review Plan for a specific project is determined by the Louisville District, and subsequently approved by LRD. If LRD determines that the model plan is applicable for a specific study, the LRD 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 LRD should assess at the MSC Decision Meeting (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 LRD should begin coordination with the appropriate PCX.

After approval of the project decision document and prior to execution of a Project Partnership Agreement with the non-federal sponsor to implement the Young's Creek, IN, Section 205 project, this review plan shall be updated and revised by the Louisville District, and subsequently approved by the LRD Commander. 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).

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 from the LRD CAP Programmatic Review Plan Model. It 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 Major Support Command (MSC) 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 205 decision documents is typically the home MSC. However, in cases where Type I IEPR is scheduled, the appropriate Planning Center of Expertise (PCX) shall be designated as the RMO. RMO designation and an initial determination of whether Type I IEPR will be scheduled for Section 103, 205 or any other CAP decision documents will be made on a case-by-case basis at the FID approval stage. 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.

When Type I IEPR will be performed, the home District and LRD will coordinate the Type I IEPR effort with the appropriate PCX, which will administer the Type I IEPR. The home District will post the approved review plan and approval memorandum on its public website. A copy of the approved review plan (and any updates) will be provided to the FRM-PCX to keep the PCX apprised of requirements and review schedules for each LRD CAP decision document subject to Type I IEPR.

3. STUDY INFORMATION

- a. **Decision Document.** The Youngs Creek – Franklin, IN 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 LRD Commanding General (CG). An Environmental Assessment (EA) will be prepared along with the decision document.
- b. **Study/Project Description.** There is significant flood risk and associated damages in the study area caused by highwater events on Young’s Creek and Hurricane Creek. It is documented (Whitaker Engineering assessment in May 2014) that the South, Home, and Main Street bridges and the Province Park western pedestrian bridge have caused excessive backwater resulting in flooding of local businesses. Given these conditions, flood damages predicted for the 50-year planning horizon in the City of Franklin, Indiana study area are likely to be substantial.

Several tributaries that can cause flooding problems within this community include both Young’s Creek and Hurricane Creek. Young’s Creek enters Sugar Creek in the southern portion of Johnson County with a total drainage area of 109 square miles.

Alternative plans will consider off-channel detention basins, channel modifications, levees and non-structural measures. At this time, additional study is required to determine what the optimal combination of measures will be to formulate the recommended plan.

- c. **Factors Affecting the Scope and Level of Review.**

Challenges: Franklin, Indiana is a suburb of the Indianapolis metropolitan region. Agricultural land in this area has quickly transformed from agriculture to impervious surface as the City of Franklin and communities upstream have sprawled. Long-term flood damage reduction measures will have to carefully consider these growth patterns.

Project Risks:

Life Safety: A recommended array of measures has not been identified for this Section 205 study. To-date, detention basins or non-structural measures appear to be the likely recommended plan for this location. From a life safety perspective, there is minimum risk associated with these measures. However, as the feasibility study develops levees may be given additional consideration. In the event that levees are considered. The Review Plan’s approach to life safety considerations will be evaluated and revised as necessary, in coordination with the MSC.

Governor Request for Peer Review: The Governor has not requested peer review by independent experts.

Public Dispute: The project/study is not anticipated to be controversial nor result in significant public dispute as to the size, nature, or effects of the project or to the economic or environmental costs or benefits of the project.

Project Design/Construction: The anticipated project design will take advantage of prevailing practices and methodologies. It is not expected to be based on novel methods or involve the use of innovative techniques, or present complex challenges for interpretation. It is also not anticipated that the project will require unique construction sequencing or redundancy.

- d. **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. The in-kind services anticipated as part of the cost share are limited to participation in Project Delivery Team (PDT) meetings.

4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, environmental compliance documents, 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. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC as documented in Qualtrax.

Documentation of DQC: DQC will be documented by signature sheets with senior-level checkers, Subject Matter Experts, and Supervisors, and will be provided to the ATR team at review. Copies of the DQC documentation will be retained in the project files and will be provided to any reviewer upon request. DQC will be accomplished in accordance with EC 1165-2-214, Paragraph 8d, which specifies for each ATR event, the ATR team will examine relevant DQC records and provide written comment in the ATR report as to the apparent adequacy of the DQC effort.

Products to Undergo DQC: DQC will be performed on interim reports and milestone documentation (i.e. Alternative Formulation Briefing, Draft Feasibility Report, Final Feasibility Report) prior to ATR.

Required DQC Expertise: Senior-level non-PDT members and/or supervisory staff will conduct DQC. The technical disciplines represented on the DQC team will mirror that of the project delivery team. DQC will

be managed by the project manager or lead planner.

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. ATR will be performed throughout the study in accordance with the regional Quality Management System. The ATR shall be documented and discussed at the Alternative Formulation Briefing (AFB) milestone. Certification of the ATR will be provided prior to the District Commander signing the final report. Supporting analysis and documents, including but not limited to the following will also be subject to Agency Technical Review:

- (1) Detailed Project Report and appendices
- (2) Cost estimates
- (3) Supporting environmental analysis (cultural resources, resource inventories, etc.)

b. Required ATR Team Expertise. The expertise/disciplines represented on the ATR team should generally reflect the significant disciplines involved in the planning effort. The PDT has determined that the expertise needed for review shall include: Civil Engineering, Real Estate, Hydraulic Engineering, Environmental Planning and Analysis, Geotechnical Engineering and Cost Engineering. The Engineer discipline ATR members will possess CERCAP certification. The roster of the ATR and the expertise required is outline in the table that follows.

ATR Team Members/Disciplines	Expertise Required
ATR Lead /Planning	The ATR lead should be a senior professional preferably with experience in preparing Section 205 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 MUST be from outside LRD. The Planning reviewer should be a senior water resources planner with experience in policy and formulation of structural and non-structural Section 205 projects.
Civil Engineering	The civil engineering reviewer should be proficient in the design and layout of detention basins, levees and floodwalls. Previous experience with Section 205 projects is essential.
Real Estate	The Real Estate reviewer should be familiar Section 205 flood risk management projects.
Hydraulic Engineering	The hydraulic engineering reviewer will be an expert in the field of hydraulics and hydrology and have a thorough understanding of open channel dynamics and/or computer modeling techniques

	that will be used such as HEC-RAS.
Geotechnical Engineering	The geotechnical engineering reviewer will be an expert in the field of soils and stability and have a thorough understanding of policy related to construction and excavation in varying soil types.
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 205 projects

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.

Nearly all CAP project decision documents are excluded from Type I Independent External Peer Review (IEPR) except those under Section 103 and Section 205. The exceptions are any project that requires an EIS or any project that meets the mandatory triggers stated in Appendix D of EC 1165-2-214. Due to the nature of flood risks, Section 103 and Section 205 decision documents require a case-by-case risk informed decision to conduct a Type I IEPR, which may be prepared using the LRD CAP Programmatic Review Plan Model or prepared as a project specific Review Plan that meets the requirements of EC 1165-2-214. Section 6.a. below specifies the project specific circumstances and rationale for Type I IEPR of the Young's Creek, Section 205 decision document.

- **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.

For Section 14, 107, 111, 204, 206, 208 and 1135 decision documents prepared under the model Programmatic Review Plan, Type II IEPR is not anticipated to be required in the design and implementation phase, but this will need to be verified and documented in the review plan prepared for the design and implementation phase of the project.

- 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 not anticipated to require Type I 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.

The current assessment by the Louisville District regarding conducting a Type I IEPR, relative to the circumstances and objectives of the Young's Creek feasibility study, is based on the following rationale:

- Federal action is not justified by life safety or failure of the project would not pose a significant threat to human life;
- Life safety consequences and risk of non-performance of a project are not greater than under existing conditions;
- There is no request by the Governor for a peer review by independent experts;
- The project is very unlikely to require an 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; and
- The project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule.

Because this is a Flood Risk Management project where IEPR is not required, the following measures will be included in the feasibility study documentation:

- Risks of non-performance and residual flooding must be fully disclosed in the decision document and in a public forum prior to final approval of the decision document;
- The non-Federal sponsor must develop a Floodplain Management Plan, including a risk management plan and flood response plan (and evacuation plan if appropriate for the conditions), during the feasibility phase; and
- The non-Federal sponsor must explicitly acknowledge the risks and responsibilities in writing in a letter or other document (such as the Floodplain Management Plan) submitted to the Corps of Engineers along with the final decision document.

There is the potential that during the feasibility study alternatives may be formulated that include levees. At the Alternatives Formulation Briefing, the District will coordinate with the MSC to determine if Type I IEPR is required.

A determination of whether to conduct Type II IEPR for the construction phase will be considered in an update to this review plan, which will occur after approval of the decision document and prior to execution of a Project Partnership Agreement with the non-federal sponsor.

- b. *Products to Undergo Type I IEPR.*** TBD
- c. *Required Type I IEPR Panel Expertise.*** TBD
- d. *Documentation of Type I IEPR.*** TBD

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 LRD 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 MANDATORY CENTER OF EXPERTISE (MCX) REVIEW AND CERTIFICATION

The home District 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 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. 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 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 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 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:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification / Approval Status
HEC-FDA 1.2.4 (Flood Damage Analysis)	The Hydrologic Engineering Center’s Flood Damage Reduction Analysis (HEC-FDA) program provides the capability for integrated hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using risk-based analysis methods. The program will be used to evaluate and compare the future without- and with-project plans along Youngs Creek to aid in the selection of a recommended plan to manage flood risk.	Certified

- b. **Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
HEC-RAS 4.1.0(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 Youngs Creek and its tributaries.	HH&C CoP Preferred Model
HED-SSP (Version 2.0)	The software package can be used to perform frequency, duration, coincident frequency, and curve combination analyses on flow data and other hydrologic data.	HH&C CoP Preferred Model
HEC-HMS 3.4	The Hydrologic Engineering Center’s Hydrologic Modeling System (HEC-HMS) program provides the capability to perform rainfall-runoff and transform computations, simple channel routing computations, and reservoir storage computations.	HH&C COP Preferred Model
MCACES	Microcomputer-Aided Cost Estimation System; Used to generate detailed cost estimates for each alternatives.	

10. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** Estimated ATR cost is \$30,000. Anticipate commencing ATR in Q2 of FY16. The cost and schedule include ATR Team Leader participation during the AFB conference to address the ATR process and any significant and/or unresolved ATR concerns.

b. Type I IEPR Schedule and Cost. TBD.

c. Model Review Schedule and Cost. For decision documents prepared under the LRD CAP Programmatic Review Plan Model, 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 EA will be posted for 30 day public comment period. This Review Plan will be posted on the District's internet site and comments from the public will be accepted.


There will be multiple opportunities for public review and comment during the NEPA process. Several agency coordination meetings are also anticipated. Detailed information on the study will be posted on the public webpage. This information will include technical information and reports, study schedule, and other pertinent information about the study. Additional project information will be posted to internal project sites for USACE use. Outreach will be coordinated with individuals and groups concerned.

12. REVIEW PLAN APPROVAL AND UPDATES

The home MSC 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. The home district is responsible for keeping the review plan up to date. Minor and significant 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 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 1165-2-214 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:

- 
Project Manager, Louisville District
502-315-6776

ATTACHMENT 1: TEAM ROSTERS. Include contact information for the PDT, ATR team, and MSC. The credential and years of experience for the ATR team should be included when it is available.

Project Delivery Team*				
Name	Role	Office Symbol	Telephone	Email
[REDACTED]	Project Manager	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Environmental Resources	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Cultural Resources	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Project Engineer	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Civil	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Economics	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Cost	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Real Estate	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Legal Counsel	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Public Affairs	USACE-Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Levee Safety	USACE-Louisville	[REDACTED]	[REDACTED]
*Team member name subject to change based on availability.				

District Quality Control Team*

Name	Role	Office Symbol	Telephone	Email
[REDACTED]	Hydraulics	USACE- Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Planning	USACE - Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Civil	USACE- Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Cost	USACE- Louisville	[REDACTED]	[REDACTED]
[REDACTED]	Real Estate	USACE- Louisville	[REDACTED]	[REDACTED]

*Team member name subject to change based on availability.

The Following table includes a listing of anticipated ATR team members. Since plan formulation is in the very early stages, ATR team makeup may necessarily need to change. In this event, LRL will advise LRD and LRD will review the request.

Agency Technical Review Team				
Name	Role	Office	Telephone	Email
[REDACTED]	ATR Lead / Planning	NAE	[REDACTED]	[REDACTED]
[REDACTED]	Civil Engineering	LRB	[REDACTED]	[REDACTED]
[REDACTED]	Real Estate	LRH	[REDACTED]	[REDACTED]
[REDACTED]	Hydraulic Engineering	MNR	[REDACTED]	[REDACTED]
[REDACTED]	Geotechnical Engineering	SWF	[REDACTED]	[REDACTED]
[REDACTED]	Cost Engineering	NWW	[REDACTED]	[REDACTED]

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 DrCheckssm.

<u>SIGNATURE</u> _____ <u>Name</u> ATR Team Leader <u>Office Symbol/Company</u>	_____ Date
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<u>SIGNATURE</u> _____ <u>Name</u> Project Manager (home district) <u>Office Symbol</u>	_____ Date
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<u>SIGNATURE</u> _____ <u>Name</u> Architect Engineer Project Manager ¹ <u>Company, location</u>	_____ Date
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<u>SIGNATURE</u> _____ <u>Name</u> Review Management Office Representative <u>Office Symbol</u>	_____ Date
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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.

<u>SIGNATURE</u> _____ <u>Name</u> Chief, Engineering Division (home district) <u>Office Symbol</u>	_____ Date
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<u>SIGNATURE</u> _____ <u>Name</u> Chief, Planning Division (home district) <u>Office Symbol</u>	_____ Date
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¹ Only needed if some portion of the ATR was contracted

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
MSC	Major Subordinate Command	USACE	U.S. Army Corps of Engineers
		WRDA	Water Resources Development Act