

REVIEW PLAN

**Des Moines and Raccoon Rivers Project,
Des Moines, Iowa with Integrated Environmental Assessment**

Rock Island District

MSC Approval Date: 2009-12-16

Last Revision Date: 2012-12-19



**US Army Corps
of Engineers®**
Rock Island District

REVIEW PLAN

**Des Moines and Raccoon Rivers Project,
Des Moines, Iowa with Integrated Environmental Assessment**

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1. PURPOSE AND REQUIREMENTS

Purpose. This Review Plan (RP) defines the scope and level of peer review for the Des Moines and Raccoon Rivers Project, Des Moines, Iowa with Integrated Environmental Assessment (Project).

a. References

- (1) Engineering Circular (EC) 1165-2-214, Water Resources Policies and Authorities, Civil Works Review, 15 Dec 2012
- (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) ER 1165-2-502, Resources Policies and Authorities, Delegation of Review and Approval Authority for Post-Authorization Decision Documents, 31 Mar 2007
- (6) Civil Works Policy Memorandum (CWPM)-12-001 Methodology for Updating Benefit-to-Cost Ratios for Budget Development, 8 March 2012
- (7) Mississippi Valley Division (MVD) MSC Quality Management Plan
- (8) Rock Island District (District) Quality Management Plan
- (9) Feasibility Report - Flood Damage Reduction for Des Moines and Raccoon Rivers Project, Des Moines, Iowa with Integrated Environmental Assessment, December 2005, Vol. 1, 111 pages; Vol. 2, Appendices, 568 pages; Vol. 3, Plates & Drawings, 128 pages. Project Wise Link: [Volume 1 - Des Moines Main Report 8 Dec 05.pdf](#)
- (10) Project Management Plan (PMP) for Des Moines and Raccoon Rivers, Des Moines, Iowa, FRM Project Feasibility Study Phase, 2 Feb 2006
- (11) Review Plan, Des Moines Iowa, Polk County Iowa, Post Authorization Change Report, Rock Island District, 16 Dec 2009; Approved 21 Dec 2009.
- (12) PMP for Des Moines and Raccoon Rivers, Des Moines, Iowa, PED & Construction Phase, 28 Feb 2012
- (13) Des Moines and Raccoon Rivers Project, Des Moines, Iowa Post Authorization Change Report, June 2010

b. Requirements. This RP was developed in accordance with EC 1165-2-214, which establishes an accountable, comprehensive, life-cycle review strategy for Civil Works (CW) products by providing a seamless process for review of all CW projects from initial planning through design, construction, and operation, maintenance, repair, replacement and rehabilitation (OMRR&R). The EC outlines four general levels of review: District Quality Control/Quality Assurance (DQC), Agency Technical Review (ATR), Independent External Peer Review (IEPR), and Policy and Legal Compliance Review. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-214) and planning model certification/approval (per EC 1105-2-412).

2. REVIEW MANAGEMENT ORGANIZATION COORDINATION

The Review Management Organization (RMO) is responsible for managing the overall peer review effort described in this RP. The RMO for decision documents is typically either a Planning Center of Expertise (PCX) or the Risk Management Center, depending on the primary purpose of the decision document. This is primarily a flood risk management (FRM) project, although it does have a small recreation feature: a bike path along the levee crown of the Birdland Park levee. Construction of the Birdland Place and Central Park Levees which make up 89% of the authorized project is now complete. The remaining

work consists of constructing seven closure structures in the downtown Des Moines levee and floodwall system. The design and construction of the remaining work will cause the WRDA 1986 Section 902 limit to be exceeded. As a result the next major work effort will be the preparation of a Progress Authorization Change Report, (PACR) addressing the Section 902 Limit bust. Accordingly, MVD has been designated as the RMO for this RP.

The RMO will coordinate with the CW Cost Engineering and Agency Technical Review (ATR) Mandatory Center of Expertise (MCX) 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.** The PACR is required as a result of an increase in Total Project Cost in excess of the WRDA 1986 Section 902 limit. The PACR supplements the project's Feasibility Report in justifying and supporting the Project Partnership Agreement (PPA) for the construction of the total Project.
- b. **Study/Project Description.** The Project area is within the City of Des Moines, Iowa, which is the non-Federal Sponsor (NFS). Primarily for flood risk management, the authorized project includes two main stem levees (Birdland Park and Central Place) and seven Downtown Closure Improvements in the existing Federal levees. The Birdland Park levee has a small recreational bike path along the levee crown. As of November 2012, the Birdland Park and Central Place levees are substantially complete, including final inspections. The downtown closures remain to be constructed and they represent 11% of the authorized project

The PACR will detail the updated costs and economic analysis for this project in accordance with ER 1105-2-100, Appendix G, Section G-16. There are no changes to the scope, purpose or location of the Project, and there is no plan reformulation required. The findings and recommendations of the original Feasibility Report for the Project are still valid, except that the Project costs have increased. The recently estimated TPC is \$22,756,000.00, and the Section 902 limit is \$21,046,000.00.

For USACE reviewers, the original 2005 Feasibility Study is available at the following ProjectWise link for reference: < [Final Feasibility Report](#) >. National Environmental Policy Act (NEPA) documentation was prepared along with the Feasibility Report and there is no requirement for a change in NEPA documentation. Congressional authorization was originally provided by Section 1001(21) of WRDA 2007, P.L. 110-114. The Project was authorized in the Energy and Water Development Appropriations Act, 2010. The reauthorization increased the authorized project amount. Funding for this project has been appropriated in 2007 and 2010

In 2010, the Corps completed the Des Moines River Regulated Flow Frequency Study. This Study determined that the flows associated with the traditional flow frequency probabilities were increased, i.e. 0.01 percent annual chance exceedance flow was 34,000 cfs and is now 53,400 cfs. The new flows were modeled resulting in higher water surface profiles. Because of the higher flows and elevated water surface profiles, it is likely the damages resulting from future flood events will also increase. In accordance with CWPM 12-011, these higher flood profiles would require a Level 4 General Reevaluation Report, (GRR) be prepared. A waiver from the requirement to conduct a Level 4 GRR is being requested and is discussed in Section 10.a.

- c. Factors Affecting the Scope and Level of Review.** The following items were considered in determining the appropriate level of review.
- Having substantially completed major components of the Project, specifically the Birdland Park and Central Place levees, the principle remaining element of the authorized project is completion of seven closure structures, located in downtown Des Moines so there are few risks or uncertainties remaining. Risk and uncertainty were fully addressed during the feasibility phase. The downtown closures constitute 11% of the total Project
 - The PACR will be straightforward. Costs were updated in the USACE MII system after the feasibility-level design was developed into a more complete design, and those costs are presented in the PACR.
 - The Project is not controversial. Increasing funding to complete construction of the authorized project has broad support, including Congressional-level attention from Senators Harkin and Grassley and from the City of Des Moines.
 - No parts of this Project have been or will likely be challenging because Project features, locations, designs and construction are typical levees and structures like those used elsewhere for flood risk management.
 - Few, if any, Project risks are likely to occur during the remaining design or construction of the closure structures. For example, timing of funding, contracting, construction and weather or flood events always involve some risk and uncertainty, which should be accounted for in the cost estimating and construction management processes for a successful Project.
 - Project designs consider safety at minimum the safety assurance factors described in EC 1165-2-214, including, but not necessarily limited to, the consequences of non-performance on Project economics, the environmental and social well-being [public safety and social justice]; residual risk; uncertainty due to climate variability, etc. The Feasibility Report discussed life safety and, included the assessment of the District Chief of Engineering on whether there is a significant threat to human life associated with the Project.
 - The Governor of Iowa has not requested a peer review of this Project by independent experts;
 - The Project has not involved significant public dispute as to the size, nature, or effects;
 - Public input was solicited during the Feasibility Phase;
 - Without the construction of the closures the downtown area will remain at a higher risk of flooding, which could result in a public concern;
 - The information in the decision document and Project designs using typical levees and other FRM structures are not based on novel methods, do not use innovative materials or techniques, do not present complex challenges for interpretation, do not contain precedent-setting methods or models, and do not present conclusions that are likely to change prevailing practices; and
 - Project engineering design and construction to date, and remaining designs and construction, provide sufficient redundancy, resiliency, and/or robustness, without unique construction sequencing, or reducing or overlapping design or construction schedules for any contracts.
- d. In-Kind Contributions.** Products and analyses provided by NFS as in-kind services are subject to DQC, ATR, and IEPR. The in-kind products and analyses to be provided by the NFS include only limited non-Federal contributions to the Project in the form of participation in Project Coordination Team meetings under the terms of the Design Agreement and PPA. Review of these contributions will be done in accordance with the District's Standing Operating Procedures and will be documented for auditing purposes.

4. DISTRICT QUALITY CONTROL

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 PMP. The home district shall manage DQC. Documentation of DQC activities is required and would be in accordance with the District/MSO Quality Management Plans.

- a. **Documentation of DQC.** DQC is the review of basic science and engineering work products focused on fulfilling the Project quality requirements defined in the 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 District/MSO Quality Management Plans address the conduct and documentation of this fundamental level of review; DQC is not addressed further in this RP.
- b. **Products to Undergo DQC.** Consistent with the District/MSO Quality Management Plans, the Project PACR will undergo DQC.
- c. **Required DQC Expertise.** The PACR DQC will require a team member who is familiar with MII, current cost estimating procedures and responsible for identifying any significant errors in the cost estimating approach.

The Project's PACR DQC team will also require an economist who is familiar with economic cost indexing, benefit-to-cost ratios, and, preferably, previous PACRs.

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 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.** One product to undergo ATR is the Project's PACR, with supporting economic information and cost estimates. In addition, per EC 1165-2-214, Paragraph 8d, for each ATR event, the ATR team will examine relevant DQC records and provide written comment in the ATR report as to the apparent adequacy of the DQC effort.

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 CW 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, cost engineering, etc).
Planning	The Planning reviewer should be a senior water resources planner with experience in the FRM program and have a working knowledge of the cost-sharing requirements, and policy and procedures for Design Agreements, PPAs and PACRs as they apply to NFS participation in cost-shared projects. Coordination with Mr. Michael Zukowski, the Program Manager, (309) 794-5890, is authorized and encouraged. Mr. Zukowski can provide documentation and source files for review as necessary.
Economics	Team member will be experienced in calculating interest, escalating costs and benefits, and performing cost-benefit analyses. Coordination with Mr. John Carr, (309) 794-5396, or Ms. Diane Karnish, (309) 794-5006, the District’s Economist, is authorized and encouraged. They can provide source files for review as necessary.
Risk Analysis	Although required for FRM studies to ensure compliance with ER 1105-2-101, not applicable for this PACR for cost changes, since the Project is substantially completed, with no other changes contemplated that could involve substantial risk or uncertainty.
Cost Engineering	Team member will be familiar with MII, will have a familiarity with current cost estimating procedures and will have responsibility for identifying any significant errors in the District’s cost estimating approach. Coordination with Mr. Charles Van Laarhoven, the District’s Cost Engineer, (309) 794-5627, is authorized and encouraged. He can provide source files for review as necessary.

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 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 Alternative Formulation Briefing, draft report, and final report. The 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, are managed outside the USACE and are conducted on design and construction activities for hurricane, storm, and FRM 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. Considering that the construction of the authorized project is 96.5% complete, and based on the criteria in EC 1165-2-214 and the discussion in Section 3.c, *Factors Affecting the Scope and Level of Review*, IEPR will not be conducted for this PACR. The low risk and magnitude of the remaining Project construction, and the fact that a Feasibility Report was already approved, preclude the need for IEPR. Moreover, this PACR is “so limited in scope or impact,” addressing only a change in the TPC, “that it would not significantly benefit from an independent peer review.” The remaining downtown closures are just 3.5% of the total Project. This risk informed decision explicitly considered that:

- This PACR fails the mandatory triggers for Type I IEPR described in Paragraph 11.d.(1) and Appendix D of EC 1165-2-214:
 - Minimal, if any, consequences of non-performance on Project economics, the environmental and social well-being (public safety and social justice);
 - The PACR contains no influential scientific information or highly influential scientific assessment; and
 - The PACR decision document will meet the exclusions described in Paragraph 11.d.(3) and Appendix D of EC 1165-2-214.
 - i. The project cost was less than \$45 million
 - ii. None of the mandatory triggers are met
- There are no requests to conduct IEPR from a head of a Federal or state agency charged with reviewing the Project; and
- The remaining Project construction fails the criteria for conducting Type II IEPR described in Paragraph 2 of Appendix D of EC 1165-2-214, because it:
 - Does not involve the 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;
 - Does not require redundancy, resiliency, and/or robustness; and/or
 - Poses no unique construction sequencing or a reduced or overlapping design 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 their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in ER 1105-2-100, Appendix H. 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 AND ATR MANDATORY CENTER OF EXPERTISE REVIEW AND CERTIFICATION

All decision documents shall be coordinated with the Cost Engineering and ATR MCX, located in the Walla Walla District. The MCX 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 MCX will also provide the Cost Engineering certification. The RMO is responsible for coordination with the Cost Engineering MCX.

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 Initiative, many engineering models have been identified as preferred or acceptable for use on USACE 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.** There are no planning models addressed in the PACR. The planning models used in the Feasibility Study are still valid and do not require review.
- b. **Engineering Model.** The following engineering model is anticipated to be used in the development of the decision document; MII was used to develop the total Project cost estimate.

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study	Approval Status
MII	MCACES (Micro Computer Aided Cost Estimating System) is the acronym for cost estimating software program tools used by cost engineering to develop and prepare all CW cost estimates. The latest version of this software is MII (MCACES Second Generation). Using the tools of this system, estimates are prepared uniformly allowing cost engineering throughout USACE to function as one virtual cost engineering team.	MCX Preferred Model

10. REVIEW SCHEDULES AND COSTS

- a. **ATR Schedule and Cost.** Initiating the ATR can begin once the PACR has been completed. Prior to beginning work on the PACR, it will be necessary to secure a waiver from HQUSACE of the requirement to conduct a Level 4 General Reevaluation as stated in CWPM 12-001. A memorandum requesting the waiver is being prepared and will be submitted in December 2012. It is expected that HQUSACE will complete its review in January 2013 at which time the PDT will begin preparing the PMP including the scope and budget for the PACR. Unless additional funds are allocated to the Project preparation of the PMP will stop in the second quarter of FY 2013 when all available funds have been expended.

Once the PACR is complete, it is anticipated that 16 hours of labor will be required for review, comment and input to DrChecks, plus 8 hours to back check comments, for a total of 24 hours. PACR specific milestones (CW 160, Submit Final Limited/General Reevaluation Report (LRR/GRR) or Design Documentation Report (DDR) and CW 170, Approve Final LRR/GRR or DDR) have been entered into P2. The total estimated cost for the ATR effort is approximately \$15,000.

- b. **Type I IEPR Schedule and Cost.** Not Applicable.
- c. **Model Certification/Approval Schedule and Cost.** Not Applicable.

11. PUBLIC PARTICIPATION

A draft PACR will be shared with the City of Des Moines for their information and review as appropriate. The City is aware of the cost increases, and supports the construction of the downtown closures. After the PACR is approved, it will be posted on the District's website.

12. REVIEW PLAN APPROVAL AND UPDATES

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

13. REVIEW PLAN POINTS OF CONTACT

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

- Rock Island District, Program Manager, Michael P. Zukowski, (309)794-5890
- Mississippi Valley Division, District Support Team, William G. Harris, (601) 634-5926

ATTACHMENT 1: TEAM ROSTERS

Project Delivery Team

Name	Phone	Discipline	Position/Credentials
Michael Cummings	309-794-5356	Cost Engineering	Engineer Technician
Dawn Ewan	309-794-5261	Program Analyst	Program Analyst
Rachel Fellman	309-794-5475	Civil Engineering	Project Engineer
Duane Johnson	515-276-4656	Construction	Engineer
Steve Johnson	309-794-5319	Planning	Study Manager
Diane Karnish	309-794-5506	Economics	Economics Section
Bob Lazenby	309-794-5188	Counsel	Project Counsel
Michael Zukowski, P.E.	309-794-5890	Program Management	FRM Program Manager

Agency Technical Review Team

Name	Phone	Expertise
TBD by ATR Lead		ATR Team member – Planning/Program Management
TBD by ATR Lead		ATR Team member – Economics
TBD by ATR Lead		ATR Team member –Cost Engineering
ATR Lead TBD by		ATR Lead for FRM Project

Vertical Integration Review Team

Name	Phone	Expertise
Marianne Matheny-Katz	(202) 761-0027	Economist, ASA/CW, HQUSACE
Tom Hughes	(202) 761-5534	Lead Economist, OWPR, HQUSACE
Joe Redican	(202) 761-4523	Deputy, MVD RIT, HQUSACE
John Lucyshyn	(202) 761-4515	Senior Planner, MVD RIT, HQUSACE
Rayford Wilbanks	(601) 634-5847	MVD, Leader, Planning Community of Practice
Susan Smith	(601) 634-5827	MVD, Deputy, Planning Community of Practice
Renee Turner	(601) 634-5818	MVD, Deputy, District Support Teams
William G. Harris	(601) 634-5926	MVD, Upper District Support Team
Eric Thaut	(415) 503-6852	Deputy Director, National FRM PCX
Michelle Kniep	(314) 331-8404	MVD POC, National FRM PCX
Dennis Hamilton	(309) 794-5340	MVR Chief, Programs & Project Management
Roger Perk	(309) 794-5227	MVR Asst. Chief, Programs & Project Management

ATTACHMENT 2: STATEMENT OF TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Post Authorization Change Report for the Des Moines and Raccoon Rivers Project, Des Moines, Iowa, with Integrated Environmental Assessment. The ATR was conducted as defined in this RP to comply with the requirements of EC 1165-2-214. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer's needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the DQC documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrCheckssm.

SIGNATURE

Name TBD

ATR Team Leader

Office Symbol/Company

Date

SIGNATURE

Michael P. Zukowski, P.E.

Project Manager

USACE-MVR-PM-M

Date

SIGNATURE

William G. Harris

Program Manager-District Support Team

USACE-MVD-PD-SP

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

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

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

SIGNATURE

Dennis Lundberg

Chief, Engineering and Construction Division

USACE-MVR-EC

Date

SIGNATURE

Camie A. Knollenberg

Chief, Plan Formulation

USACE-MVD-RPEDN-PD-F

Date

ATTACHMENT 3: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page/Paragraph Number
2009-12-16	Approved	
2012-11-28	Revised: Total Project Cost Estimate, PDT, ATR Team, and Risk Management Organization (RMO) Review Plan (RP) format	Pages 1 to 14
2012-12-19	Revised ATR Signatory page	Page 11

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

Term	Definition
ATR	Agency Technical Review
CW	Civil Works
DQC	District Quality Control/Quality Assurance
EC	Engineering Circular
ER	Engineering Regulation
FDR	Flood Damage Reduction
FRM	Flood Risk Management
HQUSACE	Headquarters, U.S. Army Corps of Engineers
IEPR	Independent External Peer Review
MII	Latest Version of MCACES, Micro Computer-Aided Cost Estimating Software
MCX	Mandatory Center of Expertise
MSC	Major Subordinate Command
NEPA	National Environmental Policy Act
NFS	Non-Federal Sponsor
OMRR&R	Operation, Maintenance, Repair, Replacement & Rehabilitation
PACR	Post Authorization Change Report
PCX	Planning Center of Expertise
PDT	Project Delivery Team
PMP	Project Management Plan
RMO	Review Management Organization
TBD	To Be Determined
USACE	U.S. Army Corps of Engineers
WRDA	Water Resources Development Act