



REPLY TO
ATTENTION OF

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

CENWD-PDD

13 December 2012

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

SUBJECT: Review Plan (RP) Approval for the Topeka, Kansas, Flood Damage Reduction Feasibility Study

1. Reference EC 1165-2-209, Civil Works Review Policy, 31 January 2012.
2. The enclosed RP for the Topeka, Kansas, Flood Damage Reduction Feasibility Study has been prepared in accordance with the reference guidance.
3. The RP has been revised to address NWD review comments. All comments have been back-checked and closed out.
4. I hereby approve this RP, which is subject to change as study circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this RP or its execution will require review by CENWD-PDD and approval by this office.
5. The RP should be posted to the internet and available for public comment.
6. Please contact Jeremy Weber, at 503-808-3858, if you have further questions regarding this matter.

Encl

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



**US Army Corps
of Engineers**
Kansas City District

PROJECT REVIEW PLAN

TOPEKA, KANSAS FLOOD RISK MANAGEMENT PROJECT PRE-CONSTRUCTION ENGINEERING AND DESIGN PHASE

NOVEMBER 2010

THIS PAGE INTENTIONALLY LEFT BLANK

PROJECT REVIEW PLAN

**TOPEKA, KANSAS,
FLOOD RISK MANAGEMENT PROJECT
PRE-CONSTRUCTION ENGINEERING
AND DESIGN PHASE**

TABLE OF CONTENTS

1.0 PURPOSE OF THE REVIEW PLAN 1

2.0 GENERAL INFORMATION 1

 Executive Summary -- Study Purpose and Background..... 1

 Project Authority..... 1

 PED Objectives..... 1

 Summary Study Scope and Execution Parameters 2

 Local Sponsorship and Funding..... 2

 Description of Existing Overall Project and Problem..... 2

 Project Challenges and Risks..... 3

3.0 LEVELS OF REVIEW 3

 District Quality Control (DQC) 3

 Agency Technical Review (ATR) 3

 Independent External Peer Review (IEPR)..... 4

 Safety Assurance Review (SAR)..... 4

 Architect-Engineer (A-E) or Consulting Contacts..... 4

 Sponsor In-Kind Work..... 4

4.0 SELECTED REVIEW PROCESS(S)..... 4

 ATR References..... 5

5.0 PRIMARY DISCIPLINES AND EXPERTISE NEEDED FOR THE ATR 5

 Discipline-Specific Guidance & Requirements 5

 ATR Team Leader 6

 Agency Technical Review Team Members and Organization 6

6.0 ATR SCHEDULE AND BUDGET 6

7.0 PUBLIC COMMENT OPPORTUNITIES 7

8.0 AVAILABILITY OF PUBLIC COMMENTS TO REVIEW TEAM..... 7

Appendix A – Team Members

Appendix B – Review Schedule

Appendix C – ATR Certifications

THIS PAGE INTENTIONALLY LEFT BLANK

PROJECT REVIEW PLAN

TOPEKA, KANSAS

FLOOD RISK MANAGEMENT PROJECT

PRE-CONSTRUCTION ENGINEERING

AND DESIGN PHASE

1.0 PURPOSE OF THE REVIEW PLAN

This Project Review Plan (PRP) has been prepared in accordance with EC 1165-2-209, “Civil Works Review Policy”. The PRP is included by reference as a part of the Project Management Plan (PMP) under the QC/QA element and the Standard Operating Procedures for Planning Centers of Expertise. This PRP provides guidance to the Project Delivery Team (PDT) on the specific review levels, responsibilities, and process requirements for execution of review on the Topeka, Kansas, Flood Risk Management project.

2.0 GENERAL INFORMATION

Executive Summary -- Study Purpose and Background

The U.S. Army Corps of Engineers, Kansas City District, along with local project sponsors, conducted a feasibility study of the existing flood risk management project for the Topeka metropolitan area. The study was authorized under Section 216 of the 1970 Flood Control Act (Review of Completed Civil Works). The feasibility study recommends a plan for increasing the reliability of the Topeka levee system that was determined to be technically effective, complete, economically feasible, and environmentally acceptable. Policy compliance and legal review is complete. The Final Feasibility Report detailing the Recommended Plan was approved by the Civil Works Review Board on 30 Jan 2009 and a Chief’s Report was executed 24 August 2009.

The Feasibility Study recommends reliability improvements to four of the six units in the levee system through geotechnical and structural modifications of the existing project features. The Environmental Assessment determined that the proposed project will have no significant impact to the environment.

Project Authority

The original Topeka, Kansas, Local Flood Protection Project was authorized by the Flood Control Act approved 22 Jun 1936 (Public Law 738, 74th Congress) and further expanded by the Flood Control Act approved 3 September 1954 (Public Law 780, 83rd Congress).

The office of Management and Budget (OMB) approved the Feasibility Report on 18 February 2010 and the Assistant Secretary of the Army for Civil Works (ASA(CW)) forwarded the report to Congress on 5 March 2010 for inclusion in the next Water Resources Development Act (WRDA). Congressional passage of a WRDA is required for construction authorization.

PED Objectives

The Kansas City District is undertaking PED activities with the following objectives:

1. Develop adequate design data and parameters necessary for implementation of the Recommended Plan. A Design Documentation Report will be prepared.
2. Prepare plans and specifications for bidding and construction.
3. Prepare a Project Partnership Agreement (PPA) for execution between the Corps and the local sponsor for the construction phase.
4. Assist the Local Sponsor in the acquisition of needed Lands, Easements, Rights-of-Way, and Relocations.

Summary Study Scope and Execution Parameters

The overall existing project contains six official levee units located along the Kansas River and two local tributaries, Soldier Creek and Shunganunga Creek, within the immediate metropolitan area and vicinity of Topeka, Kansas. The proposed work will increase the performance reliability of the units within the system. Proposed construction activities will be confined to the areas of the existing project.

Local Sponsorship and Funding

The two owner-operators of the Topeka, Kansas, Local Flood Protection Project are listed below. These non-Federal organizations own and maintain the systems with the Corps providing regular inspections and technical review of significant modifications to the system. PED funding sources are 75% Federal Civil Works Appropriation & 25% local cost share funding. All local funding will be provided from the City of Topeka, Kansas.

City of Topeka, Kansas	Waterworks Unit Auburndale Unit South Topeka Unit Oakland Unit
North Topeka Drainage District	North Topeka Unit Soldier Creek Diversion Unit

Description of Existing Overall Project and Problem

The existing project includes approximately 40 miles of main and 2.91 miles of tie back levees, 0.7 miles of floodwall, 9.2 miles of improved channel on Soldier Creek, 5.5 miles of improved channel on Shunganunga Creek, and 2.6 miles of improved and enlarged channel along the Kansas River. The project also includes pumping plants, gated outlets for drainage structures, sandbag and stoplog gaps, and ponding areas. Each of the six flood risk management units was designed and constructed in coordination with the other. The South Topeka and Oakland Units are operationally depended while the other units are independent.

The feasibility study determined that the hydraulic overtopping reliabilities for the existing levee units range from 94 to 99 percent for the 1-percent chance flood event and a raise in the system would not be necessary to meet the criteria for continued FEMA certification. The focus of the study was then directed to examining the reliabilities of the geotechnical and structural features

of the system. The reliabilities of several features within the system were found inadequate, creating potential failure locations within the levee system. Potential methods of failure include levee underseepage, structure uplift and cracking, floodwall sliding, and floodwall foundation failure.

The Recommended Plan proposes to address the identified structural and geotechnical weaknesses through a combination of underseepage control berms, pumped relief wells, floodwall stability berms, uplift control modification pump stations and several manhole structures, structural pump station strength reinforcement, the removal of one pump station, and the removal and replacement of the South Topeka floodwall.

The estimated cost of the Recommended Plan is \$21,157,000 (October 2008 price level).

Project Challenges and Risks

The proposed construction components of the project are typical of geotechnical and structural reliability improvements to levee systems. The construction methods are not expected to pose any significant challenges or risks.

Some of the project locations are in close proximity to commercial businesses and/or active railroad tracks that may pose challenges for real estate access and construction operation. Proper coordination with the adjacent property owners and the railroad should alleviate these concerns. Access to, and construction within, the Topeka Water Treatment Plant must be coordinated with the City of Topeka to avoid disruption to plant operations.

Other than access and coordination concerns, and physical risks are typical of construction sites. Other project risks include the potential for schedule delay if high flows in the Kansas River should occur. Any aspect of the construction that may result in a temporary reduction of the levee to provide flood risk management must have a contingency plan in place to provide temporary emergency protection.

3.0 LEVELS OF REVIEW

District Quality Control (DQC)

District Quality Control will be conducted by the Kansas City District for all in-house prepared products. In accordance with MSC and district Quality Management Plans, internal reviews or design checks will constitute quality control for each deliverable product. It is the responsibility of each product development team member, their supervisors, and the project manager to ensure that every product receives an internal quality control review. It is the responsibility of the supervisor or section chief for each team member to ensure that a qualified District reviewer is selected and conducts a review of their product prior to delivery to the project manager, or prior to completion.

Agency Technical Review (ATR)

Agency Technical Review is an independent review, outside of Kansas City District, of the deliverables for the project and constitutes an independent review of the entire project. In accordance with EC 1165-2-209, the outside Agency Review Teams will be coordinated through

the appropriate Risk Management Organization (RMO). The RMO for this effort will be the Risk Management Center (RMC), or their delegated representative. The designated RMO staff and the District Project Manager will work together to find team member staff outside the Kansas City District with the requisite experience and qualifications to review the project. Review comments will be documented, processed, and resolved through the Dr. Checks software package.

Type I Independent External Peer Review (IEPR)

Type I Independent External Peer Review (IEPR) applies only to decision documents and will not be conducted for the design phase of the Topeka Levee project.

Type II IEPR - Safety Assurance Review (SAR)

In accordance with current and future guidance that may be developed, a Type II IEPR, also referred to as a Safety Assurance Review (SAR), will be conducted prior to initiation of physical construction and periodically thereafter until construction activities are completed. The SAR will review threat to human life, robustness of design, construction sequencing, design and construction schedules, and any other parameters required at the time of review. The SAR will be conducted by an independent (outside of the Corps of Engineers) panel. Establishment of the panel will be in accordance with applicable guidance at the time of project construction.

Architect-Engineer (A-E) or Consulting Contacts

Contracts used on this project will undergo a Quality Assurance Review of each deliverable product by assigned District PDT members. Additionally, any products developed by contract will also undergo ATR along with other products as outlined in the ATR paragraph above. All contractors are required to develop a Quality Management Plan to be submitted as the first deliverable for the contract. This will detail the firm's internal quality management and design check review processes, and is subject to prior approval by the Project Manager and PDT in accordance with the established Kansas City District Business Quality Procedures.

Sponsor In-Kind Work

It is not anticipated that significant technical products will be provided from the sponsor as in-kind contributions. However, should this change in the future, sponsor in-kind contributions will be peer reviewed in the District by the appropriate discipline team member using the DQC procedures described above.

4.0 SELECTED REVIEW PROCESS(S)

The selected review processes for the Topeka Levee project are District Quality Control, Agency Technical Review, and Safety Assurance Review. These review processes will be applied to the Design Documentation Report (DDR), the construction plans and specifications, and any other documentation produced during the PED phase that is required to implement the proposed project. It is not anticipated that A-E contracts will be utilized for development of technical products for this project. If this should change, contracts will be procured in accordance with the prior approval of the District Acquisition Strategy Board, as outlined in the approved District Business Quality Procedures.

ATR References

- ER 1165-2-209, dated 31 Jan 2010
- Kansas City District Business Quality Procedure (BQP) 5.5.04 (Quality Plans).
- Reviewers will be required to use the Dr Checks web-based system for comments. Refer to <https://www.projnet.org/projnet/home/version1/index.cfm> for additional Dr. Checks access information.

5.0 PRIMARY DISCIPLINES AND EXPERTISE NEEDED FOR THE ATR

Members of the ATR team will be identified by Kansas City District staff with assistance from the RMO as needed. The ATR team members will be from outside Kansas City District. The RMO will assist in identifying an ATR Team Leader from outside Northwestern Division.

Discipline-Specific Guidance & Requirements

Representation on the ATR team is required in the disciplines listed below. A statement of qualifications will be required for each team member prior to acceptance as an ATR Team member and for any subsequent changes thereto. Multiple requirements may be filled by one ATR team member, depending on individual qualifications.

Geotechnical: Team member will have extensive experience in levee & floodwall design including underseepage control, post-construction evaluation, and rehabilitation, including risk & reliability analysis.

Structural: Team member will have a thorough understanding of levee, flood wall, and retaining wall design, and structures typically associated with levees (pump stations, gateway structures, utility penetrations, stoplog & sandbag gaps, and other closure structures).

Construction: Team member will have a thorough understanding of earth work and structural concrete construction techniques and equipment, especially as related to levees and floodwalls.

Hydrology & Hydraulics: Team member will have experience and expertise in the dynamics of large river systems and be familiar with interior drainage issues related to levee construction. The team member will have an understanding of computer modeling techniques that may be used for this project (HEC-HMS, HEC-RAS, and UNET).

Civil / Site / Utilities / Relocations: Team member will have experience in utility relocations and positive closure requirements for levee construction.

Cost Estimating: Team member will be familiar with cost estimating for similar projects using MCACES. Team member will be a Certified Cost Technician, Certified Cost

Consultant, or Certified Cost Engineer. Cost estimating efforts will be coordinated with the Cost Engineering Center at USACE-Walla Walla District.

Real Estate: Team Member will be familiar with real estate appraisal and acquisition processes.

Other disciplines involved in the project may include Plan Formulation, Hazardous / Toxic Waste, Cultural Resources, and Legal. The principles contained in this document also apply to these disciplines/functional areas. (*Exception: Legal review is not to be under the purview of the ATR Team Leader but is instead responsible to the Corps of Engineers Office of Counsel chain-of-command*).

ATR Team Leader

Team leader designation will be coordinated by the RMO and finalized based on input from ATR Team members and the NWK Project Manager, the PDT, and NWK staff. The ATR Team Leader may also serve as an ATR reviewer if availability allows. The leader shall, in addition to discipline-specific requirements, be responsible for:

- Acting as a liaison between the Product Development Team and the ATR Team
- In conjunction with the PM, the ATR team leader will perform active coordination of the ATR process and study findings with the RMO and ensure compliance with an adequate level of review.
- Distributing information for review and coordinating efforts of the ATR Team
- Ensuring that individual ATR Team members are operating in accordance with the guidelines established for ATR by ER 1110-1-105.
- The ATR team will likely *not* be geographically co-located. Therefore, it is of paramount importance that the ATR Team Leader be capable of organizing the total ATR efforts across District and Division boundaries.
- A substitute ATR Team Leader from the ATR team will be named by the ATR team leader for periods of extended (over 60 days) absence.

Agency Technical Review Team Members and Organization

Project Delivery Team members and disciplines are presented in Appendix A to this PRP. Members of the ATR team will be added to Appendix A when designated.

The ATR team members will be contacted on a regular basis by the corresponding PDT members so as to be kept aware of criteria selection and the broad approaches employed in this study thus ensuring a seamless review when products are submitted for ATR.

6.0 ATR SCHEDULE AND BUDGET

Preliminary ATR schedule and milestones are included in Appendix B of this PRP. Additional milestones will be developed by the PDT and ATR team after the ATR team has been established. Schedule milestones will be reviewed on a regular basis to accurately determine project progress.

Based on a preliminary estimate of the size of the ATR team and the expected hours required for project reviews and comment resolution, the ATR budget is estimated at approximately \$80,000. This budget will be refined by the PDT and the ATR team based on the establishment of the final schedule and reviewed regularly for progress reporting.

7.0 PUBLIC COMMENT OPPORTUNITIES

Review of the project review plan will be available on the Kansas City District website, link as follows: <http://www.nwk.usace.army.mil/projects/topeka/>, and at the request of interested parties. The review plan will be available through all public and agency scoping and other processes for the project. Inquiries regarding the review plan and the project should be directed to the Project Manager as listed in Appendix A.

8.0 AVAILABILITY OF PUBLIC COMMENTS TO REVIEW TEAM

Public input will be distributed to the ATR members when received to ensure that public comments are considered in the development of design and construction documentation.

**PROJECT REVIEW PLAN
TOPEKA, KS, FLOOD RISK MANAGEMENT PROJECT**

**APPENDIX A
PDT AND ATR TEAM MEMBERS**

PDT Member Name	Extension¹	Discipline	ATR Team Member Name	Extension²
Eric Lynn	3258	Project Manager/Plan Formulation	To Be Determined	TBD
LyTreese Hanpton	3241	Engineering Team Lead		
Derek Jenson	2323	Geotechnical Engineering		
Daniel Newman	3843	Civil Engineering		
Paul Muller	3614	Structural Engineering		
Eddie Fernandez	3237	Structural Engineering		
Marian Baker	3222	Hydrology/Hydraulics		
Brenda Adams	3797	Geology		
Richard Skinker	3134	Environmental/NEPA		
Paul Speckin	3592	HTRW		
Pat Miramontez	3322	Cost Estimating		
Tim Meade	3138	Cultural Resources		
Melissa Lewman	3042	Real Estate		
Allen Holland	3105	Economics		

Notes:

1. Kansas City District telephone numbers are area code 816 and prefix 389.
2. Phone numbers of ATR team members to be determined.

**PROJECT REVIEW PLAN
TOPEKA, KS, FLOOD RISK MANAGEMENT PROJECT**

**APPENDIX B
DESIGN AND REVIEW SCHEDULE**

Phase 1 – Oakland Levee Unit

65% Design Complete: Oct 2010
65% Peer Review Complete: Nov 2010
65% Agency Review Complete: Dec 2010
100% Design Complete: Feb 2011
100% Peer Review Complete: Mar 2011
100% Agency Review Complete: Apr 2011

Phase 2 – North Topeka Levee Unit

Begin Design: Oct 2010
Complete Design and Reviews: Jan 2012

Phase 3 – South Topeka Levee Unit

Begin Design: Jan 2012
Complete Design and Reviews: Apr 2013

Phase 4 – Waterworks/Auburndale Levee Units

Begin Design: Jan 2012
Complete Design and Reviews: Apr 2013

Specific milestone schedules for future phases will be developed at the beginning of each phase.