REVIEW PLAN

Section 519
Ten Mile Creek, Tazewell County, Illinois
Project Implementation Report

Rock Island District

MSC Approval Date: 18 June 2015
Last Revision Date: 12 May 2015

US Army Corps
of Engineers ®

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TABLE OF CONTENTS

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Section 519, Ten Mile Creek
Tazewell County, Illinois, PIR

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan (RP) defines the scope and level of peer review for the Ten Mile Creek Critical Restoration Project Implementation Report, Tazewell County, Illinois. Products for review under this RP include: Project Implementation Report (PIR) with Integrated Environmental Assessment (EA) and Plans and Specifications (P&S). The PIR will include: an environmental and cultural assessment, cost estimate, economic analysis, hydraulic and hydrologic analysis, geotechnical analysis, and a real estate plan. All products will undergo District Quality Control (DQC) review and Agency Technical Review (ATR).

The Illinois River Basin Restoration Program (Section 519) study and construction authority is contained in the Illinois River Basin Restoration Program (Section 519) Programmatic Review Plan (PgRP), Section 4. In this document, the program will be denoted as "Section 519," because this is the program name most commonly used by the Corps of Engineers, the river partnership, and the public.

b. References. Reference materials are shown in the Section 519 PgRP.

c. Requirements. This RP was generally developed in accordance with EC 1165-2-214, Civil Works Review, 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 planning model certification/approval (per EC 1105-2-412).This RP is based on the Mississippi Valley Division (MVD) Model Review Plan, which is applicable to projects that do not require Independent External Peer Review (IEPR), as defined by the mandatory Type I or Type II IEPR triggers contained in EC 1165-2-214, Civil Works Review. That applicability regarding the Section 519 Program is contained in the Section 519 PgRP, Section 2.

2. REVIEW MANAGEMENT ORGANIZATION COORDINATION

Review Management Organization (RMO) Coordination will be in accordance with the Section 519 PgRP in Sections 6, 8 and 9.

3. STUDY INFORMATION

a. Decision and/or Implementation Document. The Ten Mile Creek Critical Restoration Project Implementation Report, Tazewell County, Illinois decision document will be prepared in accordance with ER 1105-2-100. In accordance with the Section 519 PgRP and the Section 519 MOU cited therein, the approval level of the decision document (if policy compliant) is MVD. An Environmental Assessment (EA) will be prepared along with the decision document. An implementation document (Plans and Specifications, or P&S), will also be prepared for implementation of the project and will undergo ATR review.

b. Study/Project Description. The Ten Mile Creek Watershed is a sub watershed of the Illinois River Basin. Draining 11,027 acres in Worth and Spring Bay Townships in Woodford County, and Washington and Fondulac Townships in Tazewell County (Figure 1). Ten Mile Creek is approximately 10 miles long and flows northwest from Washington Township to the Narrows of Peoria Lake at the Illinois River.

The problems in the study area include increase sedimentation, erosion, and loss of species habitat and diversity. Implementation of restoration measures within the Ten Mile Creek Watershed will improve local ecological integrity.

The State of Illinois, Department of Natural Resources, is the non-Federal sponsor. No policy waivers are expected for this project.

Potential restoration measures could include: habitat enhancement by constructing riffle and pool structures, grade control, bank stabilization, invasive species control, stream remeandering, dry reservoirs, woodland management, and buffers. The estimated cost for the project is$7.5 Million.

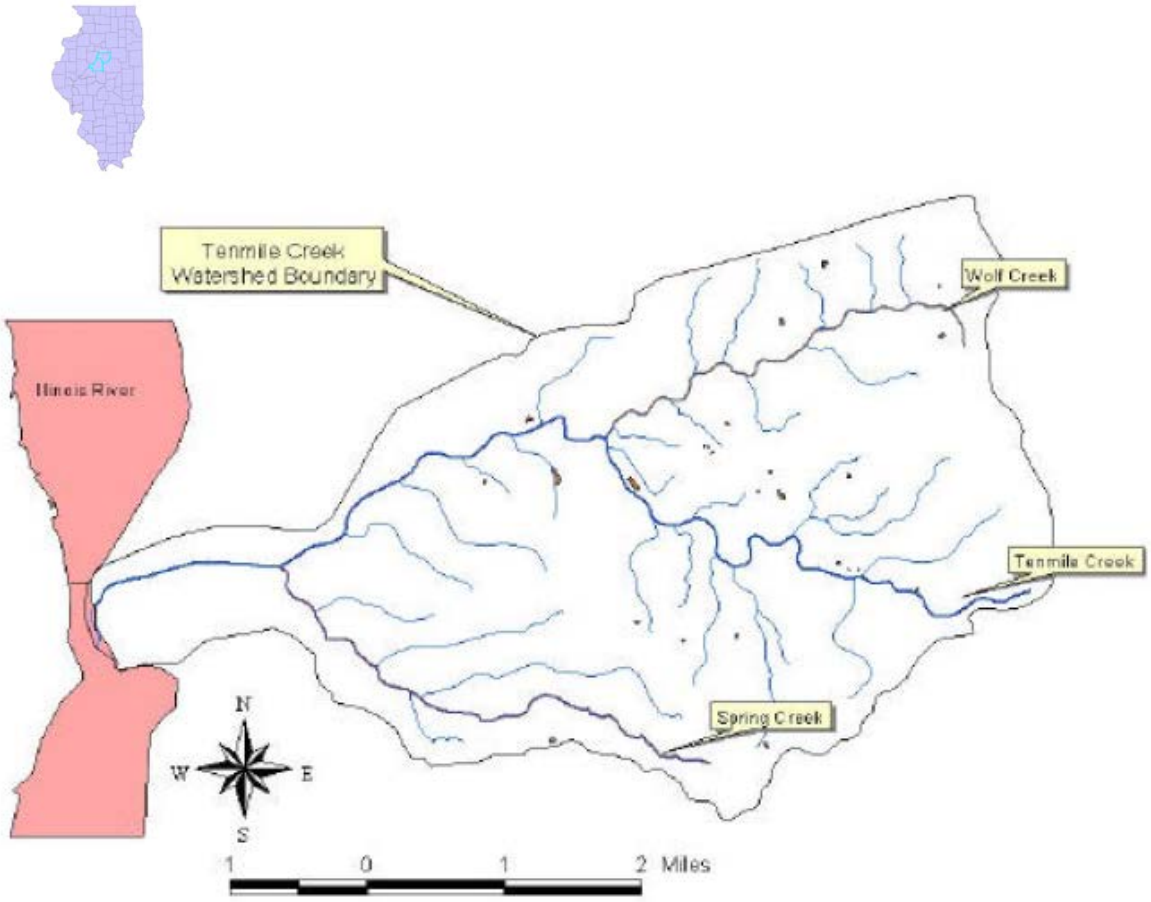

Figure 1. Ten Mile Creek Watershed

c. Factors Affecting the Scope and level of Review. The factors affecting the scope and level of review are discussed in the Section 519 PgRP, Section 5.

d. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to District Quality Control (DQC) and ATR, similar to any products developed by USACE. No In-Kind Contributions are anticipated for this PIR.

4. DISTRICT QUALITY CONTROL

The DQC will be conducted in accordance with the Section 519 PgRP, Section 3.A.

DQC will be conducted by the home district (MVR) when the Draft PIR and associated work products are at least 75 percent complete. This review will be performed in accordance with MVR's QMP. Additional DQC may occur throughout the development of the PIR.

DQC will also be conducted by MVR on P&S.

The DQC team will be comprised of individuals from all technical disciplines that are significant in the preparation of the PIR and P&S. In general DQC team members will include the following disciplines: Plan Formulation, Environmental Planner, Cultural Resources Planner, H&H Engineer, Civil Engineer, Cost Engineer, and Real Estate.

A budget and schedule for DQC of the PIR and P&S have not been developed. This RP is a living document and will be updated when a budget and schedule for DCQ of the PIR and P&S have been developed.

5. AGENCY TECHNICAL REVIEW

The ATR will be conducted in accordance with the Section 519 PgRP, Section 3.B and 6.B.

The ATR team will be finalized by MVD and is comprised of individuals from all the technical disciplines that are significant in the preparation of the report. Potential ATR team members and roles are outlined in Table 1. MVD will serve as the RMO in lieu of the ECO-PCX.

Table 1. ATR Team Member and Expertise Required

ATR Team Disciplines	SME Required
ATR Lead	The ATR Lead should be a Senior Professional with experience in preparing decision documents and conducting ATR. The lead should have necessary skills in leading a virtual team through a review. The ATR lead must be from outside the home division.
Plan Formulation	The Plan Formulation reviewer should be a Senior Water Resources Planner with experience in riverine aquatic ecosystem restoration.
Environmental Planner	The Environmental Reviewer should be a Senior Biologist with experience working on large river systems and aquatic ecology. The reviewer should also have demonstrated experience and understanding in Cost Effectiveness/Incremental Cost Analysis (CE/ICA) and the IWR Planning

	Suite. The reviewer should be familiar with ecosystem output analyses and concepts.
Cultural Resources Planner	The Cultural Resources Reviewer should be a full-time professional in archaeological research and have experience in general North American archaeology, with emphasis on large river systems cultural resources.
H&H Engineer	The H&H Reviewer should be a Senior Engineer proficient in hydrologic and hydraulic engineering models and have experience working on large river systems.
Civil Engineer	The Civil Reviewer will have experience in civil design in wetland and large river systems. A geotechnical engineer may also perform this review depending on qualifications. A certified Professional Engineer (P.E.) is recommended.
Cost Engineer	Cost MCX Pre-Certified Professional with experience preparing cost estimates for habitat restoration and enhancement projects. A certified cost engineer may conduct the Cost engineering Review and certification in accordance with the Cost MCX.
Real Estate	The Real Estate Reviewer will have a thorough understanding of real estate transactions for ecosystem restoration projects and working experience with large river systems.

6. INDEPENDENT EXTERNAL PEER REVIEW

The Section 519 Program is very limited in scope, cost and risk such that neither the Section 519 Program nor any projects in it would significantly benefit from IEPR. The scope, cost and risk of Section 519 projects are comparable with other projects which have already been excluded from IEPR. The DCW approved a programmatic exclusion from Type I IEPR on 31 July 2013. All Section 519 Program CRPs are excluded from Type I IEPR except those projects that include an Environmental Impact Statement or meet mandatory triggers for Type I IEPR as stated in EC 1165-2-214. This is in accordance with the Section 519 PgRP Sections 3.C, 5 and 8.

7. POLICY AND LEGAL COMPLIANCE REVIEW

The Policy and Legal Compliance Reviews will be conducted in accordance with the Section 519 PgRP, Section 3.D.

8. COST ENGINEERING DIRECTORY OF EXPERTISE REVIEW AND CERTIFICATION

Cost Engineering Mandatory Center of Expertise (MCX) Review and Certification will be conducted in accordance with the Section 519 PgRP, Sections 6 B and 8.D.

9. MODEL CERTIFICATION AND APPROVAL

Approval of planning and engineering models used in Section 519 projects will be in accordance with the Section 519 PgRP, Section 3.E, and Section 7. Table 2 provides a list of planning and engineering models that may be used during the study.

Table 1. Potential Planning and Engineering Models To Be Used

Model Name and Version	Brief Description of the Model and How It Will Be Applied In The Study	Certification / Approval Status
Planning Models		
IWR-Plan	USACE cost-effectiveness and incremental cost analysis software; used in the formulation, evaluation, and comparison of alternative plans. In addition, IWP-Plan identifies "best buy" plans from the range of alternative plans and performs incremental cost analysis to provide insight on cost-effectiveness.	Certified
Habitat Evaluation Procedure (HEP)	Evaluated existing, future without-project and future-with project ecosystem conditions. Serves as the basis for ecosystem assessment and effectiveness of alternative plans.	Approved
Habitat Evaluation and Assessment Tool (HEAT)	Accounting software for input of HEP developed by ERDC.	Certified
Engineering Models		
Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS)	Designed to simulate the complete hydrologic processes of dendritic watershed systems.	
Hydrologic Engineering Center-Hydrologic Modeling Geospatial Hydrologic Extension (HEC-GeoHMS)	Analyst extension to develop a number of hydrologic modeling inputs for HMS. Allows users to visualize spatial information, document watershed characteristics, perform spatial analysis, and delineate subbansins and streams.	
Hydrologic Engineering Center-River Analysis System (HEC-RAS)	Allows users to perform one-dimensional steady-flow, unsteady flow, sediment transport/mobile bed computations, and water temperature modeling.	
Hydrologic Engineering Center-Geo River Analysis System (HEC-GeoRAS)	A multi-faceted interface that allows for geometric data files to be imported from ArcGIS into HEC-RAS. Then processes simulation results and exports data that can be used for ecosystem restoration and flooding purposes.	
Hydrologic Engineering Center-Ecosystem Function Model (HEC-EFM)	Designed to help study teams determine ecosystem responses to changes in the flow regime of a river or connected wetland.	
Hydrologic Engineering Center-Ecosystem Function Model Plotter (HEC-EFM Plotter)	Designed to help users view, navigate, and interpret output generated from HEC-EFM.	
Hydrologic Engineering Center-Geo Ecosystem Function Model (HEC-GeoEFM)	An ArcMap extension developed to support spatial analyses commonly used during applications of EFM.	

10. REVIEW SCHEDULES AND COSTS

Agency Technical Review: The Project Implementation Report will undergo Agency Technical Review (ATR). The ATR team will review documents prior to MVD QA and the Alternatives Formulation Briefing (AFB), all ATR comments will be addressed prior to AFB and MVD will receive all DQC and ATR comments. ATR will begin after final DQC review but prior to BCOE and

the DQC comments will be provided to the ATR team for review. DrChecks will be used to document the ATR.

The ATR Lead will be from outside the MSC, all ATR members will from outside the home district. The ATR Lead will provide ATR Certification with the project feasibility submittal. is anticipated that this review should not exceed 12 weeks (Table 3). The total cost of this review should not exceed $25,000 (Table 4).

Alternatives Formulation Briefing: Upon completion of the ATR MVR will submit an AFB memo to MVD. A conference call between MVD and MVR will be arranged to discuss the project and alternatives in more detail, this call will serve as the AFB milestone. An In Progress Review (IPR) conference call prior to the AFB will be arranged if necessary. Following MSC concurrence of the AFB the ATR team may continue to review the documents if any changes have occurred. The ATR Lead will participate in the AFB milestone to address the ATR process and any significant and/or unresolved ATR concerns.

Public Review: MVD will provide approval for the report to be released for public review. Public review will occur after all comments from DQC, ATR and AFB have been addressed.

Table 3. Estimated ATR Schedule

Event	Kick-off	Reviewers Comments End	PDT Evaluation	Back-Check	Complete
ATR of PIR	Feb 2017	TBD	TBD	TBD	TBD

Table 4. Estimated ATR Cost

Reviewer	Cost
ATR Lead	$2,000
Plan Formulation	$3,000
Environmental Planner	$4,000
Cultural Resources Planner	$1,000
H&H Engineer	$4,000
Civil Engineer	$4,000
Cost Engineer	$4,000
Real Estate	$3,000
Total	$25,000

ATR shall be performed on the project plans and specifications and any supporting design documentation prior to BCOE sign-off. The review team at a minimum should consist of the members listed in Table 1. DrChecks will be used to document the ATR. The ATR Lead will be from outside the MSC, all ATR members will be from outside the home district. It is anticipated that this review should not exceed 8 weeks (Table 5). The total cost of this review shall not exceed $6,000 (Table 6).

Preperation of Plans and Specifications will not occur until after the final approval of the PIR at MVD.

Table 2. Estimated ATR Schedule

Event	Kick-off	Reviewers Comments End	PDT Evaluation	Back-Check	Complete
ATR of Implementation Documents	TBD	TBD	TBD	TBD	TBD

Table 3. Estimated ATR Cost for Implementation Documents

Reviewer	Cost
ATR Lead	$1,000
Environmental	$1,000
H&H Engineer	$2,000
Civil Engineer	$2,000
Total	$6,000

11. PUBLIC PARTICIPATION

Public review will be in accordance with the Section 519 PgRP, Section 6.E

12. REVIEW PLAN APPROVAL AND UPDATES

The RP approval process will be in accordance with the Section 519 PgRP, Section 8.B.

13. REVIEW PLAN POINTS OF CONTACT

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

- Andy Leichty, Section 519 Program Manager, 309-794-5399
- Gabe Harris, MVD Upper District Support Team, 601-634-5926

ATTACHMENT 1: TEAM ROSTERS

Project Delivery Team

Name	Phone	Discipline	Position/Credentials (yrs)
Andrew Leichty	309-794-5399	Program Manager	S. 519 Program Manager (1)
Steve Rumple	309-794-5565	Project Management	Project Manager (6)
Katie Opsahl	651-290-5259	Planning & Policy	Project Study Manager (5)
Charlene Carmack	309-794-5570	Environmental Sciences	Biologist, etc. (30)
Dennis Johnson	309-794-5547	Economics	Economist (2)
TBD in PMP		Cost Engineering	MCX Pre-certified Professional ( )
Erica Stephens	309-794-5925	Project Engineer	Engineer (6)
Ron Diess	309-794-5185	Historical/Cultural Resources	Archeologist (28)
Brandon Stevens	309-794-5932	GIS	Cartographer (9)
Amanda Geddes	309-794-5054	Geotechnical Engineering	Geotechnical Engineer (5)
Jason Appel	309-794-5489	Real Estate	Real Estate (8)
Heather Bishop	309-794-5289	Hydrology & Hydraulic Engineer	Engineer (14)

Agency Technical Review (ATR) Team*

Subject Matter Expert Name	Phone	SME Expertise (Each member may represent >1) expertise)	Example Credentials (Yrs. Experience)
TBD by PDT		*ATR Lead for RMO*	
TBD by PDT		*Economics*	*RTS, Economics ( )*
TBD by PDT		*Cost Engineering*	*MCX Pre-certified Professional ( )*
TBD by PDT		*Environmental Engineering*	
TBD by PDT		*NEPA Compliance*	*MVD RTS, NEPA( )*
TBD by PDT		*Ecosystem Restoration*	*MVD RTS, Ecosystems ( )*

*MVR will propose ATR Lead and Team to MVD for approval.

Vertical Integration Review Team

Name	Phone	Expertise
Rayford Wilbanks	(601) 634-5847	MVD, Leader, Planning Community of Practice
Fay Lachney	(601) 634-5827	MVD, Deputy, Planning Community of Practice
Renee Turner	(601) 634-5818	MVD, Deputy, Upper District Support Team
Gabe Harris	(601) 634-5926	MVD, Upper District Support Team
Gary Young	(601) 634-5854	MVD, Senior Regional Biologist
Jodi Creswell	(415) 503-6852	ECO-PCX Operational Director

Nate Richards	(309) 794-5286	ECO-PCX Model Review
Dennis Hamilton	(309) 794-5340	MVR Chief, Programs & Project Management
Andy Leichty	(309) 794-5399	Section 519 Program Manager

ATTACHMENT 2: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Section or Page / Paragraph Number

ATTACHMENT 3: SECTION 519 REVIEW PLAN CHECKLIST

Date:	**4 February 2015**
Originating District:	Rock Island District
Project/Study Title:	Ten Mile Creek Critical Restoration, Tazewell County, Illinois
P2# and AMSCO#:	
District POC:	Steve Rumple, Project Manager
PCX Reviewer:	

Please fill out this checklist and submit with the draft RP when coordinating with the MSC. Any evaluation boxes checked "No" may indicate the project may not be able to use the MVD Model RP. Further explanation may be needed or a project specific RP may be required. Additional coordination and issue resolution may be required prior to MSC approval of the RP. Checklist may be limited to Section I or Section II or Both, depending on content of RP (or subsequent amendments).

Section I - Decision Documents

REQUIREMENT	EVALUATION
1. Is the Review Plan (RP) for a Section 519 Project?	Yes ☒ No ☐
a. Does it include a cover page identifying it as following the Model RP and listing the project/study title, originating district or office, and date of the plan?	a. Yes ☒ No ☐
b. Does it include a table of contents?	b. Yes ☒ No ☐
c. Is the purpose of the RP clearly stated?	c. Yes ☒ No ☐
d. Does it reference the Project Management Plan (PMP) of which the RP is a component?	d. Yes ☐ No ☒
e. Does it succinctly describe the levels of review: District Quality Control (DQC), and Agency Technical Review (ATR)?	e. Yes ☒ No ☐
f. Does it include a paragraph stating the title, subject, and purpose of the decision document to be reviewed?	f. Yes ☒ No ☐
g. Does it list the names and disciplines of the Project Delivery Team (PDT)?* **Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.* **Comments:** No mention of PMP is found in the model template.	g. Yes ☒ No ☐

2. Is the RP detailed enough to assess the necessary level and focus of the reviews?	Yes ☒ No ☐
3. Does the RP define the appropriate level of review for the project/study?	Yes ☒ No ☐
a. Does it state that DQC will be managed by the home district in accordance with the MVD and district Quality Management Plans? b. Does it state that ATR will be managed by MVD? **Comments:**	a. Yes ☒ No ☐ b. Yes ☒ No ☐
4. Does the RP explain how ATR will be accomplished?	Yes ☒ No ☐
a. Does it identify the anticipated number of reviewers? b. Does it provide a succinct description of the primary disciplines or expertise needed for the review (not simply a list of disciplines)? c. Does it indicate that ATR team members will be from outside the home district? d. Does it indicate where the ATR team leader will be from? e. If the reviewers are listed by name, does the RP describe the qualifications and years of relevant experience of the ATR team members?* **Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.* **Comments:**	a. Yes ☒ No ☐ b. Yes ☒ No ☐ c. Yes ☒ No ☐ d. Yes ☒ No ☐ e. Yes ☐ No ☒
5. Does the RP address review of sponsor in-kind contributions?	Yes ☒ No ☐
6. Does the RP address how the review will be documented?	Yes ☒ No ☐
a. Does the RP address the requirement to document ATR comments using Dr Checks? **Comments:**	a. Yes ☒ No ☐
7. Does the RP address Policy Compliance and Legal Review?	Yes ☒ No ☐
8. Does the RP present the tasks, timing and sequence (including deferrals), and costs of reviews?	Yes ☒ No ☐

9. Does the RP indicate the study will address Safety Assurance factors? Factors to be considered include: • Where failure leads to significant threat to human life • Novel methods\complexity\ precedent-setting models\policy changing conclusions • Innovative materials or techniques • Design lacks redundancy, resiliency of robustness • Unique construction sequence or acquisition plans • Reduced\overlapping design construction schedule **Comments:**	Yes ☐ No ☐ n/a ☒
10. Does the RP address opportunities for public participation?	Yes ☒ No ☐
11. Does the RP indicate ATR of cost estimates will be conducted by pre-certified district cost personnel who will coordinate with the Walla Walla Cost MCX?	Yes ☒ No ☐
12. Has the approval memorandum been prepared and does it accompany the RP?	Yes ☒ No ☐

SECTION II - IMPLEMENTATION DOCUMENTS

Please fill out this checklist and submit with the draft Review Plan or subsequent Review Plan amendments when coordinating with the MSC. For DQC, the District is the RMO; for ATR and Type II IEPR, MVD is the RMO. Any evaluation boxes checked "No" indicate the RP possibly may not comply with MVD Model Review Plan and should be explained. Additional coordination and issue resolution may be required prior to MVD approval of the Review Plan.

REQUIREMENT	EVALUATION
1. Are the implementation documents/products described in the review or subsequent amendments?	Yes ☒ No ☐
2. Does the RP contain documentation of risk-informed decisions on which levels of review are appropriate?	Yes ☒ No ☐
3. Does the RP present the tasks, timing, and sequence of the reviews (including deferrals)?	Yes ☒ No ☐
a. Does it provide an overall review schedule that shows timing and sequence of all reviews? b. Does the Review Plan establish a milestone schedule aligned with the critical features of the project design and construction?	a. Yes ☒ No ☐ b. Yes ☒ No ☐

4. Does the RP address engineering model review requirements?	Yes ☒ No ☐
a. Does it list the models and data anticipated to be used in developing recommendations?	a. Yes ☒ No ☐
b. Does the RP identify any areas of risk and uncertainty associated with the use of the proposed models?	b. Yes ☒ No ☐
c. Does it indicate the certification/approval status of those models and if review of any model(s) will be needed?	c. Yes ☒ No ☐
d. If needed, does the RP propose the appropriate level of review for the model(s) and how it will be accomplished?	d. Yes ☐ No ☐
5. Does the RP explain how and when there will be opportunities for the public to comment on the study or project to be reviewed?	Yes ☒ No ☐
6. Does the RP address expected in-kind contributions to be provided by the sponsor?	Yes ☒ No ☐
If expected in-kind contributions are to be provided by the sponsor, does the RP list the expected in-kind contributions to be provided by the sponsor?	Yes ☐ No ☐
7. Does the RP explain how the reviews will be documented?	Yes ☒ No ☐
a. Does the RP address the requirement to document ATR comments using Dr Checks published comments and responses pertaining to the design and construction activities summarized in a report reviewed and approved by the MSC and posted on the home district website?	a. Yes ☒ No ☐
8. Has the approval memorandum been prepared and does it accompany the RP?	Yes ☒ No ☐

ATTACHMENT 4: STATEMENT OF TECHNICAL REVIEW FOR DECISION & IMPLEMENTATION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the *Project Implementation Report, or Environmental Assessment, or Preliminary Design Documents, and/or Cost Estimate* for *Ten Mile Creek Critical Restoration Project, Tazewell County, Illinois* 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[sm].

ATR Team Lead (TBD) — Date
ATR Team Leader
CEXXX

Steve Rumple — Date
Project Manager
CEXXX

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.

NAME — Date
Chief, Engineering Division
CEXXX

NAME — Date
Chief, Planning Division
CEXXX