

DRAFT

REVIEW PLAN

**EAST ST. LOUIS FLOOD PROTECTION
DESIGN DEFICIENCY CORRECTION
LIMITED REEVALUATION REPORT**

ST. LOUIS DISTRICT



**US Army Corps
of Engineers®**

MAY 2009

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**ST. LOUIS DISTRICT
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REVIEW PLAN

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1. PURPOSE AND REQUIREMENTS

A. Purpose

This document outlines the Review Plan for the East St. Louis Flood Protection Design Deficiency Correction Limited Reevaluation Report (LRR). This LRR documents a limited reevaluation of measures noted in a General Design Memorandum (May 1990) that were intended to address seepage problems in the levee system brought on as a result of deficiencies in the original levee design. Projects created to address design deficiencies will be performed under a congressional authorization that originally called for rehabilitation of the levee. Engineer Circular (EC) *Peer Review of Decision Documents* 1105-2-408, dated 31 May 2005, (1) established procedures to ensure the quality and credibility of Corps decision documents by adjusting and supplementing the review process, and (2) required that documents have a peer review plan.

A subsequent circular, *Review of Decision Documents*, EC 1105-2-410, dated 22 August 2008, revises the technical and overall quality control review processes for decision documents. It formally distinguishes between technical review performed by in-district quality control (DQC) and out-of-district resources (Agency Technical Review, "ATR"). It also reaffirms a requirement for Independent External Peer Review (IEPR). The IEPR is the most independent level of review and is applied in cases that meet certain criteria where the risk and magnitude of a proposed project are such that a critical examination by a qualified team outside of the U.S. Army Corps of Engineers (USACE) is warranted.

B. Requirements

EC 1105-2-410 outlines the requirement of the three review approach requirements (DQC, ATR, and IEPR) while EC 1105-2-408 provides guidance on Corps Planning Centers of Expertise (PCX) involvement in the approaches. The East St. Louis Flood Protection Design Deficiency LRR will document flood risk management (FRM) issues at the Metro East Sanitary District (MESD) levee and provide solutions to remedy identified design deficiencies. Non-Federal sponsors including MESD, Madison County Flood Protection District and St. Clair County Flood Protection District have expressed a strong desire for certification that the MESD levee provides 100-year/500-year equivalent levels of flood protection with an emphasis on obtaining 100-year certification first. Noted on the following pages are critical aspects of the Review Plan.

District Quality Control

The DQC is the review of basic science and engineering work products focused on fulfilling the project quality requirements defined in the East St. Louis Flood Protection Project Management Plan (PMP). QDC is required for all decision documents. The QDC is managed in the District and may be conducted by in-house staff as long as the reviewers are not doing the work involved in the study, including contracted work that is being reviewed. Basic quality control tools include 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 the approval by the District Commander. The Major Subordinate Command (MSC)/District are directly responsible for the quality management/control, and to conduct and document this fundamental level of review. DQC has been completed for the East St. Louis Flood Protection Design Deficiency Correction LRR.

Agency Technical Review

EC 1105-2-410 recharacterized the ATR (which replaced the level of review formerly known as Independent Technical Review) into an in-depth review, managed within USACE, and conducted by a qualified team outside of the home district that is not involved in the day-to-day production of a project/product. An ATR is required for all decision documents. The purpose of this review is to ensure the proper application of clearly established criteria, regulations, laws, codes, principles and professional practices. The ATR team reviews the various work products and assures that all the parts fit together in a coherent whole. ATR teams will be comprised of senior USACE personnel (Regional Technical Specialists, etc.) and may be supplemented by outside experts, as appropriate. To assure independence, the leader of the ATR team shall be from outside the home MSC. EC 1105-2-408 requires that the Document Review and Checking System (DrChecks) be used to document all ATR comments, responses, and associated resolution accomplished. This Review Plan outlines the proposed approach to meeting this requirement for the East St. Louis Flood Protection Design Deficiency Correction LRR. An ATR is required for this LRR.

Independent External Peer Review

EC 1105-2-410 recharacterized the external peer review process that was originally added to the existing Corps review process via EC 1105-2-408. The 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. An IEPR may be required for decision documents. IEPR is managed by an outside eligible organization (OEO) that is described in the Internal Revenue Code Section 501(c) (3), is exempted from Federal tax under Section 501(a), of the Internal Revenue Code of 1986; is independent; is free from conflicts of interest; does not carry out or advocate for or against Federal water resources projects; and has experience in establishing and administering IEPR panels. The scope of

review will address all underlying planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the LRR. The IEPR will provide an in-depth review the technical aspects of the project, while the ATR will be responsible for agency and administration policy review. This Review Plan outlines the planned approach to meeting this requirement for the East St. Louis Flood Protection Design Deficiency Correction LRR. An IEPR is required for this LRR.

Policy and Legal Compliance Review

In addition to technical reviews, the LRR will be reviewed for legal sufficiency and policy compliance. These reviews culminate in Washington-level determinations that the recommendations in the LRR comply with law and policy, and warrant approval or further recommendation to higher authority by the Chief of Engineers. Guidance for policy and legal compliance reviews is addressed further in Appendix H, ER 1105-2-100. Technical reviews described in EC 1105-2-410 are to augment and complement the policy review processes by addressing compliance with published Army polices pertinent to planning products, particularly polices on analytical methods and the presentation of findings in decision documents. DQC and ATR efforts are to include the necessary expertise to address compliance with published planning policy. Counsel will generally not participate on ATR teams, but may at the discretion of the district or as directed by higher authority. When policy and/or legal concerns arise during ATR that are not readily and mutually resolved by the PDT and the reviewers, the District will seek issue resolution support from the MSC and Headquarters, Army Corps of Engineers (HQUSACE) in accordance with procedures outlined in Appendix H, ER 1105-2-100. IEPR teams are not expected to be knowledgeable of Army and administration polices, nor are they expected to address such concerns. An IEPR team should be given the flexibility to bring important issues to the attention of decision makers. Legal reviews will be conducted concurrent with ATR of the LRR.

EC 1105-2-408 and EC 1105-2-410 outline PCX coordination in conjunction with preparation of the Review Plan. This Review Plan is being coordinated with the PCX for Flood Risk Management (FRM). The FRM-PCX is responsible for the accomplishment of ATR and IEPR for the East St. Louis Flood Protection Design Deficiency Correction LRR. The DQC is the responsibility of the MSC/District. The FRM-PCX may manage the ATR and IEPR reviews to be conducted by others.

Review Plan Approval and Posting

In order to ensure the Review Plan is in compliance with the principles of EC 1105-2-410 and the MSC's Quality Management Plan (QMP), the Review Plan must be approved by the applicable MSC, in this case the Commander, Mississippi Valley Division (MVD). Once the Review Plan is approved, the District will post it to its district public website and notify MVD and the FRM-PCX.

Safety Assurance Review

Section 2035 of the Water Resources Development Act (WRDA) of 2007, EC 1105-2-410 requires that all projects addressing flooding or storm damage reduction undergo a safety assurance review during design and construction. Safety assurance factors must be considered in all reviews for those studies. Implementation guidance for Section 2035 is under development. When guidance is issued, requirements for addressing safety assurance factors will be addressed. Prior to preconstruction engineering and design (PED) of the project identified for construction, a PMP will be developed that will include safety assurance review. Safety assurance review will also be accomplished during construction.

2. STUDY INFORMATION

A. Decision Document

The LRR will serve as the decision document that will address design deficiency issues that were identified over the course of the rehabilitation phase of the project. The LRR will present planning, engineering, and implementation details of the recommended plan to allow final design and construction to proceed subsequent to approval of the recommended plan. The design deficiency construction phase of this project that will be outlined in the LRR will be cost shared at 65 percent Federal, 35 percent non-Federal with project sponsors MESD, Madison County Flood Protection District and St. Clair County Flood Protection District. No Congressional authorizations are required to perform activities as described in the LRR.

B. General Site Description

The MESD levee protects the East St. Louis, Illinois metropolitan area in Madison and St. Clair Counties in southwestern Illinois. The system provides urban flood protection to approximately 85,000 acres, the cities of East St. Louis and Granite City, and numerous other municipalities. The system is located between Mississippi River Miles 175 and 195 above the confluence of the Ohio River with the Mississippi River.

The MESD main line levee system is over 31 miles long and includes approximately 9.4 miles of flank levees, 19.2 miles of riverfront levee, 27 closure structures, 40 gravity drains, 17 pump stations, 300 relief wells, and 3.1 miles of flood wall. The Chain of Rocks Canal levee provides a 9-mile portion of this system. The Chain of Rocks Canal levee is federally owned and operated. Numerous drainage channels are located within the area protected by the flood protection system. The project protects approximately 200,000 inhabitants and over \$1 billion in property assets. The overall study area includes those areas adjacent to the primary study area which could be influenced by potential actions to address the identified problems and needs. The East St. Louis Flood Protection Project is considered “single purpose”, meaning the project addresses one purpose only (e.g. flood risk management).

C. Study Scope

The LRR will focus on FRM alternatives to address underseepage and through-seepage issues at the MESD levee. Non-Federal sponsors are interested primarily in obtaining 100-year certification of the levee on the quickest timeframe possible.

Work to be conducted pursuant to the LRR will ensure the levee meets flood protection criteria it was originally designed to meet. This work will include construction of 344 relief wells, approximately 22,900 feet of subsurface bentonite slurry wall, and all related appurtenant works. Upon successful completion of this work, the U.S. Army Corps of Engineers will provide certification that the MESD levee meets 100-year criteria/1% risk factor, and can withstand a flood measuring 52.0 feet on the Mississippi River gage at St. Louis (approximately 500-year event/0.2% risk factor). The primary challenges of implementing measures outlined in the LRR will be managing hazardous/toxic wastes (HTW) in an area that is part of a proposed National Priorities List (Superfund) site and special engineering techniques needed to construct subsurface bentonite slurry walls up to 120 feet below ground. The LRR notes subsurface data obtained in the 1950s was analyzed to determine the number of relief wells and subsurface cutoff wall length to address design deficiencies. As new subsurface data collection efforts are underway to further refine the underseepage analysis, the number of relief wells and cutoff wall footage may be subject to further revisions pending outcome from this underseepage analysis. The LRR does not contain influential scientific information or highly influential scientific assessments. Because of impacts this project may have on an ongoing Remedial Investigation/Feasibility Study at the Sauget Area 2 Superfund Site (ILD000605790), significant interest from the U.S. Environmental Protection Agency, Illinois Environmental Protection Agency and several commercial interests is expected.

Total estimated cost to correct design deficiencies is \$ [REDACTED]. The MESD will be responsible for operation and maintenance of structures and appurtenances constructed as a result of this project, while the Madison and St. Clair Flood Protection Districts will be responsible for funding and construction administration for non-Federal elements of design deficiency correction measures. Costs associated with handling/disposal of hazardous or toxic substances shall be a sponsor responsibility.

An Environmental Assessment (EA) concluded that no significant impacts to human health and the environment were expected as a result of executing activities as described in the LRR. The EA, which addressed whether the project is likely to have significant economic, environmental and social actions to the nation will be made available to ATR and IEPR teams upon request.

D. Problems and Opportunities

The primary flood-related problem in the study area is the potential for levee failure as a result of underseepage and through-seepage. Excessive underseepage and through-seepage conditions identified over the course of the 1993, 1995 and 2008 floods have decreased the effectiveness the levee, thereby resulting in potential decertification. Risks of human life loss, commercial/industrial property damage and spread of hazardous/toxic

materials from industrial facilities into residential areas are substantial if recommended actions noted in the LRR are not performed.

E. Potential Methods

Potential FRM measures include the following with a description provided below:

- No Action
- New Relief Well Construction,
- Subsurface Cutoff Wall Construction,
- Seepage Berm Construction
- Combination of Relief Wells and Subsurface Bentonite Slurry Walls

No Action: No construction activities or administrative actions are implemented.

New Subsurface Relief Well Construction: Relief wells are constructed on the protected side of the levee to relieve excessive hydrostatic pressures beneath a levee during flooding conditions.

Subsurface Bentonite Slurry Walls: Low permeability physical barrier advanced to bedrock or appropriate confining layer on the protected side of the levee designed to impede seepage flows through and beneath a levee during flooding.

Seepage Berm Construction: Berm constructed of low permeability material on the protected side of the levee that holds seepage water that serves to counteract upward seepage forces resulting from flooding.

Combination of Relief Wells and Subsurface Bentonite Slurry Walls: Combination of relief wells and subsurface bentonite slurry walls. Design basis is dependant on seepage calculations utilizing existing geotechnical data.

As a result of the investigation conducted during the analysis for the development of the LRR, it was found that the no action alternative was not acceptable since underseepage safety criteria were not met for the design flood. A solution to address seepage problems with relief wells only was ruled out because: (1) certain areas of the levees where underseepage problems were critical required an unreasonably narrow relief well spacing, and (2) portions of the levee having through-seepage issues would not be addressed by relief wells only. A subsurface bentonite slurry wall constructed parallel to the entire MESD levee, while effective for both through-seepage and underseepage scenarios, was also ruled out because of excessive cost. Based on field surveys, it was also determined that landside features (e.g. railroad tracks and heavy industrial/commercial development near the levee), large-scale real property acquisitions and environmental considerations prohibited construction of seepage berms at the MESD levee. Seepage berm solutions would also be ineffective in addressing through-seepage issues.

It was determined on the basis of conducting an underseepage analysis using existing geotechnical data that a combination of relief wells and subsurface bentonite slurry walls

offered the best technical, environmental and economical solution to address underseepage and through-seepage design deficiencies.

3. AGENCY TECHNICAL REVIEW PLAN

The ATR for the LRR will be managed by the PCX. The FRM-PCX will identify individuals to perform the ATR. The St. Louis District will provide suggestions on possible reviewers.

A. General

An ATR Leader shall be designated by the PCX for the ATR process. The ATR Leader for this project is to be determined, but will have expertise in flood risk management and geotechnical engineering and reside outside of MVD. The ATR Leader is responsible for providing information necessary for setting up the review, communicating with the PDT, providing a summary of critical review comments, collecting grammatical and editorial comments from the ATR team (ATRT), ensuring that the ATRT has adequate funding to perform the review, facilitating the resolution of the comments, and certifying that the ATR has been conducted and resolved in accordance with policy. ATR will be conducted for geotechnical engineering, economics, environmental compliance, cultural resources, civil engineering, cost engineering, and real estate. If necessary, reviews of more specific disciplines maybe identified.

B. Agency Technical Review Team (ATRT)

The ATRT will be comprised of individuals that have not been involved in the development of the LRR and will be chosen by the PCX based on expertise, experience, and/or skills. The members will roughly mirror the composition of the PDT, but reside outside of the St. Louis District. In general, the review team members will each have a minimum of 10 years experience and education in their respective discipline. A statement of qualifications is required for each discipline prior to acceptance as a review team member and for any subsequent changes. It is anticipated that the team will consist of at least 7 reviewers. The ATRT members will be identified at the time the review is conducted and will be presented in Appendix B. General descriptions of ATR disciplines are as follows:

Geotechnical: Team member will be experienced in levee design, post-construction evaluation, relief well construction and construction of subsurface soil/cement/bentonite walls in deep subsurface environments (120+ feet below ground). A registered professional engineer is recommended.

Economics: Team member will be experienced in civil works and related flood risk reduction projects, and have a thorough understanding of the Hydrologic Engineering Center – Flood Damage Analysis (HEC-FDA) model.

Environmental: Team member will be experienced in the National Environmental Policy Act (NEPA) process and analysis, and have a biological or environmental background

that is germane to the project area. It is highly recommended that this team member also have a strong background in HTW analyses.

Cultural Resources: Team member will be experienced in cultural resources and tribal issues, regulations, and laws.

Civil/Site/Utilities/Relocations: This discipline may require a dedicated team member, or may be satisfied by structural or geotechnical reviewer, depending on individual qualifications. Team member will have experience in utility relocations, positive closure requirements and internal drainage for levee construction, and application of non-structural flood damage reduction, specifically flood proofing. A registered professional engineer is suggested.

Cost Estimating: Team members will be familiar with cost estimating for similar civil works projects using the Microcomputer Aided Cost Engineering System (MCACES) model. Team member will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. It is not anticipated that coordination with the Cost Engineering DX will be required.

Real Estate: Team member will be experienced in Federal civil work real estate laws, policies and guidance. Members shall have experience working with respective sponsor real estate issues.

Other disciplines/functions involved in the project included as needed with similar general experience and educational requirements.

C. Communication.

The communication plan for the ATR is as follows:

(1) The team will use the Document Review and Checking System (DrChecks) to document the ATR process. The lead project manager will facilitate the creation of a project portfolio in the system to allow access by all PDT and ATRT members. An electronic version of the document, appendices, and any significant and relevant public comments shall be posted in MS Office-compatible format at:

<ftp://ftp.usace.army.mil/pub/> at least one business day prior to the start of the comment period.

(2) The PDT shall send the ATR Leader and members individual documents and appendices and the ATRT shall download and print as necessary.

(3) The PDT shall host an ATR kick-off meeting virtually or on-site to orient the ATRT during the first week of the comment period. If funds are not available for an on-site meeting, the PDT shall coordinate a virtual presentation meeting or at a minimum provide a presentation about the project, including photos of the site, for the team.

(4) The ATR Leader shall ensure all responses have been entered into DrChecks and conduct a briefing to summarize comment responses to highlight any areas of

disagreement.

(5) A revised electronic version of the report and appendices with comments incorporated shall be posted at <ftp://ftp.usace.army.mil/pub/> for use during back checking of the comments.

(6) PDT members shall contact ATRT members or ATR Leader as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks but a summary of discussions may be provided in the system.

(7) Reviewers will be encouraged to contact PDT members directly via email or phone to clarify any confusion. DrChecks shall not be used to post questions needed for clarification.

D. Funding

(1) The PDT district shall provide labor funding by cross charge labor codes. Funding for travel, if needed, will be provided. The lead planner will work with the ATR Leader to ensure that adequate funding is available and is commensurate with the level of review needed. The current cost estimate for this review is \$██████. Funding will be 100% Federal. Any funding shortages will be negotiated on a case by case basis and in advance of a negative charge occurring.

(2) The ATR Leader shall provide organization codes for each team member and a responsible financial point of contact (Corps of Engineers Financial Management System "CEFMS" responsible employee) for creation of labor codes.

(3) Reviewers shall monitor individual labor code balances and alert the ATR Leader to any possible funding shortages.

E. Timing and Schedule

(1) Throughout the development of this document, the PDT will conduct seamless review to ensure planning quality.

(2) The ATR will be conducted on the East St. Louis Flood Protection Design Deficiency Correction LRR.

(3) The ATR process for the LRR will follow the following timeline. Actual dates will be scheduled once the period draws closer. All products produced for these milestones will be reviewed. It is not anticipated that in-kind contributions will be provided by non-Federal sponsors.

ATR Timeline

Task	Date
ATR Scoping Meeting	20 March 2009
ATR Completion Report for Draft LRR	27 April 2009
ATR Completion Report for Final LRR	20 May 2009

F. Review

(1) ATRT responsibilities are as follows:

(a) Reviewers shall review scoping material and the draft LRR to confirm that work was done in accordance with established professional principles, practices, codes, and criteria and for compliance with laws and policy. Comments shall be submitted into DrChecks.

(b) Reviewers shall pay particular attention to one's discipline but may also comment on other aspects as appropriate. Reviewers that do not have any significant comments pertaining to their assigned discipline shall provide a comment stating this.

(c) Grammatical and editorial comments shall not be submitted into DrChecks. Comments should be submitted to the ATR Leader via electronic mail using track changes feature in the MS Office-compatible document or as a hard copy mark-up. The ATR Leader shall provide these comments to the project manager for incorporation.

(d) Review comments shall contain these principal elements:

- a clear statement of the concern
- the basis for the concern, such as law, policy, or guidance
- significance for the concern
- specific actions needed to resolve the comment

(e) The "Critical" comment flag in DrChecks shall not be used unless the comment is discussed with the ATR Leader and/or the lead planner first.

(2) PDT responsibilities are as follows:

(a) The PDT shall review comments provided by the ATRT in DrChecks and provide responses to each comment using "Concur, Non-Concur" or "For Information. Concur responses shall state what action was taken and provide revised text from the report if applicable. Non-Concur responses shall state the basis for the disagreement or clarification of the concern and suggest actions to negotiate the closure of the comment.

(b) PDT members shall discuss any "Non-Concur" responses prior to

submission with the PDT and ATRT Leader.

G. Resolution

(1) Reviewers shall back check PDT responses to the review comments and either close the comment or attempt to resolve any disagreements. Conference calls shall be used to resolve any conflicting comments and responses.

(2) A reviewer may close a comment if the comment is addressed and resolved by the response, or if the reviewer determines that the comment was not a valid technical comment as a result of a rebuttal, clarification, or additional information, or because the comment was advisory, primarily based on individual judgment or opinion, or editorial. If reviewer and responder cannot resolve a comment, it should be brought to the attention of the ATR Leader and, if not resolved by the ATR Leader, it should be brought to the attention of the planning chief who will need to sign the certification. ATRT members shall keep the ATR Leader informed of problematic comments

H. Certification

ATR certification is required for the draft report and final reports. See Appendix A for ATR certification statement. A summary report of all comments and responses will follow this statement and accompany the report throughout the report approval process.

4. INDEPENDENT EXTERNAL PEER REVIEW PLAN

EC 1105-2-410 states that certain thresholds trigger an IEPR: “In cases where there are public safety concerns, a high level of complexity, novel or precedent-setting approaches; where the project is controversial, has significant interagency interest, has a total project cost greater than \$45 million, or has significant economic, environmental and social effects to the nation, IEPR will be conducted.” The IEPR seeks to address all underlying planning, safety assurance, engineering, economic and environmental analyses and will be conducted after the ATR is completed.

The area that is protected by the levee is highly urbanized, thus significant public safety concerns exist. This project has the potential to be controversial because of the cost component and is expected to have significant intergovernmental agency interest. As documented in the draft LRR, total costs are significantly over the \$45M threshold to trigger an IEPR. For these reasons, an IEPR will be conducted. The current estimate to conduct an IEPR is approximately \$██████ and will be a project cost. It is anticipated that the IEPR panel will consist of 4 reviewers. The IEPR panel review will be 100% federally funded. It is not anticipated that the public, including scientific or professional societies, will ask to nominate potential external peer reviewers.

Reviewers that will participate in the IEPR will be required to possess experience and qualifications equal to or above ATR members listed in Appendix B. All technical

aspects of the LRR, including recommendations outlined in the ATR Completion Report, will be reviewed by the PDT and undergo DQC prior to submittal for IEPR. The IEPR will be managed by an Outside External Organization (OEO) independent of the Corps of Engineers. The Corps of Engineers may nominate candidates to participate in the IEPR, but the OEO will select the panel members.

A. Project Magnitude

For reasons described in the preceding paragraphs, the magnitude of this project is designated as high.

B. Project Risk

This project is considered to have high overall risk. The potential for failure of the levee is high because of underseepage and through-seepage problems that have been documented during inspections of the levee during excessive flooding periods.

C. Vertical Team Consensus

This Review Plan will serve as the coordination document to obtain vertical team consensus. Subsequent to PCX approval, the plan will be provided to the vertical team for review. The PCX will endorse or approve the Review Plan prior to MVD approval. MVD approval of the plan will indicate vertical team consensus.

D. Products for Review

The full IEPR panel will receive the East St. Louis Flood Protection Design Deficiency Correction LRR for review and comment.

E. Communication and Documentation.

The communication plan for the IEPR is as follows:

(1) The panel will use DrChecks to document the IEPR process. The lead planner will facilitate the creation of a project portfolio in the system to allow access by all PDT and the respective OEO. An electronic version of the document, appendices, and any significant and relevant public comments shall be posted in MS Office compatible format at: <ftp://ftp.usace.army.mil/pub/> at least one business day prior to the start of the comment period.

The OEO will compile the comments of the IEPR panelists, enter them into DrChecks, and forward the comments to the District. The District will consult the PDT and outside sources as necessary to develop a proposed response to each panel comment. The District will enter the proposed response in DrChecks, and then return the proposed response to the panel. The panel will reply to the proposed response through the OEO, again using DrChecks. This final panel reply may or may not concur with the District's proposed response and the panel's final response will indicate concurrence or briefly explain what issue is blocking concurrence. There will be no final closeout iteration. The District will consult the vertical team and outside resources to prepare a response to each comment. The initial panel comments, the District's proposed response, the panels reply to the District's proposed response, and the final agency response will all be tracked and archived in DrChecks for permanent record. However, only the initial panel

comments and the final agency responses will be posted. This process will continue to be refined as experience shows need for changes. This is specifically in accordance with the EC 1105-2-410 Frequently Asked Questions, dated 3 November 2008.

(2) The PDT shall send each IEPR panel member a copy of the LRR.

(3) The PDT shall inform the IEPR panel when all responses have been entered into DrChecks and conduct a briefing to summarize comment responses to highlight any areas of disagreement.

(4) A revised electronic version of the report and appendices with comments incorporated shall be posted at <ftp://ftp.usace.army.mil/pub/> for use during back checking of the comments.

(5) PDT shall contact the OEO for the IEPR panel as appropriate to seek clarification of a comment's intent or provide clarification of information in the report. Discussions shall occur outside of DrChecks but a summary of discussions may be provided in the system.

(6) The IEPR panel shall produce a final Review Report to be provided to the PDT no later than 60 days after submission of the LRR. The District will draft a response report to the IEPR final report and process it through the vertical team. Following resolution of comments and relevant follow-on actions, the Corps will finalize its response to the IEPR Review Report and will post both the Review Report and the Corps final responses to the public website. Construction activities may be initiated upon posting of the final Review Report.

F. Funding

The FRM-PCX will identify an entity independent from the PDT to scope the IEPR and develop an Independent Government Estimate. The St. Louis District will provide funding to the IEPR panel and the FRM-PCX.

5. MODEL CERTIFICATION

Models used to develop cost/economic/technical assumptions and potential solutions to address underseepage and through-seepage problems in the LRR include the following:

- Microcomputer Aided Cost Engineering System (MCACES) MII Version 3.0 (cost estimation model)
- Hydrologic Engineering Center Flood Damage Assessment (HEC-FDA) Risk Based Model Version 1.2 (economics analysis model)
- Mansur & Kaufman Underseepage Model (TM-3-424)

All models noted above have been certified/approved for use on USACE projects and have been commonly used on similar projects.

6. PUBLIC REVIEW

The public has had the opportunity to participate in this study as part of the NEPA process. Only limited comments on the EA that noted relief well and cutoff wall construction as referenced in the draft LRR were received. These comments related primarily to HTW issues that are likely to be encountered in areas on or adjacent to the Sauget Area 2 Superfund Site. Public review comments and responses will be provided to the ATR and IEPR panels prior to the ATR/IEPR panels convening. While it is anticipated that a Finding of No Significant Impact (FONSI) will be signed shortly, the St. Louis District may determine at a later date that a supplemental EA is necessary if the number of relief wells or cutoff wall length is significantly changed as a result of ATR or IEPR input.

7. STUDY TEAMS AND PLANNING CENTERS OF EXPERTISE COORDINATION

A. Project Delivery Team

The PDT is comprised of those individuals directly involved in the development of the LRR. Individual contact information and disciplines are presented in Appendix B.

B. Vertical Team

The Vertical Team includes St. Louis District management, MVD District Support Team (DST) and Regional Integration Team (RIT) staff as well as members of the Planning of Community of Practice. Specific points of contact for the Vertical Team can be found in Appendix B.

C. PCX

The appropriate PCX for this document is the National Flood Risk Management Center of Expertise located within the South Pacific Division (SPD). This Review Plan will be submitted to the FRM-PCX Program Manager for review and comment. Since it was determined that this project is high risk, an IEPR will be required. As such, the PCX will manage the IEPR review. For the ATR, the PCX is requested to nominate the ATR team as discussed in paragraph 3.b. above. The approved Review Plan will be posted on the St. Louis District's public website (<http://www.mvs.usace.army.mil>).

D. Review Plan Points of Contact

The Points of Contact for questions and comments to this Review Plan are as follows:

1. District Point of Contact: Mr. Paul Takacs
2. MVD Point of Contact: Mr. Fred Ragan
3. FRM-PCX Point of Contact: Mr. Jerry Fuentes
4. Regional Integration Team Point of Contact: Mr. Theodore Brown

8. APPROVALS

Subsequent to the PCX approval, the Review Plan will be provided to the vertical team for review. The Project Manager will submit the Review Plan to the FRM-PCX for review, endorsement and recommendation for approval by the MVD Commander. Once the Review Plan is approved, the District will post it to its public website (<http://www.mvs/usace.army.mil>) and notify MVD and the FRM-PCX.

**APPENDIX A
STATEMENTS OF TECHNICAL REVIEW**

**COMPLETION OF AGENCY TECHNICAL REVIEW
EAST ST. LOUIS FLOOD PROTECTION DESIGN DEFICIENCY
CORRECTION LIMITED REEVALUATION REPORT**

The USACE St. Louis District has completed the Limited Reevaluation Report (LRR) for the East St. Louis Flood Protection Design Deficiency Correction Project. Notice is hereby given that an Agency Technical Review (ATR) that is appropriate to the level of risk and complexity inherent in the project, has been conducted as defined in the Review Plan. 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 data quality level obtained; and reasonableness of the result, including whether the product meets the customers' needs consistent with law and existing Corps policy. The ATR was accomplished by an agency team composed of staff from multiple districts. All comments resulting from the ATR have been resolved.

TBD _____

NAME
East St. Louis Flood Protection
Design Deficiency Correction LRR
Agency Technical Review Leader

Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

A summary of all comments and responses is attached. Significant concerns and the explanation of the resolution are as follows:

(Describe the major technical concerns, possible impact and resolution)

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

NAME
Chief, Planning Division

Date

APPENDIX B

PROJECT DELIVERY TEAM

The Project Delivery team (PDT) is comprised of those individuals involved in the development of the decision document. Disciplines include Project Management, Geotechnical Engineering, Economics, Environmental, Cultural Resources, Mechanical Engineering, Cost Engineering and Real Estate/Lands. Local interests include the project sponsor Metro East Sanitary District, as well as Madison County Flood Prevention District, St. Clair County Flood Prevention District, and East-West Gateway Council of Governments.

AGENCY TECHNICAL REVIEW TEAM

Name	Discipline	Phone	Email
TBD	ATR Leader		
TBD	Geotechnical Engineering		
TBD	Economics		
TBD	Environmental		
TBD	Cultural Resources		
TBD	Mechanical Engineering		
TBD	Cost Engineering		
TBD	Real Estate/Lands		

INDEPENDENT EXTERNAL PEER REVIEW PANEL

Name	Discipline	Phone	Email
TBD	Geotechnical Engineering		
TBD	Economics		
TBD	Environmental		

VERTICAL TEAM

Name	Discipline	Phone	Email
Paul Takacs	Project Manager	(314) 331-0842	Paul.Takacs@usace.army.mil
Fred Ragan	District Support Team Lead	(601) 634-5926	Fredrick.Ragan@usace.army.mil

**PLANNING CENTER OF EXPERTISE
FLOOD RISK MANAGEMENT**

Name	Discipline	Phone	Email
Eric Thaut	Program Manager	(415) 503-6852	Eric.W.Thaut@usace.army.mil

**APPENDIX C
ACRONYMS AND ABBREVIATIONS**

<u>Term</u>	<u>Definition</u>	<u>Term</u>	<u>Definition</u>
ATR	Agency Technical Review	MCACES	Microcomputer Aided Cost Engineering System
ATRT	Agency Technical Review Team	MESD	Metro East Sanitary District
CEFMS	Corps of Engineers Financial Management System	MSC	Major Subordinate Command
DQC	District Quality Control	MVD	Mississippi Valley Division
DrChecks	Document Review and Checking System	NEPA	National Environmental Policy Act
DST	District Support Team	OEO	Outside Eligible Organization
EA	Environmental Assessment	PCX	Planning Center of Expertise
EC	Engineer Circular	PDT	Project Delivery Team
FDR	Flood Damage Reduction	PED	Preconstruction Engineering and Design
FONSI	Finding of No Significant Impact	PMP	Project Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FRM-PCX	Flood Risk Management Planning Center of Expertise	QC	Quality Control
HEC-FDA	Hydrologic Engineering Center – Flood Damage Analysis	QMP	Quality Management Plan
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RIT	Regional Integration Team
HTW	Hazardous/Toxic Wastes	SPD	South Pacific Division
IEPR	Independent External Peer Review	USACE	U.S. Army Corps of Engineers
LRR	Limited Reevaluation Report	WRDA	Water Resources Development Act