DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, NORTHWESTERN DIVISION
PO BOX 2870
PORTLAND OR 97208-2870

REPLY TO
ATTENTION OF

CENWD-PDD

19 DEC 2012

MEMORANDUM FOR Commander, Kansas City District (CENWK-PM-PF)

SUBJECT: Review Plan (RP) Approval for the Kansas Citys, Missouri and Kansas Flood Risk Management Feasibility Report

1. Reference EC 1165-2-209, Civil Works Review Policy, 31 January 2012.

2. The enclosed RP for the Kansas Citys, Missouri and Kansas Flood Risk Management Feasibility Report has been prepared in accordance with the reference guidance.

3. The RP has been revised to incorporate Northwestern Division review comments.

4. The Flood Risk Management Planning Center of Expertise has reviewed the RP and recommends it for approval.

5. I hereby approve this RP, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this RP or its execution will require review by CENWD-PDD and approval by this office.

6. The RP should be posted to the internet and available for public comment.

7. Please contact Jeremy Weber, at 503-808-3858, if you have further questions regarding this matter.

Encl

ANTHONY C. FUNKHOUSER, P.E.
COL, EN
Commanding

CF:
CENWK-PM-PF, Lynn

# PROJECT REVIEW PLAN

## Kansas Citys, Missouri and Kansas
## Flood Risk Management
## Feasibility Study

## Kansas City District

**MSC Approval Date: XX**
**Last Revision Date:** 11 Dec 2012

US Army Corps
of Engineers ®

**REVIEW PLAN**

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## 1. PURPOSE AND REQUIREMENTS

**a. Purpose.** This Review Plan defines the scope and level of review for the feasibility report on the Kansas Citys, Missouri and Kansas, Flood Risk Management Feasibility Study.

**b. References**

(1) Engineering Circular (EC) 1165-2-209, Civil Works Review Policy, 31 Jan 2010
(2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
(3) Engineering 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) Kansas City Levees Project Management Plan, originally Sep 2000, latest update Aug 2012
(6) Kansas City District Quality Management System Program Management Plan, 3 Jan2011
(7) Northwestern Division Quality Management System Program Management Plan, 28 Sep 2010

**c. Requirements.** This review plan was developed in accordance with EC 1165-2-209, 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 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

## 2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center (RMC), depending on the primary purpose of the decision document. The RMO for the review effort described in this Review Plan is the Flood Risk Management PCX.

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. The RMO will be the Risk Management Center in future implementation phases and if/when Type II IEPR begins.

## 3. STUDY INFORMATION

**a. Decision Document.** This review plan is for Phase 2 of the Kansas Citys, Missouri and Kansas Feasibility Study (Kansas City Levees). The project will produce the Final Feasibility Report. Phase 1 of this study produced the Interim Feasibility Report in 2006. The Final Feasibility Report will document the recommended plan for the remaining two units of the system not included in the Interim Report. The Final Report will require MSC, HQUSACE, and Chief of Engineers approval and Congressional authorization to move forward to a cost shared design and construction project. The Interim Feasibility Report included an Environmental Impact Statement (EIS) that addressed the

Phase 2 study area. The Final Report will not include environmental documentation.

**b. Study/Project Description.** The U.S. Army Corps of Engineers Kansas City District (CENWK) along with local project sponsors are conducting a feasibility study of the existing flood risk management project for the Kansas City metropolitan area. This is a single purpose study focusing on Flood Risk Management. The entire metropolitan system of seven flood risk management (levee) units withstood the Missouri River Flood of 1993, but some elements of the system were seriously challenged as the flood crested. This event raised a concern that the levees may provide less than the authorized benefits for which they were designed.

The study uses a two-phase approach to performing the feasibility study. The overall system of protective works under study (both phases) is within the immediate metropolitan area and vicinity of Kansas City, Missouri, and Kansas City, Kansas, along the Missouri and Kansas Rivers. The existing works consist principally of levees, floodwalls, bridge and approach alterations, and channel improvement and alteration. The system extends along the lower 9.5 miles of the Kansas River and on the Missouri River from 6.5 miles upstream to 9.5 miles downstream of the mouth of the Kansas River. The 32 square mile study area covers the heavily industrialized floodplains of the two rivers.

Phase 1 (completed Dec 2006) developed an Interim Feasibility Report which recommended improvements to increase the performance and reduce the flood risk of four of the seven levee units within the Kansas Citys system. These units included the Argentine Unit, the North Kansas City Unit, the East Bottoms Unit, and the Fairfax-Jersey Creek Unit. A fifth levee unit, the Birmingham Unit, was determined to meet the authorized level of performance assuming continued adequate operations and maintenance efforts.

Phase 2 (underway now and the subject of this RP) comprises the two downstream units of the Kansas River portion of the system (Armourdale and Central Industrial District (CID) Units) within Jackson County, Missouri and Wyandotte County, Kansas. Communities (or portion thereof) within this study area include Kansas City, Missouri, and Kansas City, Kansas. The Final Feasibility Report will address recommendations for increasing the structural and geotechnical reliability and raising the height of these two units. It is expected that the total cost of the recommendations will be greater than $250 million.

**c. Factors Affecting the Scope and Level of Review.** This section points out significant elements of the project that will affect the review of the decision document.

- The subject units of this study are part of a larger metropolitan flood risk management system. A consistent study approach and uniform level of flood risk management benefit throughout the system should be maintained.
- The Central Industrial District Unit comprises land area within two States, the total area of which is subject to flooding from both the Kansas and Missouri Rivers.
- Residual risk: The project team has emphasized residual risk of property damage and loss of life associated with levees and floodwalls, and will continue to do so.
- Life Safety Risk: There is a significant risk to loss of life due to non-performance of the existing and proposed project.
    - The areas found within each levee unit are composed of large commercial and industrial land uses and smaller residential populations. Should a flood event occur during business hours, loss of life could be higher, but significant life safety threat exists for

night time events.
    - Life safety may be affected by any one of these flood related variables: depth of water, velocity, proximity of population, warning time, and evacuation planning. The Kansas and Missouri Rivers are both gauged and regularly forecasted, providing up to several days warning time for large flood events. The study area has multiple evacuation routes sufficient to allow the population to exit the floodplain as long as warnings are promptly heeded.
    - The District Chief of Engineering has reviewed and concurs with this assessment of life safety risk. Further review and assessment of life safety risk will be conducted in future design phase efforts and will be a primary consideration of IEPR.
- Construction risk: The modification of existing flood risk management features must maintain the performance of the feature, and all adjacent components, throughout the construction period. Emergency response plans must be prepared and executed properly as needed.
- Neither the Governor of Kansas nor Missouri has, and likely will not, make a request for a peer review by independent experts. The project has not yet and is not anticipated to cause a public dispute. Significant interagency interest is not expected.
- No novel methods or materials are proposed to be implemented. The report is not anticipated to contain influential scientific information or be a highly influential scientific assessment.
- There are no identified scarce or unique cultural, historical, or tribal resources in the study area. The project area is a highly urbanized area and the implementation of proposed modifications is not anticipated to impact fish and wildlife resources or habitats.
- This feasibility report is not anticipating a design that will require redundancy. Due to the dynamic nature of flooding events, flood risk management projects must be resilient and robust. No unique construction sequencing is anticipated.

**d. In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to DQC, ATR, and IEPR. The sponsors have not provided, nor plan to provide, any in-kind products.

## 4. DISTRICT QUALITY CONTROL (DQC)

All decision documents (including supporting data, analyses, etc.) shall undergo DQC. DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

**a. Documentation of DQC.** The DQC team used the standard USACE tool and internet-based DrChecks to comment, evaluate, and resolve issues identified during reviews at all levels. The review by the DQC team will be available to the ATR team to reference.

**b. Products to Undergo DQC.** The DQC team reviewed the alternatives, recommendations, and cost estimates in the final screening of the planning process. DQC will continue with final economic analysis, supporting appendices, and the feasibility report documentation.

**c. Required DQC Expertise.** The following disciplines are involved in DQC:

(1) Structural
(2) Geotechnical
(3) Economics
(4) Plan Formulation
(5) Civil / Site Engineer
(6) Cost Estimating

## 5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all decision documents (including supporting data, analyses, 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 and conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. The ATR team lead will be from outside the home MSC. The ATR for this study has been on-going and is currently led by the Louisville District with additional members added from other Districts as needed.

**a. Products to Undergo ATR.** This section lists the specific products that will undergo ATR.

(1) Plan formulation process and engineering analysis and Alternative Formulation Briefing (AFB) Document
(2) Selected plan cost estimate
(3) Draft and Final feasibility reports

**b. Required ATR Team Expertise.** The following disciplines are represented on the ATR team.

| ATR Team Members/Disciplines | Expertise Required |
|---|---|
| ATR Lead – May be combined with Plan Formulation | The ATR lead should be a senior professional with extensive experience in preparing Civil Works decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc). |
| Plan Formulation | The Planning reviewer should be a senior water resources planner with experience in current flood risk management planning and policy guidance, and have experience in plan formulation for flood risk management projects. |
| Economics | Team member will have extensive experience in related flood risk management projects, and have a thorough understanding of HEC-FDA. This team member should be able to provide guidance on cost effective / incremental cost analysis (CE/ICA) and trade-off analysis. This team member can also serve as the risk |

| | |
|---|---|
| | reviewer. |
| Geotechnical Engineering | Team member will have extensive experience in levee & floodwall design, post-construction evaluation, and rehabilitation. This is a critical ATR team member, and a certified professional engineer is recommended with a minimum of 10 years experience. |
| Risk Analysis | The risk analysis reviewer will be experienced with performing and presenting risk analyses in accordance with ER 1105-2-101 and other related guidance, including familiarity with how information from the various disciplines involved in the analysis interact and affect the results. |
| Civil Engineering | Civil / Site / Utilities / Relocations: This team member will have experience in utility relocations, positive closure requirements, pump station analysis, and internal drainage for levee construction. A certified professional engineer is suggested. |
| Structural Engineering | Team member will have a thorough understanding of levee, flood wall, and retaining wall design, and structures typically associated with levees (pump stations, gatewell structures, utility penetrations, stoplog & sandbag gaps, and other closure structures). Experience with internal drainage structures similar to flap gates is preferred. A certified professional engineer is recommended. |
| Cost Engineering | Team member will be familiar with cost estimating for similar projects. Team member will review only on the selected plan, not the entire suite of formulated alternatives, as presented by the PDT in the latest version of MCACES, which is MII. Team member will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. These efforts will be coordinated with Cost Engineering Directory of Expertise at the Walla Walla District. |
| Real Estate | Team member should be familiar with necessary components in a real estate plan for a flood risk management project involving structural and nonstructural approaches. An understanding of the difference of a gross appraisal from screening methods is essential for the plans formed. |
| Environmental/NEPA | The team member will be familiar with environmental laws, policies, requirements and procedures, habitat assessment analysis, and the impacts typical of large flood risk management on the natural environment. |
| Other disciplines/functions | The team leader will make a decision on the need for other review disciplines. The typical disciplines that may need ATR in projects of this type include Water Quality, Cultural Resources, Hazardous/Toxic Waste, and Legal. Legal review is not under the purview of the ATR Team Leader but is instead responsible to the Corps of Engineers Office of Counsel chain-of-command. |

**c. Documentation of ATR.** DrChecks review software has been and will continue to 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 order to then assess whether further specific concerns may exist.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either 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 prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

- Identify the document(s) reviewed and the purpose of the review;
- Disclose the names of the reviewers, their organizational affiliations, and include a short paragraph on both the credentials and relevant experiences of each reviewer;
- Include the charge to the reviewers;
- Describe the nature of their review and their findings and conclusions;
- Identify and summarize each unresolved issue (if any); and
- Include a verbatim copy of each reviewer's comments (either with or without specific attributions), or represent the views of the group as a whole, including any disparate and dissenting views.

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

## 6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, 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 1165-2-209.

- 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.** Based on the risk to life safety of the existing projects and the magnitude of the expected modification recommendations, Type I IEPR was determined necessary and has already been initiated for this study. A contract was coordinated through the PCX and awarded to an Outside Eligible Organization (Batelle). The IEPR panel has been identified, conducted a project site visit on 2 November 2012, and is currently reviewing engineering analyses, and preliminary report information and pre-AFB documentation. The planning team anticipates that Type II IEPR will be required during PED phase. Type II IEPR Safety Assurance considerations should be addressed during Type I IEPR per EC 1165-2-209 para 2.c.(3).

**d. Products to Undergo Type I IEPR.** The pre-AFB submittal documentation and final draft feasibility report will undergo Type I IEPR.

**e. Required Type I IEPR Panel Expertise.** The established IEPR panel includes five individuals representing expertise in Civil Works planning, biology/ecology, hydrologic/hydraulic engineering, geotechnical/structural engineering, and civil engineering/construction.

**f. Documentation of Type I IEPR.** The IEPR panel was selected, and is managed by, Batelle (an Outside Eligible Organization (OEO) per EC 1165-2-209, Appendix D). Panel comments will be compiled by

the OEO and 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 4.d above. The OEO will prepare a final Review Report that will accompany the publication of the final decision document 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 OEO no later than 60 days following the close of the public comment period for the draft decision document. USACE shall consider all recommendations contained in the Review Report and prepare a written response for all recommendations adopted or not adopted. The final decision document will summarize the Review Report and USACE response. The Review Report and USACE response will be made available to the public, including through electronic means on the internet.

## 7. POLICY AND LEGAL COMPLIANCE REVIEW

All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy, and warrant approval or further recommendation to higher authority by the home MSC Commander. 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 DIRECTORY OF EXPERTISE (DX) REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering DX, located in the Walla Walla District. The DX will assist in determining the expertise needed on the ATR team and Type I IEPR team (if required) and in the development of the review charge(s). The DX will also 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 (if required). .

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 (if required).

**a. Planning Models.** The following planning models are anticipated to be used in the development of the decision document:

| Model Name and Version | Brief Description of the Model and How It Will Be Applied in the Study | Certification / Approval Status |
|---|---|---|
| HEC-FDA 1.2.4 | The Hydrologic Engineering Center's Flood Damage Reduction Analysis (HEC-FDA) software provides the capability to perform an integrated hydrologic engineering and economic analysis during the formulation and evaluation of flood risk management plans. HEC-FDA is designed to assist USACE PDT members in using risk analysis procedures for formulating and evaluating flood risk management measures (EM 1110-2-1619, ER 1105-2-101). | Certified. |

**b. Engineering Models.** The following engineering models are anticipated to be used in the development of the decision document, and approval from Hydraulics, Hydrology, and Coastal Engineering Community of Practice (HHC CoP) (SharePoint site at https:// kme.usace.army.mil/NTCT/HHC/default.aspx):

| Model Name and Version | Brief Description of the Model and How It Will Be Applied in the Study | Approval Status |
|---|---|---|
| HEC-1 version 4.1 | The PDT used the USACE Hydrologic Engineering Center's model to reevaluate peak flows of the Kansas River at specified locations, screen out detention basins as possible features in alternatives as a means as reducing peak discharges and resultant water surface elevations; use for the load points to HEC-RAS existing conditions analysis and proposed improvements | HH&C CoP Allowed for Use |
| HEC-RAS 4.0 | The PDT used the USACE Hydrologic Engineering Center's River Analysis System to establish peak water surface elevations for a range of probabilities for existing and proposed alternatives, input HEC-FDA (see below). | HH&C CoP Preferred. |

**10. REVIEW SCHEDULES AND COSTS**

**a. ATR Schedule and Cost.** The ATR has been on-going throughout the development of the study and

analysis and has included interim products including engineering analyses and pre-AFB documentation (currently underway). The ATR is continuing with the following activities planned:

- 1 Feb 2013 – Completion of pre-AFB review and comments.
- March/April 2013 – ATR Team Lead participation in AFB with HQ-USACE. Specific AFB date pending.
- Post-AFB – Review of Draft and Final Feasibility Reports. Schedule to be determined by AFB date and Project Guidance Memorandum directives. Final ATR sign-off is expected before the end of FY2013.

This Review Plan will be updated with a more detailed schedule as soon as available.

The estimated total cost for ATR is $150,000.

**b. Type I IEPR Schedule and Cost.** The IEPR has been established as a two-phase review. Phase 1 (underway) includes review of the draft Engineering Appendix and pre-AFB report documentation and will conclude in Dec 2012. Phase 2 will include review of the complete draft feasibility report and will begin following the Alternative Formulation Briefing. The current contracted cost for IEPR is $296,000.

**c. Model Certification/Approval Schedule and Cost.** All models used on this study are already certified and approved.

## 11. PUBLIC PARTICIPATION

Public involvement has previously occurred for this project during both the reconnaissance and initial feasibility phases. These earlier efforts are documented in the Interim Feasibility Report and EIS. Further public information and participation will be conducted following the Phase 2 Alternative Formulation Briefing and Feasibility Report development. Public comments received will be provided to the project reviewers and included in the Final Report. The final decision document, review reports, and responses to reviewer comments will all be available to the public, on request to the Kansas City District. The public has not been asked to provide nominations for external peer reviewers.

## 12. REVIEW PLAN APPROVAL AND UPDATES

The USACE Northwestern Division Commander is responsible for approving this Review Plan. Previous versions and updated predate this requirement. The Commander's approval reflects vertical team input (involving district, MSC, RMO, 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. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval will be documented in Attachment 3. Significant changes to the Review Plan (such as changes to the scope and/or level of review) shall be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, shall 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 review plan can be directed to the following points of contact:

- Project Manager, USACE Kansas City District, 816-389-3258.
- District Support Planner, USACE Northwestern Division, Missouri River Basin, 503-808-3858.
- Program Manager, USACE Flood Risk Management National Planning Center of Expertise South Pacific Division, 415-503-6852.

**ATTACHMENT 1: TEAM ROSTERS**

| **Project Delivery Team**<br><br>**Discipline – Name – Phone – Email Address** |
|---|
| Project Manager/Plan Formulation<br>Eric Lynn – 816-389-3258<br>eric.s.lynn@usace.army.mil |
| Geotechnical Engineering<br>Glen Bellew – 816-389-3553<br>glen.m.bellew@usace.army.mil |
| Structural Engineering<br>Katrina Marx – 816-389-3247<br>katrina.s.marx@usace.army.mil |
| Civil Engineering<br>Ron Jansen – 816-389-3610<br>ron.g.jansen@usace.army.mil |
| Cost Estimating<br>David Roberts – 816-389-2309<br>david.j.roberts@usace.army.mil |
| Economics<br>Drew Minert – 816-389-2418<br>drew.d.minert@usace.army.mil |
| Environmental Resources<br>Richard Skinker – 816-389-3134<br>richard.a.skinker@usace.army.mil |
| Cultural Resources<br>Tim Meade – 816-389-3138<br>timothy.m.meade@usace.army.mil |

| **Vertical Team**<br><br>**Name – Phone – Email Address** |
|---|
| Northwestern Division<br>Jeremy Weber– 503-808-3858<br>jeremy.j.weber@usace.army.mil |
| Flood Risk Management PCX<br>Eric Thaut – 415-503-6852<br>eric.w.thaut@usace.army.mil |
| Risk Management Center<br>Tom Bishop – 303-963-4556<br>thomas.w.bishop@usace.army.mil |

| **ATR Team**<br>**Name – Phone – Email Address** |
|---|
| Team Lead/Plan Formulation Reviewer<br>Roger D. Setters – 502-315-6891 LRL<br>Roger.D.Setters@usace.army.mil |
| Mechanical/Electrical Reviewer<br>Brenden McKinley – 304-399-5593 LRH<br>brenden.f.mckinley@usace.army.mil |
| Geotechnical Reviewer<br>Michael Robinette – 304-399-5232 LRH<br>michael.d.robinette@usace.army.mil |
| Cost Estimating DX<br>James G Neubauer - 509-527-7332 NWW<br>James.G.Neubauer@usace.army.mil |

This Review Plan will be updated as additional team members are identified.

## ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW FOR DECSION DOCUMENTS

**COMPLETION OF AGENCY TECHNICAL REVIEW**

The Agency Technical Review (ATR) has been completed for the decision document for Kansas Citys, Missouri and Kansas feasibility study. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. 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].

Roger Setters — Date
ATR Team Leader
CELRL

Eric Lynn — Date
Project Manager
CENWK-PM-PF

Eric Thaut — Date
Review Management Office Representative
CESPD-PDS-P

**CERTIFICATION OF AGENCY TECHNICAL REVIEW**

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

SIGNIFICANT CONCERNS WILL BE SUMMARIZED HERE FOLLOWING THE ATR.

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

Dave Matthews — Date
Chief, Engineering Division
CENWK-ED

Jennifer Switzer — Date
Chief, Planning Branch
CENWK-PM-P

**ATTACHMENT 3: REVIEW PLAN REVISIONS**

| Revision Date | Description of Change | Page / Paragraph Number |
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## ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

| Term | Definition | Term | Definition |
|---|---|---|---|
| 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 |
| CENWK | Kansas City District, US Army Corps of Eng. | NWD | Northwestern Division |
| CID | Central Industrial District | | |
| CoP | Community of Practice | NWK | Kansas City District |
| CSDR | Coastal Storm Damage Reduction | O&M | Operation and maintenance |
| CWA | Clean Water Act | | |
| CWRB | Civil Works Review Board | OMB | Office and Management and Budget |
| DPR | Detailed Project Report | OMRR&R | Operation, Maintenance, Repair, Replacement and Rehabilitation |
| DQC | District Quality Control/Quality Assurance | OEO | Outside Eligible Organization |
| DX | Directory of Expertise | OSE | Other Social Effects |
| EA | Environmental Assessment | OWPR | Office of Water Project Review |
| EC | USACE Engineer Circular | PCX | Planning Center of Expertise |
| EIS | Environmental Impact Statement | PDT | Project Delivery Team |
| EO | Executive Order | PAC | Post Authorization Change |
| EM | USACE Engineer Manual | PMP | Project Management Plan |
| ER | USACE Engineer Regulation | PL | Public Law |
| ER | Ecosystem Restoration | QMP | Quality Management Plan |
| FDR | Flood Damage Reduction | QA | Quality Assurance |
| FEMA | Federal Emergency Management Agency | QC | Quality Control |
| FRM | Flood Risk Management | RED | Regional Economic Development |
| FSM | Feasibility Scoping Meeting | RMC | Risk Management Center |
| GRR | General Reevaluation Report | RMO | Review Management Organization |
| Home District/MSC | The District or MSC responsible for the preparation of the decision document | RTS | Regional Technical Specialist |
| HQUSACE | Headquarters, U.S. Army Corps of Engineers | SAR | Safety Assurance Review |
| IEPR | Independent External Peer Review | | |
| IPR | In-Progress Review | USACE | U.S. Army Corps of Engineers |
| IRC | Issue Resolution Conference | | |
| ITR | Independent Technical Review | WRDA | Water Resources Development Act |
| LRR | Limited Reevaluation Report | | |
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| MSC | Major Subordinate Command | | |