



DEPARTMENT OF THE ARMY
US ARMY ENGINEER DIVISION, SOUTHWESTERN
1100 COMMERCE STREET, SUITE 831
DALLAS TX 75242-1317

REPLY TO
ATTENTION OF

CESWD-PDS-P (1105)

27 APR 2010

MEMORANDUM FOR Commander, Little Rock District

SUBJECT: Review Plan for Springfield, Missouri Watershed Feasibility Study

1. References:

- a. EC 1165-2-209, 31 January 2010, Civil Works Review Policy.
- b. Memorandum, CECW-CP, 30 March 2007, subject: Peer Review Process.
- c. Addendum to Reference 1.b., CECW-CP, September 2008, subject: Supplemental Information for the Peer Review Process.

2. The review plan for the subject study, enclosed, has been reviewed and cleared for approval by the Flood Risk Management Planning Center of Expertise. It has been prepared in accordance with the referenced guidance, and public comments received will be incorporated into the plan as the study progresses. It is anticipated to require Type I Independent External Peer Review.

3. I hereby approve this review plan, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent substantial revisions to this plan or its execution will require new written approval from this office.

4. If you have questions or need further information, please contact Bradley Hudgens, P.E., CESWD-PDP, at (469) 487-7033.

Encl

ANTHONY C. FUNKHOUSER
Colonel, EN
Commanding

CF:
CESWL-PE (Marple)

REVIEW PLAN

**Jordan Creek
Springfield, Missouri**

Feasibility Study

Flood Risk Management and Ecosystem Restoration
Review Plan

Little Rock District

23 March 2010



US Army Corps
of Engineers ®

REVIEW PLAN

Jordan Creek Springfield, Missouri Feasibility Study Project Review Plan

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1. PURPOSE AND REQUIREMENTS

- a. Purpose. This Review Plan defines the scope and level of peer review for the Jordan Creek in Springfield, Missouri Feasibility Study.
- b. References.
 - (1) ER 1105-2-100, Planning Guidance Notebook, 11 Nov 07
 - (2) EC 1105-2-407, Planning Models Improvement Program: Model Certification, 31 May 2005
 - (3) EC 1165-2-209, Civil Works Review Policy, 31 Jan 2010
 - (4) ER 1110-2-12, Quality Management, 30 Sep 2006
 - (5) Jordan Creek, Springfield, Missouri, PMP with QMP, September 2003
 - (6) SWD Quality Management Plan (QMP), March 2003
- c. Requirements. This review plan was developed in accordance with EC 1165-2-209, which establishes the procedures for ensuring the quality and credibility of U.S. Army Corps of Engineers (USACE) decision documents through independent review. The EC outlines three levels of review: District Quality Control, Agency Technical Review, and Independent External Peer Review. In addition to these three levels of review, decision documents are subject to policy and legal compliance review and, if applicable, safety assurance review and model certification/approval.
 - (1) District Quality Control (DQC). DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). It is managed in the home district and may be conducted by staff in the home district as long as they are not doing the work involved in the study, including contracted work that is being reviewed. Basic quality control tools include a Quality Management Plan providing for seamless review, quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. Additionally, the PDT is responsible for a complete reading of the report to assure the overall integrity of the report, technical appendices and the recommendations before approval by the District Commander. The Major Subordinate Command (MSC)/District quality management plans address the conduct and documentation of this fundamental level of review; DQC is not addressed further in this review plan.
 - (2) Agency Technical Review (ATR). ATR is an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of the project/product. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists (RTS), etc.), and may be supplemented by outside experts as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC.
 - (3) Independent External Peer Review (IEPR). 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. IEPR is generally for feasibility and reevaluation studies and modification reports with Environmental Impact Statements (EIS). IEPR is managed by an outside eligible organization (OEO) that is described in Internal Revenue Code Section 501(c) (3), is exempt from Federal tax under section 501(a), of the Internal Revenue Code of 1986; is independent; is free from conflicts of interest; does not carry out or advocate for or against Federal water resources projects; and has experience in establishing and administering IEPR panels. The scope of review will address all the underlying planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project.

- (4) **Policy and Legal Compliance Review.** Decision documents will be reviewed throughout the study process for their compliance with law and policy. These reviews culminate in Washington-level 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 Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100, Planning Guidance Notebook. When policy and/or legal concerns arise during DQC or ATR that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in Appendix H, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration policies, nor are they expected to address such concerns. The home district Office of Counsel is responsible for the legal review of each decision document and signing a certification of legal sufficiency.
- (5) **Safety Assurance Review.** In accordance with Section 2035 of Water Resources Development Act (WRDA) of 2007, EC 1165-2-209 requires that all projects addressing flooding or storm Risk Management undergo a safety assurance review of the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring public health, safety, and welfare. The decision document phase is the initial design phase; therefore, EC 1165-2-209 requires that safety assurance factors be considered in all reviews for decision document phase studies.
- (6) **Model Certification/Approval.** EC 1105-2-407 requires certification (for Corps models) or approval (for non-Corps models) of planning models used for all planning activities. The EC defines planning models 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 EC does not cover engineering models used in planning. Engineering software is being address under the Engineering and Construction (E&C) Science and Engineering Technology (SET) initiative. Until an appropriate process that documents the quality of commonly used engineering software is developed through the SET initiative, engineering activities in support of planning studies shall proceed as in the past. 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.

2. STUDY INFORMATION

- a. **Decision Document.** The proposed decision document is titled; “Springfield, Missouri Watershed Feasibility Study.” The Jordan Creek in Springfield, Missouri study was authorized by the White River Basin, Arkansas and Missouri Comprehensive Study Resolution by Committee on Public Works, U.S. Senate, 11 May 1962. Jordan Creek in Springfield, Missouri, will require an authorized flood risk management project that will have a Safety Assurance Review of its Preconstruction Engineering and Design documents. The level of approval for the decision document is MSC, which is Southwestern Division (SWD); however, the project partnership agreement will be approved by ASA(CW). National Environmental Policy Act (NEPA) documentation, an Environmental Assessment (EA), is anticipated in the feasibility phase.
- b. **Study Description.** The study area encompasses approximately six miles along Jordan Creek, generally centered on the Chestnut Expressway between U.S. Highway 65 to the east and State Highway 13 to the west in the northern half of the city of Springfield. The area is urban, with commercial, industrial, and residential development and some open spaces. Jordan Creek and its north and south upstream branches

flow through undersized covered conduits and open channels within the city limits of Springfield into Wilson Creek. Springfield is currently developing the civic Jordan Valley Park in the central portion of the area. The Park is designed to mix open space and buildings, water and meadows, playgrounds and plazas.

Flooding causes an estimated \$7.8 million in average annual damages. The City has recently sustained flooding of the downtown area in calendar year 2000, 2002, 2005, and 2008. A flood on July 20, 2000, caused more than \$2 million in damages to Springfield public property including damages to roads and parks. The reconnaissance report estimated that a flood risk management project could cost \$76 million, with an estimated Federal cost of \$49,400,000 and an estimated non-Federal cost of \$26,600,000.

This Flood Risk Management and Ecosystem Restoration study is a cost shared feasibility study between the City of Springfield and the Little Rock District Corps of Engineers. The non-Federal sponsor is the City of Springfield, Missouri.

- c. Factors Affecting the Scope and Level of Review. The study analyses, while complex, are well within the scope that is typical for similar studies. Some of the more complex design will be for the channels under buildings, railroad crossings with traffic management plans, a distance of vertical wall channel, and bridges. However, the design will be standard with none of the design considered to be innovative, precedent-setting, unduly complicated, or vulnerable.
- EC 1165-2-209 requires Type I IEPR if the estimated cost of the proposed project is greater than \$45 million. Springfield has an estimated project cost of \$79 million. Type I IEPR is required for this study.
 - EC 1165-2-209 requires Type II IEPR if the proposed project is a Flood Risk Management project where potential hazards pose a significant threat to human life. Springfield will be a Flood Risk Management project. It is anticipated the project will not pose a significant threat to human life. Type II IEPR is not anticipated for this study.

Consequently, the recommendation of the District, with Major Subordinate Command (MSC) concurrence, is that the level of review be ATR and IEPR Type I. Requirement for a Type II IEPR is not anticipated. The final decision on Type II IEPR will depend on the nature of the recommended plan for implementation.

Challenges: The features of the Jordan Creek, Springfield, Missouri study involve environmental, economic, real estate considerations and hydrology and hydraulics (H&H). The primary foundation of the study's challenges were based on the premise that the problem is caused by the influence of two creek systems on each other and the structures within the downtown Springfield area. Hydrology in the Springfield project area is the highest valued commodity next to ecosystem benefits. Ecosystem restoration is an authorized purpose for this study. Environmental and H&H aspects of the study were evaluated using standard tools used for similar applications. These challenges have been overcome through Flood Risk Management and Cost Engineering Centers of Expertise and through review.

Risks: At this time, the project risks are minimal but include interruption of resources (both money and manpower) to the project. There is a risk that the sponsors will not have the required funding for the Feasibility Cost Sharing Agreement. Risks of the project are currently being evaluated as the With-Project Conditions are still in the process of formulation.

- **Human Safety:** It is anticipated the project will not pose a significant threat to human life and the project will have little risk of structural failure for any plan. Project failure is unlikely to cause significant loss of life as it is anticipated that project failure would not cause greater flood damage than would have occurred prior to project construction and the project would still provide some

reduction in flooding. Risk to human safety will be thoroughly and continuously assessed throughout formulation of the with-project conditions.

- Peer review: It is anticipated that the Missouri Governor will not request a peer review by independent experts.
- Controversial Issues: It is also anticipated that no significant public dispute or controversy will result from the Springfield study. Potential controversial issues will be assessed throughout formulation of the with-project conditions.
- Precedent-Setting Methods: Information presented in the Springfield study is based on standard methods for design, cost estimating, hydrology and hydraulics, economics and environmental assessment. The models that were used have been corporately certified.
- Cultural and Environmental: It is anticipated that the study will not have an adverse impact on cultural or environmental resources. Existing environmental conditions have been assessed. Project is not anticipated to have an adverse impact upon critical habitat or any endangered species. Cultural and environmental aspects will be thoroughly and continuously assessed throughout formulation of the with-project conditions.
- Interagency interest: To date, three environmental agency stakeholders have been involved in the Jordan Creek, Springfield, Missouri study that had significant interest. Cooperating Agencies include US Environmental Protection Agency, US Fish and Wildlife Service and Missouri Department of Natural Resources. These stakeholders are involved in team meetings and provide official comments for consideration in the study. The environmental stakeholders recognize the value of the pristine ecosystem in the project area, but also understand the need for a reliable flood risk management project. This study includes ecosystem restoration.

d. In-Kind Contributions. The expected in-kind contributions will involve large portions of the efforts in the technical fields and will require extensive review by DQC and ATR teams. The expected in-kind contributions to be provided by the sponsor and stakeholders are noted below.

(1) Hydraulics & Hydrology (H&H): The H&H will be performed by the City of Springfield (Local Sponsor) and will be completed compliance with the required Corps Manuals and Regulations. Extensive reviews of Local Sponsor H&H submittals have been conducted by the Corps providing a high level of Quality Control throughout the study process.

▪ Hydrologic Studies:

(a) Existing Conditions. This work is to be done by the city of Springfield. Hypothetical flows from TP-40 & 49 (1, 2, 5, 10, 25, 50, 100, 500-YR, SPF) will be determined at the Feasibility level of detail.

(b) Modified Conditions. Hypothetical flows will be modified based on the plans of improvement. These will be determined for each alternative.

▪ Hydraulic Studies:

(a) Existing Conditions. Elevations will be determined from about 1000 feet downstream of Jordan Creek's confluence with Wilson Creek and from the mouth of Jordan (North and South Branches) and Fassnight Creeks to the point that 1.5 square miles will be developed using a HEC-RAS or similar model.

(b) Modified Conditions. Channel modification will be modeled using HEC-RAS or similar model for the three alternatives.

▪ Final Design of Selected Alternative. The alternative selected as the recommended plan will be designed to a level of detail sufficient to proceed with plans and specifications. A flood plain for the study reach will be delineated.

▪ Hydrology & Hydraulic Documentation. The Hydrology & Hydraulic write-up will be provided as a complete chapter to the Engineering Appendix.

- (2) Hazardous, Toxic, and Radioactive Waste (HTRW) : The HTRW will be performed by the City of Springfield (Local Sponsor) and will be completed in compliance with the required Environmental Protection Agency (EPA) and the Missouri Department of Natural Resources (MDNR) policies and Regulations. Extensive reviews of HTRW documentation have been conducted by the EPA and MDNR providing a high level of Quality Control throughout the study process.
- Local Sponsor (LS): LS must identify the existence and extent of any HTRW regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), that may exist in area required for construction, operation, and maintenance of the project. Also, the LS have financial responsibility for all necessary cleanup and response costs of any hazardous substances regulated under CERCLA.
 - EPA: The EPA is assisting the City of Springfield with identifying the existence and extent of HTRW in the study area. The EPA will prepare documentation of any identified HTRW sites and will coordinate the appropriate products for review within their Agency.
- (3) Cultural Resources Coordination: The Local Sponsor (LS) in coordination with Missouri State University will perform all activities associated with the assessment and documentation of the cultural impacts, which should be considered in the feasibility study. The report will present the results of archaeological and historical investigations in compliance with their responsibilities under the National Historic Preservation Act (NHPA). The study will include in depth historical research, mapping, architectural evaluations and systematic archaeological field methods to identify historic properties and cultural resources within the study area.
- (4) Water Quality Monitoring: The Local Sponsor (LS) conducted a water quality monitoring program for the study area during the initial phase of the study.

3. AGENCY TECHNICAL REVIEW (ATR)

- a. General. ATR for decision documents covered by EC 1165-2-209 are managed by the appropriate Planning Center of Expertise (PCX) with appropriate consultation with the allied Communities of Practice such as engineering and real estate. The lead PCX for this study is Flood Risk Management (FRM). FRM will coordinate the review with the appropriate PCX. Cost estimates and construction schedule efforts will be coordinated with Cost Engineering Center at the Walla Walla District.

The ATR shall ensure that the product is consistent 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 the results in a reasonably clear manner for the public and decision makers. Members of the ATR team will be from outside the home district. The ATR lead will be from outside the home MSC. The leader of the ATR team will participate in milestone conferences and the Civil Works Review Board (CWRB) to address review concerns.

- b. Products for Review. The products to be reviewed in this study include interim technical products to be prepared in advance of the major study milestones, to include the Feasibility Scoping Meeting (FSM) and Alternative Formulation Briefing (AFB); as well as the Draft Report (including supporting documentation) and the Final Report (including supporting documentation). Interim technical products include, but not limited to, interim Feasibility Report, Review Plan, Preliminary Environmental Assessment, H&H without project report and without project economics. Additional Issue Resolution Conferences (IRC) may be required throughout the study when significant policy issues arise. If these require documentation for major decision making, then additional ATR of this documentation may be required; however, no IRCs are expected at this time. This quality control will occur prior to the

decision event so that a firm technical basis for making decisions will be established. As a result, the decision event is free to address critical outstanding issues and set the direction for the next step of the study.

The PCX will provide the following activities:

- Coordinate the establishment of the ATR Team. The Team Leader will be an individual from outside of Southwestern Division, and the team will be from outside of the home district. The Team Leader and one to two team members will meet with District staff to review project and discuss major assumptions, analyses, and calculations.
- Coordinate and manage ATR in advance of the Feasibility Scoping Meeting (May 18, 2010), the Alternative Formulation Briefing tentatively scheduled for April 17, 2012 and the Final Feasibility Review Conference tentatively scheduled for February 11, 2013.
- The district will supply public review comments to the ATR team along with appropriate documents. The District will be responsible for all legal reviews of the Feasibility Report.
- Comments will be provided to the PDT in DrChecks for the ATR.
- This project will require congressional authorization and will require coordination from the Walla Walla District Cost Engineering Directory of Expertise.

c. Required ATR Team Expertise.

- (1) Plan Formulation: Team member should have extensive experience in the Corps planning process and be knowledgeable of Corps policies and guidelines. He or she should be familiar with flood risk management projects, studies and agreements.
- (2) Hydrology and Hydraulics: Team member should be an expert in the field of hydrology and hydraulics, with a thorough understanding of flood risk management and modeling. Specific experience should include urban creek H&H analysis and models for the Ozark region. Team member shall have experience with HEC & HEC-RAS. It is strongly recommended that the team member be a registered or licensed professional engineer.
- (3) Economics: Team member should have experience in Flood Risk Management and ecosystem restoration projects and a thorough understanding of benefit/cost analyses to include NED, RED, and Other Social Effects for Flood Risk Management interests. Team member should be familiar with cost estimating for similar projects using MCACES. These efforts will be coordinated with Cost Engineering Center at the Walla Walla District.
- (4) Cost Engineer: Team member should have experience with Flood Risk Management and ecosystem restoration projects. Team member should be familiar with cost estimating for similar Flood Risk Management and ecosystem restoration projects using MCACES. These efforts will be coordinated with Cost Engineering Center at the Walla Walla District.
- (5) Environmental: Team members should be familiar with the NEPA and HTRW process for similar studies and projects. Experience should include knowledge of Flood Risk Management, HTRW, Cultural Resources and Ecosystem Restoration. The team member should be a subject matter expert on application and documentation of the NEPA process. Team member must be experienced in public involvement for controversial studies and must have knowledge of social effects of civil works projects.
- (6) Real Estate: Team member should be experienced in Federal civil works real estate laws, policies and guidance.

- (7) Geotech: Team member should be an expert in the field of Geotech. Experience should include knowledge of flood risk management and ecosystem restoration projects. It is strongly recommended that the team member be a registered or licensed professional engineer.
- d. 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 in or 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 coordination, and lastly the agreed upon resolution. The ATR team will prepare a Review Report which includes a summary of each unresolved issue; each unresolved issue will be raised to the vertical team for resolution. Review Reports will be considered an integral part of the ATR documentation and shall:

- 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; 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 HQUSACE for resolution and the ATR documentation is complete. Certification of ATR should be completed, based on work reviewed to date, for the AFB, draft report, and final report. A sample certification is included in ER 1110-2-12.

4. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

- a. General. IEPR is conducted for decision documents if there is a vertical team decision (involving the district, MSC, PCX, and HQUSACE members) that the covered subject matter meets certain criteria (described in EC 1165-2-209) where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside the USACE is warranted. IEPR is coordinated by the appropriate PCX and managed by an Outside Eligible Organization (OEO) external to the USACE. IEPR panels shall evaluate whether the interpretations of analysis and conclusions based on analysis are reasonable. To provide effective review, in terms of both usefulness of results and credibility, the review panels should be given the flexibility to bring important issues to the attention of decision makers; however, review panels should be instructed to not make a recommendation on whether a particular alternative should be implemented, as the Chief of Engineers is ultimately responsible for the final decision on a planning or reoperations study. IEPR panels will accomplish a concurrent review

that covers the entire decision document and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. Whenever feasible and appropriate, the office producing the document shall make the draft decision document available to the public for comment at the same time it is submitted for review (or during the review process) and sponsor a public meeting where oral presentations on scientific issues can be made to the reviewers by interested members of the public. An IEPR panel or OEO representative will participate in the CWRB.

- b. Decision on IEPR. The Little Rock District, with concurrence from the Southwestern Division, has concluded that the Jordan Creek in Springfield, Missouri Report does require IEPR as defined in the WRDA of 2007 (Public Law 110-114), and EC 1165-2-209.
- c. Products for Review. It is expected that an Environmental Assessment will be the required NEPA documentation for review. An Environmental Impact Statement (EIS) is not anticipated to be required. Close coordination with the sponsor and previous public meetings have indicated that there is no significant public dispute with regard to the proposed project. Similarly, no significant public dispute is anticipated with regards to cultural or archeological interests. Methods and models used in this study are typical of all Corps flood Risk Management studies with little room for interpretation and are not expected to change prevailing practices on this or future flood Risk Management studies.
- d. Required IEPR Panel Expertise.
IEPR Type I:
 - Economist – the panel member should have experience in flood risk management and ecosystem restoration projects and a thorough understanding of benefit/cost analyses to include flood risk management interests.
 - Cost Engineer: the panel member should have experience with Flood Risk Management and ecosystem restoration projects. Team member should be familiar with cost estimating for similar Flood Risk Management and ecosystem restoration projects.
 - Environmental: the panel member should be familiar with the NEPA and HTRW process for similar studies and projects. Experience should include knowledge of Flood Risk Management, HTRW, Cultural Resources and Ecosystem Restoration.
- e. Documentation of IEPR. DrChecks review software will be used to document IEPR comments and aid in the preparation of the Review Report. Comments should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 3. The OEO will be responsible for compiling and entering comments into DrChecks. The IEPR team will prepare a Review Report that will accompany the publication of the final report for the project and shall:
 - 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; and
 - Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

The final Review Report will be submitted by the IEPR panel no later than 60 days following the close of the public comment period for the draft decision document. The report will be considered and documentation prepared on how issues were resolved or will be resolved by the District Commander before the district report is signed. The recommendations and responses will be presented to the CWRB by the District Commander with an IEPR panel or OEO representative participating, preferable in person.

5. MODEL CERTIFICATION AND APPROVAL

- a. General. The use of certified or approved models for all planning activities is required by EC 1105-2-407. This policy is applicable to all planning models currently in use, models under development and new models. The appropriate PCX will be responsible for model certification/approval. The goal of certification/approval is to establish that planning products are theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. The use of a certified or approved model does not constitute technical review of the planning product. Independent review of the selection and application of the model and the input data and results is still required through conduct of DQC, ATR, and, if appropriate, IEPR. Independent review is applicable to all models, not just planning models. Both the planning models (including the certification/approval status of each model) and engineering models used in the development of the decision document are described below:
- b. Planning Models. The following planning models are anticipated to be used: The models to be employed in the Jordan Creek in Springfield, Missouri Feasibility Report have either been developed by or for the USACE. More specifically, the certified models to be employed in the completion of this Feasibility Study are:
- HEC-FDA v1.2.4: This model, developed by the Corps' Hydrological Engineering Center, will assist the PDT in applying risk analysis methods for flood Risk Management studies as required by, EM 1110-2-1419. This program:
 - Provides a repository for both the economic and hydrologic data required for the analysis
 - Provides the tools needed to understand the results
 - Calculates the Expected Annual Damages and the Equivalent Annual Damages
 - Computes the Annual Exceedence Probability and the Conditional Non-Exceedence Probability
 - Implements the risk-based analysis procedures contained in EM 1110-2-1619
 - IWR-Planning Suite v1.0.11.0: This model does incremental cost analysis which helps to assign a cost to the habitat units gained by each implementable practice. The analysis will help define which practices are most cost effective which will help in developing alternatives. There is also an additional module for Multi Criteria Decision Analysis that will be used in the decision making.

HEC-FDA v1.2.4 and IWR-Planning Suite v1.0.11.0 are both certified models. All identified planning models will be coordinated through the PCX as needed. Project schedules and resources will be adjusted to address this process for certification and PCX coordination.

- c. Engineering Models. The following engineering models are anticipated to be used:
- HEC-RAS 4.0. The certified Hydrologic Engineering Center's River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations.
 - MicroStation: This software is used primarily for creating construction drawings including advanced modeling and rendering features. It can provide specialized environments for architecture, civil engineering, mapping, or plant design, among others.
 - MII: This is a cost estimating model that was developed by Building Systems Design Inc. The Army Corps of Engineers began using this model in 1989.
 - HEC-RAS: The function of this certified model is to complete one-dimensional hydraulic calculations for a full network of natural and manmade channels. HEC-RAS major capabilities are:
 - User interface
 - Hydraulic Analysis
 - Data storage and Management
 - Graphics and reporting
 - River Morph

- Geomorphic study
- Utaxas4
 - Slope stability Analysis

6. REVIEW SCHEDULES AND COSTS

- a. ATR Schedule and Cost. Each section of the draft EA will be reviewed as the draft section is completed. These sections include Purpose and Need, Alternatives Considered, Affected Environment, and Environmental Consequences. Each section of the report will be reviewed as the draft section is completed. These sections include the description of alternatives, H&H appendix, and Flood Risk Management Considerations. The study schedule includes a 30-day public review of the draft EA, internal quality control and quality assurance reviews, and policy compliance reviews.
- The first ATR will be completed in FY2010.
 - Total cost for the ATR effort is budgeted at \$110,000.
 - The lead PCX for this study is Flood Risk Management.
- b. IEPR Schedule and Cost. The components of the Independent External Peer Review Plan were developed pursuant to the requirements of EC 1165-2-209. The peer review process is projected to start as disciplines complete milestone tasks. Contact will be made with the Planning Centers of Expertise in flood risk management and environmental restoration.
- The estimated project cost is >\$45 million which requires a Type I IEPR as defined in EC 1165-2-209. The lead PCX for this study is Flood Risk Management (FRM).
 - EC 1165-2-209 requires Type II IEPR if the proposed project is a Flood Risk Management project where potential hazards pose a significant threat to human life. Springfield will be a Flood Risk Management project. It is anticipated the project will not pose a significant threat to human life. Type II IEPR is not anticipated for this study.
 - Total cost for the IEPR effort is budgeted at \$480,000.

Type I IEPR for this project is anticipated as defined in the WRDA of 2007 (Public Law 110-114), and EC 1165-2-209. IEPR will be coordinated by the appropriate PCX and managed by an Outside Eligible Organization (OEO) external to the USACE. External review costs are included in the PMP's estimated study costs. Type II IEPR is not anticipated for this study.

- c. Model Certification/Approval Schedule and Cost. The HEC-RAS planning model that will be used in the study has been approved for use. The input datasets and use of the model will be reviewed as part of the ATR effort as discussed above.

Jordan Creek, Springfield, Missouri Review and Approval Schedule	
TASK	COMPLETION DATE
Coordination Meeting (SWL/City of Springfield, Missouri, EPA, Missouri Department of Natural Resources)	Mar 15-17, 2010
Review Plan	Mar 19, 2010
District Quality Control	Mar 15-21, 2010
Agency Technical Review	Mar 22-April 2, 2010
SWL Response to ATR Comments & Revise Docs	Apr 9, 2010
FSM Package to HQ for 35-day Review	April 9-May 14, 2010
Feasibility Scoping Meeting	May 18, 2010
Feasibility Report Public Meeting	Oct 9-11, 2012
District Quality Control	Dec 22-Jan 23, 2012
Agency Technical Review	Jan 24-Feb 13, 2012
Alternative Formulation Board	Apr 17, 2012
District Quality Control	Apr 18-May 18, 2012
Agency Technical Review	May 19-June 4, 2012
Independent External Peer Review	Jul 20-Aug 30, 2012
Draft Report	Sept 12, 2012
Public Comment Period (30 days)	Sept 24-Oct 29, 2012
IEPR Report from Panel	Dec 10, 2012
District Quality Control	Dec 11-24, 2012
Agency Technical Review	Jan 2-15, 2012
Final Report	Feb 11, 2013

d. Execution Plan

- (1) Reviews' Rotation: PCX shall avoid repeated use of the same reviewer on multiple studies or reports unless essential and comparable expertise cannot be obtained elsewhere.
- (2) Reviewers' Conflicts: PCX shall ensure that reviewers serving as Federal Employees (including special government employees) comply with applicable Federal ethics requirements. In selecting reviewers who are not Federal government employees, PCX shall adopt or adapt the National Academy of Sciences' policy for committee selection with respect to evaluation the potential for conflicts (e.g., those arising from investments; agency, employer, and business affiliations; grants, contracts and consulting income).
- (3) Reviewer's Privacy: Peer reviewers' name, credentials and affiliations will be disclosed but will comply with the requirements of the Privacy Act.
- (4) Reviewer's Compensation: Reviewer will be paid labor and any necessary travel and per diem expenses in accordance with their contract with the Outside Eligible Organization (OEO).
- (5) Reviewers' Charge: The PCX will prepare the reviewers' charge.
- (6) Confidentiality: Review shall be conducted in a manner that respects confidential business information and intellectual property.
- (7) Choice of Review Mechanism: The PCX will select reviews according the complexity and importance of this project for both the ATR and the IEPR.
- (8) Reviewers Access to Information: PCX shall provide reviewers with sufficient information, including background information about key studies or models, to enable them to understand the data, analytic procedures, and assumptions used to support the key findings or conclusion. Reviewers shall be informed of applicable access, objectivity, reproducibility and other quality standards under the federal

- laws governing information access and quality.
- (9) Disclaimer: Information distributed for review must include the following disclaimer: “This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy.”
 - (10) Public Comments: Public comments will be accepted and are encouraged through the use of public meetings with access to documents. The PCX will be provided with comments collected at the public meetings. Time limits will be set on public participation to avoid delaying USACE activities.
 - (11) Transparency: The PCX shall notify reviewers in advance regarding the extent of disclosure and attribution planned by USACE. The PCX shall instruct the ATR leader or the OEO to prepare a Review Report that shall:
 - Disclose the names of the reviewers, their organization 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
 - Include a verbatim copy of each reviewer’s comments (either with or without attributions), or represent the views of the group as a whole, including and disparate and dissenting views.

7. PUBLIC PARTICIPATION.

As part of the NEPA public involvement process, all relevant current information and documentation will be made available for public comment. The Little Rock District will make all documents and public comments available for public review via website. All the public involvement requirements for NEPA will continue to be met. Proceedings from all public meetings or any other public involvement meetings will be posted on the project website.

The public can provide comments at anytime during the study process to the study manager at the following address:

U.S. Army Corps of Engineers, Little Rock District
ATTN: Springfield, Missouri Study Manager, CESWL-PE
P.O. Box 867
Little Rock, AR, 72203-0867

In addition, the public will have an opportunity to review and provide comments on the draft environmental assessment for 30 days occurring approximately in April 2012.

All published reports can be found at the Little Rock District’s website (www.swl.usace.army.mil) as well as directions for obtaining any information that may be disclosed under the Freedom of Information Act (Public Law 89-554, 80 Stat. 383; amended 1996, 2002, 2007).

8. PCX COORDINATION

The lead PCX for this study is Flood Risk Management (FRM). FRM will coordinate the review with the appropriate PCXs. Review plans for decision documents and supporting analyses outlined in EC 1165-2-209 are coordinated with the appropriate Planning Center(s) of Expertise (PCX) based on the primary purpose of the basic decision document to be reviewed. Cost estimates and construction schedule efforts will be coordinated with Cost Engineering DX at the Walla Walla District.

9. MSC APPROVAL

The Southwestern Division Commander is responsible for approving the review plan. The commander's approval reflects vertical team input (involving district, MSC, PCX, and HQUSACE members) as to the appropriate scope and level of review for the decision document. Like the PMP, the review plan is a living document and may change as the study progresses. Changes to the review plan should be approved by following the process used for initially approving the plan. In all cases, the MSC will review the decision on the level of review and any changes made in updates to the project. During study, the review plan will undergo updates when the alternative plans are identified and a preferred plan is identified.

10. REVIEW PLAN POINTS OF CONTACT

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

- U.S. Army Corps of Engineers, Little Rock District
ATTN: Jordan Creek, Springfield, Missouri Project Manager, CESWL-PE
P.O. Box 867
Little Rock, AR, 72203-0867

- U.S. Army Corps of Engineers, Southwestern Division
ATTN: Chief of Planning & Policy Division, CESWD-PDS-P
1100 Commerce St.
Dallas, TX. 75242

- U.S. Army Corps of Engineers ,
Flood Risk Management Planning Center of Expertise
ATTN: FRN-PCX Program Manager, CESPDPDS-P
1455 Market Street
San Francisco, CA 94103-1398

ATTACHMENT 3: 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
CSDR	Coastal Storm Risk Management	NHPA	National Historic Preservation Act
CWRB	Civil Works Review Board	O&M	Operation and maintenance
DPR	Detailed Project Report	OMB	Office and Management and Budget
DQC	District Quality Control	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DX	Directory of Expertise	OEO	Outside Eligible Organization
EA	Environmental Assessment	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PED	Preconstruction Engineering and Design
EPA	Environmental Protection Agency	PMP	Project Management Plan
ER	Ecosystem Restoration	PL	Public Law
FDR	Flood Risk Management	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	RTS	Regional Technical Specialist
HQUSACE	Headquarters, U.S. Army Corps of Engineers	SAR	Safety Assurance Review
HTRW	Hazardous, Toxic, and Radioactive Waste	SPD	South Pacific Division
IEPR	Independent External Peer Review	SWD	Southwestern Division
ITR	Independent Technical Review	SWL	Little Rock District
LRR	Limited Reevaluation Report	SWT	Tulsa District
LS	Local Sponsor (Non-Federal Sponsor)	USACE	U.S. Army Corps of Engineers
MSC	Major Subordinate Command	WRDA	Water Resources Development Act