



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
441 G STREET, NW
WASHINGTON, DC 20314-1000

REPLY TO
ATTENTION OF

APR 25 2014

CECW-MVD

MEMORANDUM FOR Commander, Mississippi Valley Division (CEMVD-PD-SP)

SUBJECT: Approval of Upper Mississippi River Comprehensive Plan Programmatic Review Plan

1. Reference is made to CEMVD Memorandum dated 21 March 2014, subject as above.
2. The Model Certification/IEPR panel has completed its review of the subject review plan. The panel approved the Upper Mississippi River Comprehensive Plan Programmatic Review Plan on 23 April 2013.
3. Any questions regarding this approval should be directed to John Lucyshyn of the MVD RIT at (202)761-4515.

Encl

A handwritten signature in cursive script that reads "Theodore A. Brown".

THEODORE A. BROWN, P.E.
Chief, MVD Regional Integration Team
Directorate of Civil Works

PROGRAMMATIC REVIEW PLAN

for the

Upper Mississippi River Comprehensive Plan (UMRCP)
Reconnaissance Studies and Program-Level Products

Rock Island District

MSC Approval Date: *Pending*
Last Revision Date: *3 March 2014*



US Army Corps
of Engineers ®

PROGRAMMATIC REVIEW PLAN

**Upper Mississippi River Comprehensive Plan (UMRCP)
Upper Mississippi River and Illinois Rivers (IA, IL, MN, MO, WI)
Reconnaissance Studies and Program-Level Products**

TABLE OF CONTENTS

| | |
|--|-----------|
| 1. PURPOSE AND REQUIREMENTS..... | 1 |
| 2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION | 1 |
| 3. UPPER MISSISSIPPI RIVER COMPREHENSIVE PLAN (UMRCP) INFORMATION | 1 |
| 4. DISTRICT QUALITY CONTROL (DQC) | 5 |
| 5. AGENCY TECHNICAL REVIEW (ATR) | 6 |
| 6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)..... | 7 |
| 7. POLICY AND LEGAL COMPLIANCE REVIEW | 7 |
| 8. MODEL CERTIFICATION AND APPROVAL..... | 7 |
| 9. REVIEW SCHEDULES AND COSTS | 8 |
| 10. PUBLIC PARTICIPATION | 8 |
| 11. REVIEW PLAN APPROVAL AND UPDATES..... | 8 |
| 12. REVIEW PLAN POINTS OF CONTACT | 8 |
| ATTACHMENT 1: TEAM ROSTERS..... | 10 |
| ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW | 11 |
| ATTACHMENT 3: REVIEW PLAN REVISIONS..... | 12 |
| ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS | 13 |

1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Programmatic Review Plan (PgRP) defines the scope and level of peer review for program-level and reconnaissance products developed under the general authority of the Upper Mississippi River Comprehensive Plan (UMRCP). Program-level documents are those products developed under the UMRCP authority but not as part of specific reconnaissance or feasibility-level studies. This PgRP does not address the specific scope and level of peer review for feasibility-level studies. A separate project review plan (RP) will be developed for each feasibility-level study carried out under the UMRCP.

b. References

- (1) Engineering Circular (EC) 1165-2-214, Civil Works Review Policy, 15 Dec 2012
- (2) EC 1105-2-412, Assuring Quality of Planning Models, 31 Mar 2011
- (3) 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

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

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO for the reconnaissance and program-level products discussed in this PgRP is the Mississippi Valley Division (MVD). The RMO is responsible for managing the overall peer review effort described in this PgRP. The RMO will coordinate with the Flood Risk Management Planning Center of Expertise (FRM-PCX) and other Planning Centers of Expertise as appropriate.

3. UPPER MISSISSIPPI RIVER COMPREHENSIVE PLAN (UMRCP) INFORMATION

a. **Authorization.** The Upper Mississippi River Comprehensive Plan (UMRCP) was authorized in Section 459 of the Water Resources Development Act of 1999, which states:

SEC. 459. UPPER MISSISSIPPI RIVER COMPREHENSIVE PLAN.

(a) DEVELOPMENT.—The Secretary shall develop a plan to address water resource and related land resource problems and opportunities in the upper Mississippi and Illinois River basins, from Cairo, Illinois, to the headwaters of the Mississippi River, in the interest of systemic flood damage reduction by means of—

- (1) structural and nonstructural flood control and floodplain management strategies;*
- (2) continued maintenance of the navigation project;*

- (3) management of bank caving and erosion;
- (4) watershed nutrient and sediment management;
- (5) habitat management;
- (6) recreation needs; and
- (7) other related purposes.

(b) *CONTENTS.*—The plan under subsection (a) shall—

- (1) contain recommendations on management plans and actions to be carried out by the responsible Federal and non-Federal entities;
- (2) specifically address recommendations to authorize construction of a systemic flood control project for the upper Mississippi River; and
- (3) include recommendations for Federal action where appropriate and recommendations for follow-on studies for problem areas for which data or current technology does not allow immediate solutions.

(c) *CONSULTATION AND USE OF EXISTING DATA.*—In carrying out this section, the Secretary shall—

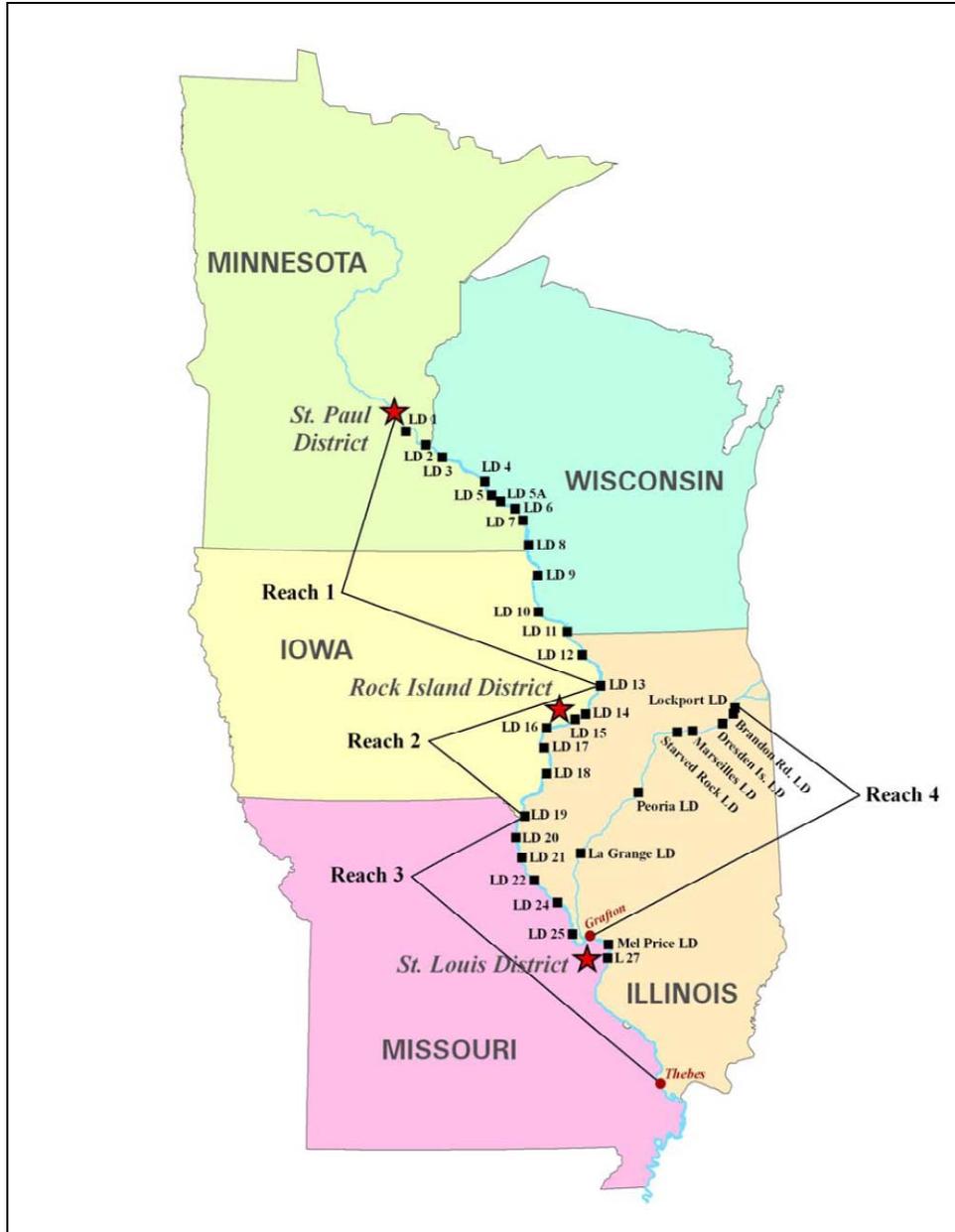
- (1) consult with appropriate Federal and State agencies; and
- (2) make maximum use of data in existence on the date of enactment of this Act and ongoing programs and efforts of Federal agencies and States in developing the plan under subsection (a).

(d) *COST SHARING.*—

- (1) *DEVELOPMENT.*—Development of the plan under subsection (a) shall be at Federal expense.
- (2) *FEASIBILITY STUDIES.*—Feasibility studies resulting from development of the plan shall be subject to cost sharing under section 105 of the Water Resources Development Act of 1986 (33 U.S.C. 2215).

(e) *REPORT.*—Not later than 3 years after the date of enactment of this Act, the Secretary shall submit to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate a report that includes the plan under subsection (a).

- b. Study Area Description.** The study area of the UMRCP is the Upper Mississippi River Basin drainage area above Cairo, IL (at the confluence of the Mississippi and Ohio Rivers) exclusive of the Missouri River Basin, and encompasses approximately 185,000 square miles.



Study Area Indicating the Four Reaches and Corps Offices

- c. **Previous Studies/Efforts.** Initial efforts under the UMRCP, culminating in a 2008 reconnaissance-level report included: 1) a hydrologic evaluation of the upper Mississippi River and Illinois Waterway system; 2) a Federal interest assessment in a systemic flood damage reduction project for the main stems; and 3) recommendations for subsequent work under the UMRCP authority.

While no federal interest was found for funding construction of a systemic flood risk reduction project, recommendations from the reconnaissance report are categorized into four areas: 1) providing technical support and facilitating continued development of strategies and plans for the mainstems, 2) developing strategies and plans for tributary watersheds, 3) developing a plan and determining federal interest in protecting critical transportation infrastructure, and 4) assessing

federal interest in reconstruction of existing flood damage reduction projects. Following a public hearing and endorsement by the Mississippi River Commission, the report was submitted to Congress in January 2009.

In the report submitted to Congress, the Assistant Secretary of Army for Civil Works recommended: "I concur with the recommendation of the UMRCP report and the MRC to pursue additional cost shared studies to determine Federal interest in reconstruction of the aging infrastructure, where appropriate and justified, to ensure that the existing system continues to provide the intended benefits. I also agree that further study of critical transportation needs are warranted based on the analyses contained in the UMRCP report. Finally, in view of the 2008 Midwest flooding, I also support additional analyses to expand the main stem analysis of the UMRCP to include tributaries of the Mississippi River to fully address flood risk management and present a true basin wide analysis."

- d. Ongoing and Future Studies/Efforts.** Implementation of the recommendations of the 2008 reconnaissance report and those of the Assistant Secretary of the Army for Civil works includes reconnaissance-level studies followed by feasibility-level studies, as appropriate, along with other program-level activities. The feasibility-level studies may be conducted under the UMRCP authority or may be undertaken utilizing other study authorities (such as the CAP or Section 729 Watershed and River Basin Assessments).

Under the UMRCP authority, a reconnaissance study investigating reconstruction of the Big Five Drainage and Levee Districts (Preston, Clear Creek, East Cape Girardeau, North Alexander, and Miller Pond) was completed and approved to proceed to a feasibility study under Section 216 (Review of Completed Works). Upon initiation of Feasibility, the Big Five study will develop a project review plan. An additional reconnaissance study for the Iowa-Cedar watershed has been initiated and is the first tributary watershed being studied under the UMRCP (this study has an existing review plan).

Based on the funding that is anticipated in the next several years, the primary focus will be on the development of main stem flood risk management strategies in collaboration with the states of Wisconsin, Minnesota, Illinois, Iowa, and Missouri.

Program-level products will be prepared to support funding requests, provide information to the stakeholders, and support the development of the main stem FRM strategies. These products include budgetary documents (PMP's, Fact Sheets, Scoping documents, etc.), public information documents (fact sheets, status reports, web site information, etc.) and an integrated watershed hydrology and hydraulic (H&H) model.

- e. Factors Affecting the Scope and Level of Review.**

As previously discussed, the products covered by this PgRP fall into two general categories: Reconnaissance Studies and Program-level Products.

Reconnaissance Studies

Reconnaissance Studies and are generally used to support funding decisions for Feasibility Studies but are not decision documents as defined by EC 1105-2-214. These products generally rely on existing information to reach their conclusions and are therefore unlikely to be significantly challenging or utilize any novel methods, materials or techniques. When a Feasibility-level study is

initiated following the reconnaissance phase, an individual study review plan will be developed to fully evaluate the factors affecting the required level of review for that study.

Program-level Products

Program-level Products fall into three sub-categories: Budgetary products (e.g. Project Management Plans, scopes of work, budget documents, etc.), Public Information products, and Technical products.

Budgetary products and Public Information products tend to be simple summaries of current project information. Because these products simply summarize project information, they will not utilize any novel methods, materials or techniques. The information in Budgetary products is used to support funding decisions and is not generally shared with the public. The information in Public Information products communicates the project status to the public and, while the public may have varied reactions to the information presented, it is unlikely that the product itself will generate any public dispute.

Technical products (such as a regional H&H model) may be developed as tools to use for regional and State strategies and plans. These technical products may present challenges but are unlikely to utilize any novel methods, materials or techniques. Technical products are not generally shared with the public and therefore would be unlikely to generate any public dispute.

- f. **In-Kind Contributions.** Products and analyses provided by non-Federal sponsors as in-kind services are subject to the same level of peer review required for similar Corps-developed products. There are no known work-in-kind contributions at this time.

4. DISTRICT QUALITY CONTROL (DQC)

All reconnaissance studies and program-level products 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.** DQC comments and responses will be documented in DrChecks. The DrChecks report and a DQC completion memo will be provided to the ATR team(s), as appropriate.
- b. **Products to Undergo DQC.** All products will undergo DQC prior to completion. If determined necessary, DQC will be conducted for interim products. At this time, products anticipated to undergo DQC include: reconnaissance reports, project management plans, budgetary documents (J-sheets, etc.), Feasibility Cost Sharing Agreements, public information products, and a regional H&H model.
- c. **Required DQC Expertise.** DQC expertise will mirror the expertise on the PDT and will be conducted by senior District personnel who have not contributed to the study.
- d. **Establishment of Review Manager.** In order to coordinate the many potential reviews, the program will utilize a Review Manager who will coordinate all review tasks and assist in the identification of review teams. The review manager will be assigned by the lead District (Rock Island) but may be

located in St. Louis, Rock Island, or St. Paul District. The necessary qualifications for the Review Manager are described below.

| | Expertise Required |
|----------------|--|
| Review Manager | The Review Manager should be a senior professional preferably with experience in conducting DQC and ATR. The manager should also have the necessary skills and experience to guide a virtual team through the review processes. The manager must be familiar with the UMRCP and should come from St. Louis, Rock Island, or St. Paul District. |
| | |

5. AGENCY TECHNICAL REVIEW (ATR)

The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. 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.** Reconnaissance-level studies are not required to undergo ATR. ATR will not typically be performed for budgetary and public information products because they tend to be simple summaries of current project information. Feasibility-level studies will undergo ATR as required by EC 1105-2-214 and the ATR will be addressed in an individual review plan for each study. The following table outlines the proposed program-level products to undergo ATR. Other interim products may also undergo ATR and the PgRP will be updated if and when such interim products are identified.

| Type of Product | Product(s) to be Reviewed |
|-------------------------------|----------------------------------|
| Reconnaissance Study | Not Applicable |
| Hydrology and Hydraulic Model | Draft model, Final model |
| Budgetary Products | Not Applicable |
| Public Information Products | Not Applicable |

- b. **Required ATR Team Expertise.** Specific team makeup would be determined by the scope and magnitude of each product undertaken as a part of the UMRCP. For the H&H Model, the following disciplines are anticipated:

| Discipline | Expertise Required |
|-------------------|---|
| ATR Lead | The ATR Lead should be a senior professional preferably with experience in conducting DQC and ATR. The lead should also have the necessary skills and experience to guide a virtual team through the review processes. The lead |

| | |
|-------------------|--|
| | may also serve as a reviewer for a specific discipline. The ATR Lead must be from outside of MVD. |
| Hydrology | Reviewer should be a senior hydrologist proficient in hydrologic engineering computer models and working experience with large river basin hydrology and natural watershed runoff and should have working knowledge and experience in water resources studies including hydrographic surveys, Geographic Information System (GIS), and basic terrain modeling techniques |
| Hydraulics | The hydraulic engineering reviewer will be an expert in the field of hydraulics and have a thorough understanding of engineering computer models and working experience with large river systems. |

- c. **Required ATR Team Expertise.** Specific ATR team makeup would be determined by the scope and magnitude of each product undertaken as a part of the UMRCP. The Review Manager would assist the RMO in identifying ATR team members.
- 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.

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 will be completed for all final products. A sample Statement of Technical Review is included in Attachment 2.

6. 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 not warranted for any of the products addressed by this PgRP because they are not decision documents and do not present any conclusions that impact public safety and welfare. Feasibility-level studies conducted under the UMRCP will make a determination on the need for IEPR in a separate review plan.

7. POLICY AND LEGAL COMPLIANCE REVIEW

All products will be reviewed, as appropriate in accordance with ER 1105-2-100 and standard MVD processes, for their compliance with law and policy.

8. 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.

Compliance with EC 1105-2-412 is not required for reconnaissance and program-level products. However, if any models will be utilized for these products, the PDT will strive to use previously certified or approved models and the appropriate level of DQC will be used to ensure that the models have been applied correctly.

No existing engineering models have been identified for use at this time. It is anticipated that the planned regional H&H model will be an engineering model that will require ATR at a minimum. The model will likely be developed utilizing existing models that are categorized as “Preferred” by the Hydraulics, Hydrology, and Coastal Engineering Community of Practice (HH&C CoP), such as HEC-GeoRAS and HEC-GeoHMS. When more details about the model development and potential use are available, the HH&C CoP will be consulted to determine what, if any, additional reviews are necessary.

9. REVIEW SCHEDULES AND COSTS

- a. DQC Schedule and Cost.** The schedule and cost for DQC for products covered by this PgRP will be documented in the appropriate Project Management Plans.
- b. ATR Schedule and Cost.** The schedule and cost for ATR will vary based on the nature and complexity of the technical products being reviewed. The schedule and cost will be documented in the appropriate Project Management Plan. For the H&H model, the ATR is anticipated to cost \$30,000 and require 8 weeks to complete (this estimate will be revisited when the scope of the model is better understood). For Feasibility-level studies, the cost and schedule for ATR will be documented in the individual review plans.

10. PUBLIC PARTICIPATION

While public participation is anticipated for the UMRCP, there is no current plan for how or when that participation will take place for the program in general. Additionally, it is likely that the participating States will lead the public participation effort. Public participation in Feasibility-level studies will be outlined in the individual review plans.

11. REVIEW PLAN APPROVAL AND UPDATES

The Headquarters, U.S. Army Corps of Engineers (HQ) Director of Civil Works (DCW) is responsible for approving this Programmatic Review Plan. Individual review plans will be developed for Feasibility-level studies and will be approved by the MVD Commander in accordance with EC 1165-2-214.

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 DCW approval are documented in Attachment 3 and updates will be provided to the RMO. Significant changes to the Review Plan will require re-approval. Changes to this review plan will be considered significant if they identify a new program-level product which has different review

requirements or if any of the reviews identified in this document are changed substantially. The MSC is responsible for re-approval of this PgRP.

The latest version of the Review Plan, along with the DCW approval memorandum or MSC re-approval memorandum, as appropriate, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

12. 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, Rock Island District, 309-794-5593
- District Support Team, Mississippi Valley Division, 601-634-5926
- Deputy Director, Flood Risk Management Planning Center of Expertise, 415-503-6852

ATTACHMENT 2: SAMPLE STATEMENT OF TECHNICAL REVIEW

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the <type of product> for <project name and location>. The ATR was conducted as defined in the project’s Review Plan to comply with the requirements of EC 1165-2-214. During the ATR, compliance with established policy principles and procedures, utilizing justified and valid assumptions, was verified. This included review of: assumptions, methods, procedures, and material used in analyses, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the results, including whether the product meets the customer’s needs consistent with law and existing US Army Corps of Engineers policy. The ATR also assessed the District Quality Control (DQC) documentation and made the determination that the DQC activities employed appear to be appropriate and effective. All comments resulting from the ATR have been resolved and the comments have been closed in DrCheckssm.

SIGNATURE

Name
ATR Team Leader
Office Symbol/Company

Date

SIGNATURE

Name
Project Manager
Office Symbol

Date

SIGNATURE

Name
Architect Engineer Project Manager¹
Company, location

Date

SIGNATURE

Name
Review Management Office Representative
Office Symbol

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.

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

SIGNATURE

Name
Chief, Engineering Division
Office Symbol

Date

SIGNATURE

Name
Chief, Planning Division
Office Symbol

Date

¹ Only needed if some portion of the ATR was contracted

ATTACHMENT 3: REVIEW PLAN REVISIONS

| Revision Date | Description of Change | Page / Paragraph Number |
|----------------------|------------------------------|--------------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |

ATTACHMENT 4: ACRONYMS AND ABBREVIATIONS

| <u>Term</u> | <u>Definition</u> | <u>Term</u> | <u>Definition</u> |
|--------------------|--|--------------------|--|
| ASA(CW) | Assistant Secretary of the Army for Civil Works | PCX | Planning Center of Expertise |
| ATR | Agency Technical Review | PDT | Project Delivery Team |
| DQC | District Quality Control/Quality Assurance | PgRP | Programmatic Review Plan |
| EC | Engineer Circular | PMP | Project Management Plan |
| ER | Ecosystem Restoration | PL | Public Law |
| FDR | Flood Damage Reduction | QMP | Quality Management Plan |
| FRM | Flood Risk Management | QA | Quality Assurance |
| Home District/MSD | The District or MSC responsible for the preparation of the decision document | QC | Quality Control |
| HQUSACE | Headquarters, U.S. Army Corps of Engineers | RMC | Risk Management Center |
| IEPR | Independent External Peer Review | RMO | Review Management Organization |
| MCX | Mandatory Center of Expertise | SAR | Safety Assurance Review |
| MSC | Major Subordinate Command | UMRCP | Upper Mississippi River Comprehensive Plan |
| NED | National Economic Development | USACE | U.S. Army Corps of Engineers |
| NEPA | National Environmental Policy Act | WRDA | Water Resources Development Act |
| OEO | Outside Eligible Organization | | |
| | | | |

ATTACHMENT 5: ENDORSEMENT BT FLOOD RISK MANAGEMENT PLANNING CENTER OF EXPERTISE



DEPARTMENT OF THE ARMY
SOUTH PACIFIC DIVISION, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET
SAN FRANCISCO, CALIFORNIA 94103-1398

REPLY TO
ATTENTION OF

CESPD-PDP (FRM-PCX)

7 March 2014

MEMORANDUM FOR Michael Tarpey, Rock Island District

SUBJECT: Upper Mississippi River Comprehensive Plan Programmatic Review Plan

1. The Flood Risk Management Planning Center of Expertise (FRM-PCX) has reviewed the subject programmatic review plan (PgRP) dated 3 March 2014. The PgRP satisfies the peer review policy requirements of Engineering Circular (EC) 1165-2-214 Civil Works Review and outlines an appropriate scope and level of review based on the information included in the plan.
2. Initial review of the PgRP was performed by Karen Miller, Huntington District. Additional discussions among the FRM-PCX, Mississippi Valley Division, St. Louis District, and Rock Island District were held to address PCX comments on the PgRP. All comments have been resolved.
3. Per EC 1165-2-214, Appendix B, approval of programmatic review plans rests with the Director of Civil Works (DCW). The FRM-PCX recommends the PgRP for approval by the DCW. Upon approval of the PgRP, please provide a copy of the approved PgRP, a copy of the DCW's approval memorandum, and the link to where the PgRP is posted on the District website to Eric Thaut, FRM-PCX Deputy Director (eric.w.thaut@usace.army.mil) and Michelle Kniep, FRM-PCX Regional Manager for Mississippi Valley Division (michelle.r.kniep@usace.army.mil).
4. Thank you for the opportunity to assist in the preparation of the PgRP. If you have any questions about the FRM-PCX review or need assistance with the peer review efforts outlined in the plan, please contact Michelle Kniep or myself.

Handwritten signature of Eric Thaut in black ink.

Digitally signed by
THAUT.ERIC.WILLIAM.123163182
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Date: 2014.03.07 16:49:04 -08'00'

Eric Thaut
Deputy Director, FRM-PCX