REVIEW PLAN

St. Louis Riverfront, Missouri and Illinois, Meramec River Ecosystem Restoration
St. Louis and Jefferson Counties, MO Feasibility Report

St. Louis District

MSC Approval Date: 18 June 2015
Last Revision Date: 30 January 2018

US Army Corps
of Engineers ®

REVIEW PLAN

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1. PURPOSE AND REQUIREMENTS

Purpose. This plan defines the scope and level of peer review for the St. Louis Riverfront, Missouri and Illinois, Meramec River Ecosystem Restoration, Saint Louis and Jefferson Counties, MO Feasibility Report.

a. References

(1) Engineer Circular (EC) 1165-2-214, Civil Works Review Policy, 15 Dec 2012
(2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
(3) Engineer Regulation (ER) 1110-1-12, Quality Management, 30 Sep 2006
(4) ER 1105-2-100, Planning Guidance Notebook, Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 Nov 2007
(5) MVS PMP March 2015
(6) MVD Regional Quality Management Plan June 2014
(7) MVS Quality Management Plan October 1999
(8) MVD 24JAN17 MFR, Interim Guidance for District Quality Control of Planning Products

b. Requirements. This plan was developed under EC 1165-2-214, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works products. It provides 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 (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these reviews, 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).

2. REVIEW MANAGEMENT ORGANIZATION COORDINATION

The Review Management Organization (RMO) manages the overall peer review effort described in this plan. The RMO for decision documents is either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the document's primary purpose. The RMO for the peer review effort described in this Review Plan is National Ecosystem Restoration Planning Center of Expertise. The RMO will coordinate with the Cost Engineering Directory of Expertise (DX) to ensure the appropriate expertise is included on the review teams to assess the adequacy of cost estimates, construction schedules and contingencies.

3. STUDY INFORMATION

a. Decision Document. St. Louis Riverfront, Missouri and Illinois, Meramec River Ecosystem Restoration Feasibility Report is an ecosystem restoration project located in Jefferson and Saint Louis Counties of Missouri. The single purpose feasibility study is specifically authorized by a 21 June 2000 resolution by the Committee on Transportation and Infrastructure, US House of Representatives, Docket 2642. The decision document will be a feasibility report approved by the Chief of Engineers and will require Congressional authorization to implement. An integrated environmental assessment is anticipated and will be prepared with the feasibility report.

b. Study/Project Description. The intent of this project is to restore the attributes of a natural functioning river ecosystem and preserve and restore aquatic habitat for fish and wildlife, including federally endangered mussel species in a portion of the Meramec River Basin. The non-Federal sponsor is the Missouri Department of Natural Resources. The primary problems identified in the reconnaissance study were in-stream transport of contaminated sediments downstream to less impacted areas and impacts of both sediment quantity and contaminants on biota, humans, and federally endangered species; and an influx of floodplain sediments during flooding and other erosion events. Alternatives to be considered are sediment capture structures, wetland restoration, riparian corridor restoration, and restoring critical mussel habitat. The estimated project cost is [redacted] and is expected to benefit 1,850 acres of riverine habitat.

c. Factors Affecting the Scope and Level of Review.

- A portion of the project area was deemed a superfund site by the EPA in October 1992 due to mine tailings containing elevated levels of lead, cadmium and zinc. The Big River and its floodplain contain elevated levels of lead, but EPA is currently still working through its remedial investigation/feasibility study process. This project is being done as a collaborative effort with the EPA, state agencies and aligning the scope and schedule may prove to be challenging since the Corps cannot construct in contaminated areas.

- The most significant project risk is the uncertainty of the future without project conditions. EPA has not issued a Record of Decision for this site, nor have they identified if and where they will do remediation. The magnitude of this risk is selecting a plan that may vary in spatially or scope from feasibility to construction. To capture the implications of these risks the team will quantify the benefits and costs of potential scenarios based on several assumptions.

- There is no threat to human life/safety assurance based on the type of alternatives (sediment capture structures, bank stabilization, riparian corridor restoration) being consider for this ecosystem restoration project as was assessed by the Saint Louis District Chief of Engineering. Furthermore the project area is known as a highly used aquatic recreation area with a warning for fish consumption so our project of habitat enhancement will not negatively impact the economics, environment or the social well-being of the area. It is anticipated that the project has potential to increase the economic and social well-being in the area.

- It is not anticipated that the project will cost more than [redacted] so will not exceed the [redacted] cost threshold

- There has been no request by the Governor of an affected state for a peer review by independent experts and none is anticipated since the Governor has is updated by the sponsor, the Missouri Department of Natural Resources.

- The PDT doesn't anticipate any significant public dispute as to the size, nature, or effects of the project since the projects potential alternatives decrease sedimentation movement which can increase the water quality in the area, it is anticipated that the decrease in contaminated sediment will be widely accepted by the public. Also based on past ecosystem restoration projects enhancing fish habitat in area that has high aquatic recreation is usually widely

accepted by the public. The PDT is cognizant that the local public is wary of the EPA and that there is potential for the Corps study to be confused with the EPA's feasibility study.

- The alternatives being considered for this project are not based on novel methods, nor do they involve the use of innovative materials or technique, contain precedent setting method or models.

- It is not anticipated that the project design will require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule.

d. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the non-Federal sponsor include: a Soil Water Assessment Tool (SWAT) hydrologic model, technical input and review of feasibility study materials, and communication and outreach support.

4. DISTRICT QUALITY CONTROL

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. 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. Documentation of completed DQC should be provided to the MSC, PCX and ATR Team leader prior to initiating ATR.

a. Documentation of DQC. Dr. Checks review software will be used to document the major DQC milestones; prior to ATR of the Tentatively Selected Plan Milestone, Agency Decision Milestone, and Final Report. DrChecks will be used to document all DQC comments, responses and associated resolutions accomplished throughout the review process. Comments will be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

b. Products to Undergo DQC. Products to undergo a DQC for the Tentatively Selected Plan Milestone are the problem and opportunities, objectives, existing conditions, future without project conditions, potential measures, and tentatively selected plan to include the report

synopsis, risk register, formulated alternatives, models used in the planning and engineering process, hydraulic analysis and technical appendices. Products to undergo DQC after the Tentatively Selected Plan milestone include the draft feasibility report with integrated environmental assessment and all appendices. Products to undergo DQC after the Agency Decision Milestone and before the Final Report Milestone are the formulated alternatives, models used in the planning and engineering process, hydraulic analysis, cost estimate, real estate plan, engineering plates, risk register, and draft report with the integrated environmental assessment and all appendices.

c. Required DQC Expertise.

DQC Team Members	Expertise Required
Plan Formulation	The plan formulation reviewer will be a senior water resources planner with experience in environmental restoration projects, incremental cost analysis, and the necessary review and certification processes.
NEPA Compliance	NEPA compliance specialist, preferably with experience in studies for improving the quality of the environment in the overall public interest, as authorized under Section 216 of the Flood Control Act of 1970.
Environmental Resources	The environmental resources reviewer will be a senior environmental resources planner with experience in endangered mussel species.
Civil Engineer	The environmental engineer reviewer will be a senior environmental engineer with experience with HTRW concerns, environmental restoration projects and designing features dealing with sedimentation.
Hydraulic Engineering	The hydraulic engineering reviewer will be an expert in the field of hydraulics and have a thorough understanding of HEC-RAS computer modeling techniques, MIKE-SHE, and SWAT and as well as an expert in sedimentation analysis.
Geotechnical Engineering	The geotechnical engineering reviewer will be an expert in the field of geotechnical analysis and have a thorough understanding of soil and rock mechanics.
GIS	The GIS reviewer will be a senior GIS specialist with experience in both geospatial analysis and cartographic expertise.
Cost Engineering	The cost engineering reviewer will be a senior cost engineer with experience is the cost certification process.
Real Estate	The real estate reviewer will be a senior real estate specialist with experience in real estate ownership research, right of way maps, and real estate plans.
Economics	The reviewer will be a senior economist with experience in evaluating the ICA.
Construction/Operations	The reviewer will have experience in the constructability of various ecosystem restoration features to include sediment capture structures, wetland restoration structures, riparian corridor restoration structures, and mussel habitat structures.
Hazardous, Toxic and Radioactive Waste	This reviewer will be an expert in HTRW parameters and Federal guidelines to ensure this project is done within the standards set forth by the USACE.

5. AGENCY TECHNICAL REVIEW

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 certified 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. Products to undergo an ATR after the Tentatively Selected Plan Milestone are the problem and opportunities, objectives, existing conditions, future without project conditions, potential measures, and tentatively selected plan to include the formulated alternatives, models used in the planning and engineering process, hydraulic analysis, report synopsis and risk register. Products to undergo DQC after the Tentatively Selected Plan milestone include the draft feasibility report with integrated environmental assessment and all appendices. Products to undergo ATR after the Agency Decision Milestone and before the Final Report Milestone are the formulated alternatives, models used in the planning and engineering process, hydraulic analysis, cost estimate, real estate plan, engineering plates, and draft report with the integrated environmental assessment and all appendices.

b. Required ATR Team Expertise.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should have the necessary skills and experience to lead a virtual team through the ATR process. The lead may serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc.).
Planning	A senior planner with expertise in ecosystem restoration projects, ICA, endangered species, and watershed planning.
Economics	A senior economist with experience in ecosystem restoration projects and the IWR planning suite.
Environmental Resources	A senior water resources environmental resource planner with experience in ecosystem restoration projects, habitat analysis, ICA, endangered mussel species and their fish host, the NEPA process and watershed level analysis.
Hydraulic Engineering	An expert in the field of hydraulics and have a thorough understanding of sedimentation analysis as it pertains to hydraulic dynamics, as well as computer modeling techniques that will be used HEC-RAS, MIKE-SHE, SWAT to ensure proper review of the anticipated WIK sedimentation modeling.

Geotechnical Engineering	An expert in geotechnical analysis and have a thorough understanding of soil and rock mechanics particularly related to sediment and contaminant transport.
Civil Engineering	A senior civil engineer with experience with HTRW concerns, environmental restoration projects and designing features to reduce sedimentation.
Cost Engineering	A senior cost engineer with experience is the cost certification process.
Real Estate	A senior real estate specialist with experience in real estate ownership research, right of way maps, and real estate plans.
Hazardous, Toxic and Radioactive Waste (HTRW)	An expert in the field of HTRW parameters and Federal guidelines to ensure this project is done within the standards set forth by the USACE. It would be beneficial for the HTRW reviewer to have an understanding of EPA Superfund processes and procedures.
Climate Change	A senior reviewer with experience incorporating potential climate change threats and impacts to hydrologic analyses.

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification to then assess whether further specific concerns may exist. The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1165-2-214, ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of each ATR effort, the ATR team will draft 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 copy of each reviewer's comments (with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date for the draft report, and final report. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW

Independent External Peer Review (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.

- Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

a. Decision on IEPR. The team determined that a type I and type II IEPR should not be conducted based on the criteria in EC 1165-2-214 and the discussion in Section 3 – Factors Affecting the

Scope and Level of Review. An exclusion to Type I IEPR will be requested prior to the TSP. The study is limited in scope and risk so will not benefit from a Type I IEPR. Type II IEPR is not considered appropriate, because there is no potential life safety risk.

- The decision document does not meet the mandatory triggers for Type I IEPR:
  - The consequences of non-performance on the study is a loss of federal dollars but will not significantly impact the surrounding area's social, economics, or environment.

(i) Environment: The environmental degradation to aquatic T&E species is already occurring, excessive sediment adhered with lead is already in the system in large quantities and projected to increase over the next 50 years. The proposed measures have documented success and are designed with monitoring thresholds and adaptive management options to reduce complications due to unknowns.

(A) Identified bank stabilization implementation risks will not induce more sediment than is already projected to come into the system.

1. Stabilized banks non-performance– outputs would be similar to what would occur without the project.
2. Unintended consequence - If not designed systematically a stabilized bank can destabilize banks downstream. The team is cognizant of that potential and evaluated the system as a whole. Additionally, historic data shows that regardless of geographic changes in destabilized banks in the area systemic inputs are relatively constants so outputs would be similar to what would occur naturally.

(B) Identified riparian improvement implementation risks will not induce an increase degradation to the existing floodplain.

1. Tree planting mortality would be localized and not impact surrounding floodplain forest

(C) Identified instream sediment reduction implementation risks will not induce more sediment than is already projected to come into the system.

1. Off stream sediment basins non-performance– sediment outputs would be similar to what would occur without the project
2. Grade control structures with sediment removal component non-performance–sediment outputs would be similar to what would occur without the project.

(ii) Social: Several of the measures have the potential to reduce excessive sediment adhered with lead. If implemented this will have ancillary social benefits throughout the watershed, to the confluence of the Mississippi and further. Non-performance of the aforementioned potential project features were not identified to have significant social impacts.

(A) Adjacent landowners – There is a risk for bank stabilization non-performance to create unforeseen channel form changes, inducing bank erosion in localized areas. Currently, channel form changes occur both naturally and unnaturally within this system. The team's systemic approach and identified features reduce the likelihood of this occurring, and adaptive management reduces the consequence.

(B) Recreation - Potential non-performance could impact the aesthetics of the area and reduce kayaking opportunities. Bank erosion measures such as busted concrete, cars and other inappropriate material are documented interrupting the aesthetics of the river. Five existing mill dams impede kayaking

opportunities currently in the project area. Therefor the risk of significant recreational impacts to non-performance is low.

(C) Public Safety – Potential non-performance will not impact public safety. If any of the potential measures do not perform there will be no potential for loss of life or hazards to existing infrastructure. And while a possibility of temporary increased sedimentation during non-performance there can be no net increase in total sedimentation into the system.

(D) Social Justice – Based on historic analysis, social profiling and stakeholder identification the USACE team determined that there was negligible potential for social injustice regardless of project performance.

(iii) Economic: Non-performance of the project would have a negative economic impact on the Federal project. There is a minor risk that unforeseen channel form changes could induce localized bank stabilization issues in now stable areas. A landowner could spend money trying to reduce bank destabilization. The potential for this localized economic impact is low and captured in the adaptive management.

- The study is not likely to contain influential scientific information since bank stabilization, sediment budgets, and forested floodplains are problems with solutions that are well documented in scientific journals. USACE Districts have constructed over 55 similar projects on the Upper Mississippi River since 1984.

- There has been extensive collaboration amongst Federal and state agencies to include the USFWS, USEPA, NRCS, Missouri DNR and Missouri Department of Conservation, none have indicated a potential request to conduct an IEPR

- The proposed project will not meet the criteria for conducting Type II IEPR described in Paragraph 2 of Appendix D of EC 1165-2-214, including:
  - The Federal action will not pose a significant threat to human life;
  - The Federal action will not use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices;
  - The Federal action will not have project design that requires redundancy, resiliency, and/or robustness
  - The Federal action will not have unique construction sequencing or a reduced or overlapping design and construction schedule.

b. Products to Undergo Type I IEPR. Not-Applicable

c. Required Type I IEPR Panel Expertise. Not-Applicable

d. Documentation of Type I IEPR. Not-Applicable

7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for compliance with law and policy. Appendix H, ER 1105-2-100 provides guidance for policy and legal compliance reviews. The

reviews culminate in determinations that the report recommendations and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

8. COST ENGINEERING REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX at the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and in the development of the review charge(s). The DX will provide the Cost Engineering DX certification. The RMO is responsible for coordination with the Cost Engineering DX.

9. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR.

EC 1105-2-412 does not cover engineering models used in planning. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR.

a. Planning Models. The following models are being used to develop the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Certification /Approval Status
IWR-Planning Suite v. 2.0.6.0	Accounting software to compare habitat benefits among alternatives.	Certified
Creek Chub	Habitat Suitability Index models were developed by the FWS. Several of the approved fish HSI models have been used quantify aquatic fish benefits.	Approved for use
Black-capped Chickadee	Habitat Suitability Index model developed by the FWS. Used to quantify riparian floodplain benefits.	Approved for use
Meramec Mussel	HSI model used to quantify aquatic mussel benefits.	Certified

b. Engineering Models. The following models are being used to develop 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 4.0 (River Analysis System)	The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program performs 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 Big River and Meramec River.	HH&C CoP Preferred Model
SWAT	The soil and water assessment tool is an effective tool for assessing water resource that has been developed for sediment modeling in conjunction with MIKE-SHE as a product from our sponsors.	Allowed

10. REVIEW SCHEDULES AND COSTS

ATR Schedule

Reviews/Milestones	Start	Complete
TSP Milestone	2/18	2/18
PDT Review	2/18	2/18
DQC and Legal	2/18	3/18
Concurrent Review (ATR, IEPR, public, and policy)	4/18	6/18
ADM	6/18	8/18
Concurrent Review (DQC, ATR)	8/19	10/19
Submit Final Report to MVD/Transmittal to HQ	10/19	12/19
Chief's Report Milestone	2/20	2/20

ATR Cost

Reviewer	ATR after TSP	ATR after ADM	Milestones & IPR's
ECO-PCX QC	[redacted]	[redacted]	[redacted]
ATR Lead			
Planning			
Economics			[redacted]
Environmental Resources			
Hydraulic Engineering			[redacted]
Geotechnical Engineering			
Civil Engineering			
Cost Engineering			
Real Estate			
HTRW			
Total [redacted]			[redacted]

a. Type I IEPR Schedule and Cost. Not Applicable

b. Model Certification/Approval Schedule and Cost. All study models are certified or approved.

11. PUBLIC PARTICIPATION

At a minimum, the district will pursue two opportunities for public comment on the feasibility study. The first will be public/stakeholder scoping meeting during alternatives formulation and the second will occur when the draft Feasibility Report and environmental assessment is distributed for formal public review as part of the NEPA review process. Release of the draft feasibility report with integrated environmental assessment for public review will occur concurrently along with technical, policy and legal review after the TSP Milestone. This is in accordance with the SMART Planning framework. The current schedule has a 45-day public review initiating in 2017. Upon completion of the public review period, comments will be consolidated and addressed, if needed. A summary of the comments and resolutions will be included in the final report. Extensive coordination with these state and federal agencies will occur concurrently with the planning process.

12. REVIEW PLAN APPROVAL AND UPDATES

The Mississippi Valley Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input on the appropriate scope and level of review for the decision document. The Review Plan may change as the study progresses. The home district is responsible for keeping the plan up to date. Minor changes to the plan since the last MSC Commander approval are documented in Attachment 3. Significant changes to the Review Plan (such as scope and/or level of review changes) should be re-approved by the MSC Commander following the process used to initially approve the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

13. REVIEW PLAN POINTS OF CONTACT

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

- Project Manager (MVS), [redacted]
- District Support Team (MVD), [redacted]
- Ecosystem Restoration Planning Center of Expertise (MVD), [redacted]

ATTACHMENT 1: TEAM ROSTER

Discipline	Team	Name
Project Manager	PDT	[redacted]
Study Manager/Plan Formulator	PDT	[redacted]
Environmental Resource Planner	PDT	[redacted]
Cultural Resource Planner	PDT	[redacted]
Economics	PDT	[redacted]
Real Estate	PDT	[redacted]
Cost Engineer	PDT	[redacted]
Water Quality Specialist	PDT	[redacted]
H&H Engineer	PDT	[redacted]
Geotech Engineer	PDT	[redacted]
Environmental/Civil Engineer	PDT	[redacted]
Program Analyst	PDT	[redacted]
Regulatory	PDT	[redacted]
Office of Counsel	PDT	[redacted]
GIS	PDT	[redacted]
Plan Form	MSC	[redacted]
Environmental/NEPA	MSC	[redacted]
Economics	MSC	[redacted]
H&H	MSC	[redacted]
Real Estate	MSC	[redacted]
OC	MSC	[redacted]
Project Manager	DST	[redacted]
Project Manager	RIT	[redacted]
Plan Form	OWPR	[redacted]
Environmental	OWPR	[redacted]
Economics	OWPR	[redacted]
H&H	HQ	[redacted]
Real Estate	HQ	[redacted]
OC	HQ	[redacted]
PCX Manager	PCX	[redacted]

DQC ROSTER

DQC Team Members	Expertise
[redacted]	Is a senior water resources planner with experience in environmental restoration projects, incremental cost analysis, and the necessary review and certification processes that is ATR certified.
[redacted]	Is a senior environmental resources planner that is ATR certified. Has experience in studies for improving the quality of the environment in the overall public interest, as authorized under Section 216 of the Flood Control Act of 1970.
[redacted]	Is a senior civil engineer that supervises the civil engineer group.
[redacted]	Is a senior hydraulic engineering, supervisor, and an expert in the field of hydraulics and have a thorough understanding of HEC-RAS computer modeling techniques, as well as an expert in sedimentation analysis.
[redacted]	Is a geotechnical engineering that is an expert in the field of geotechnical analysis and has a thorough understanding of soil and rock mechanics.
[redacted]	Is the GIS supervisor with experience in both geospatial analysis and cartographic expertise.
[redacted]	Is a senior real estate specialist, and supervisor, with experience in real estate ownership research, right of way maps, and real estate plans.
[redacted]	Is a senior economist, and supervisor, with experience in evaluating CE/ICA outputs.
[redacted]	Has experience in the constructability of various ecosystem restoration features to include sediment capture structures, bank stabilization structures, and riparian corridor restoration structures.
[redacted]	Is an expert in the field of HTRW parameters and Federal guidelines to ensure this project is done within the standards set forth by the USACE.

ATTACHMENT 2a: STATEMENT OF DISTRICT REVIEW FOR DECISION DOCUMENTS

COMPLETION OF DISTRICT QUALITY CONTROL

District Quality Control (DQC) Review has been completed for the feasibility study for St. Louis Riverfront, Missouri and Illinois, Meramec River Ecosystem Restoration, Saint Louis and Jefferson Counties, MO Feasibility Report. DQC was conducted as defined in the project Review Plan to comply with the requirements of EC 1165-2-214. During the DQC, 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. All comments resulting from the DQC have been resolved and closed in DrChecks[sm].

SIGNATURE _____ Date _____

[redacted]
DQC Team Leader
Office Symbol/Company

SIGNATURE _____ Date _____

[redacted]
Project Manager
Office Symbol

CERTIFICATION OF DISTRICT QUALITY CONTROL

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 DQC of the project have been fully resolved.

SIGNATURE _____ Date _____

[redacted]
Chief, Engineering Division
Office Symbol

SIGNATURE _____ Date _____

[redacted]
Chief, Planning Division
Office Symbol

ATTACHMENT 2b: STATEMENT OF TECHNICAL REVIEW
COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the feasibility report for St. Louis Riverfront, Missouri and Illinois, Meramec River Ecosystem Restoration, Saint Louis and Jefferson Counties, MO Feasibility Report. The ATR was conducted as defined in the project 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 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 closed in DrChecks[sm].

SIGNATURE _____ Date _____
[redacted]
ATR Team Leader, Office Symbol

SIGNATURE _____ Date _____
[redacted]
Project Manager, Office Symbol

SIGNATURE _____ Date _____
[redacted]
Architect Engineer Project Manager[1]
Company, location

SIGNATURE _____ Date _____
[redacted]
Review Management Office Representative
Office Symbol

CERTIFICATION OF AGENCY TECHNICAL REVIEW

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

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

SIGNATURE _____ Date _____
[redacted]
Chief, Engineering Division, Office Symbol

SIGNATURE _____ Date _____
[redacted]
Chief, Planning Division, Office Symbol

[1] Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number
18OCT17	Updated TOC	Page i
18OCT17	Updated references	Pg. 3
18OCT17	Update In Kind model efforts	Pg. 4
18OCT17	Updated IEPR information, pursuing exclusion	Pg. and 10
18OCT17	Updated planning models and approval	Pg. 11
18OCT17	Updated ATR Schedule	Pgs. 12
18OCT17	Updated planning models are certified or approved for use	Pg. 13
18OCT17	Updated Team Roster Attachment 1	Pg. 14
18OCT17	Updated DQC Roster	Pg. 15
30JAN18	Updated ATR Required Expertise and Cost Estimate	Pg. 8, Pg. 13