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

REPLY TO
ATTENTION OF

CENWD-RBT

29 APR 2013

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

SUBJECT: Review Plan (RP) Approval for Blue River Basin, Dodson Industrial District, Flood Damage Reduction Project, Kansas City District, Northwestern Division

1. References:

a. RP for Swopes Blue River Basin, Dodson Industrial District, Flood Damage Reduction Project, Kansas City District, Northwestern Division (Encl. 1).

b. EC 1165-2-214, Civil Works Review, 15 Dec 2012.

2. Reference 1.a. above has been prepared in accordance with reference 1.b. above.

3. The RP has been coordinated with the Business Technical Division, Northwestern Division, U.S. Army Corps of Engineers, and with the Risk Management Center (RMC). The RP includes District Quality Control (DQC), Agency Technical Review (ATR), and Type II Independent External Peer Review (IEPR). NWD will be the Review Management Organization (RMO) for the ATR, while the RMC will be the RMO for the Type II IEPR. The RMC endorses the revised plan and recommends approval (encl. 2).

4. The NWD RMO Point of Contact is Steve Bredthauer at (503) 808-4053. The RMC Point of Contact is Tom Bishop at (303) 963-4556.

5. I hereby approve this RP, which is subject to change as circumstances require, consistent with the study development process and the Project Management Business Process. Subsequent revisions to this Review Plan or its execution will require written approval from this office.

6. For further information, please contact Mr. Steve Bredthauer at (503) 808-4053.

Encls

ANTHONY C. FUNKHOUSER, P.E.
BG, USA
Commanding

DEPARTMENT OF THE ARMY
KANSAS CITY DISTRICT, CORPS OF ENGINEERS
635 FEDERAL BUILDING
601 E. 12TH STREET
KANSAS CITY, MISSOURI 64106-2824

REPLY TO
ATTENTION OF

CENWK-ED

17 April 2013

MEMORANDUM FOR Commander, Northwestern Division, USACE

SUBJECT: Blue River Basin, Dodson Industrial District, Flood Damage Reduction Project Review Plan, Kansas City, Kansas, Kansas City District, Northwestern Division, Review Plan Submittal

1. Enclosed for Major Subordinate Command (MSC) Commander approval is the Blue River Basin, Dodson Industrial District, Flood Damage Reduction Project Review Plan. The review plan was prepared according to EC 1165-2-214, Civil Works Review.

2. The District point of contact (POC) for questions or requests for additional information may be referred to Mr. Kent Myers, Project Manager, at (816) 389-3399 or email at Kent.N.Myers@usace.army.mil.

David L. Mathews, P.E.
Chief, Engineering Division
Kansas City District

Encl 1

REVIEW PLAN

Blue River Basin, Dodson Industrial District, Flood Damage Reduction Project
Kansas City, Missouri
Implementation Phase

Kansas City District
Northwestern Division

P2#: 113386
AMSCO No.: 012563
MSC Approval Date: Pending
Date: April 16, 2013

US Army Corps
of Engineers ®

REVIEW PLAN

Blue River Basin, Dodson Industrial District, Flood Damage Reduction Project
Kansas City, Missouri
Implementation Phase

Kansas City District
Northwestern Division

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1. PURPOSE AND REQUIREMENTS

Purpose. This Review Plan defines the scope and level of review for the implementation phase of the Blue River Basin, Dodson Industrial District, Flood Damage Reduction Project, Kansas City, Missouri, Kansas City District, Northwestern Division. A separate review plan will be developed for the planned Limited Reevaluation Report.

a. References

(1) Engineering Circular (EC) 1165-2-214, *Civil Works Review*, 15 Dec 2012
(2) EC 1105-2-412, *Assuring Quality of Planning Models*, 31 Mar 2011
(3) Engineering Regulation (ER) 1110-1-12, *Quality Management*, 30 Sep 2006
(4) ER 1105-2-100, *Planning Guidance Notebook*, Appendix H, *Policy Compliance Review and Approval of Decision Documents*, Amendment #1, 20 Nov 2007
(5) US Army Field Manual 5-19, *Composite Risk Management*, 21 August 2006
(6) 20110516 Ph IV Draft PMP for Blue River Basin, PMP dated 31 May 2011

b. References. This review plan 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.

c. Project Authority. The Blue River Basin, Dodson Industrial District, project was authorized by the Water Resources Development Act of 1996 (PL 104-303), October 12, 1996. 5 Sep 96 Chief's Report

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION – NWK and RMC

The RMO is responsible for managing the overall review effort described in this Review Plan. Typically the Risk Management Center performs RMO duties for a project in the implementation phase of levee projects. For the Blue River Basin, Dodson Industrial District (hereafter referred to as Dodson) project, the RMC recommends that Northwestern Division (NWD) perform the RMO duties for the ATR portion of this project. The RMC will be the RMO for the Independent External Peer Review (IEPR) of the implementation documents.

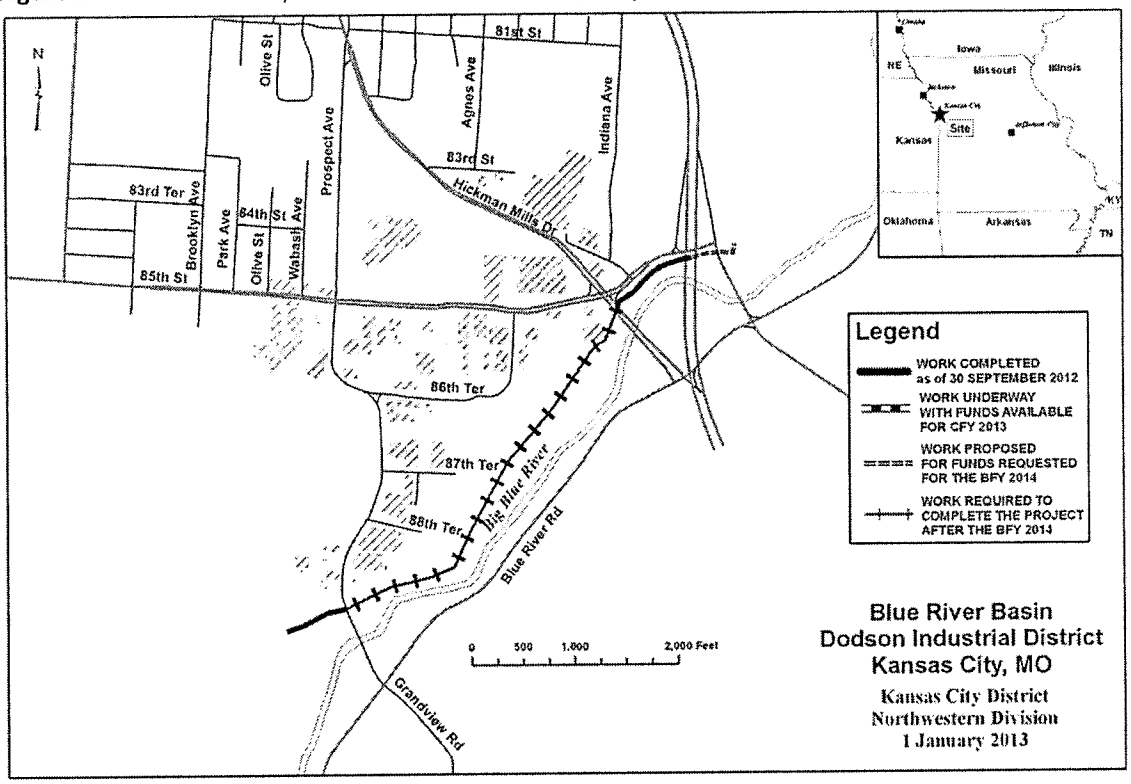
3. DESIGN INFORMATION

a. Implementation Documents. The implementation documents are plans, specifications, design documentation reports (DDR), and operations and maintenance (O&M) manuals for the remaining phases of the project. These documents are used as a detailed plan for construction of the remaining project features. The implementation documents do not require congressional authorization as the design is consistent with scope of the authorized project. No updates to the National Environmental Policy Act (NEPA) documentation will be necessary.

b. Project Description. The project is located along the left descending bank of the Blue River from U.S. 71 Highway upstream for a distance of 1.25 miles to the Bannister Federal Complex levee in Kansas City, Jackson County, Missouri. The completed project provides protection to the industrial area from the 0.2% annual chance of exceedence flood. Project features include 5,600 feet of levee, floodwalls, and gates varying in height from 10 to 56 feet high. The top of levee at the upstream end is approximately 806 feet NGVD[1] and the levee elevation at the downstream end is approximately 800 feet NGVD. The project is cost shared with the non-Federal sponsor, the City of Kansas City, Missouri (KCMO).

c. Project History. The Dodson project construction consists of five contract phases. The first three phases are complete. The remaining phase designs and constructs approximately 5,000 feet of levee and floodwall. The figure below depicts the various Dodson completed or future construction projects.

Figure 1. Blue River Basin, Dodson Industrial District, Project View



[1] National Geodetic Vertical Datum

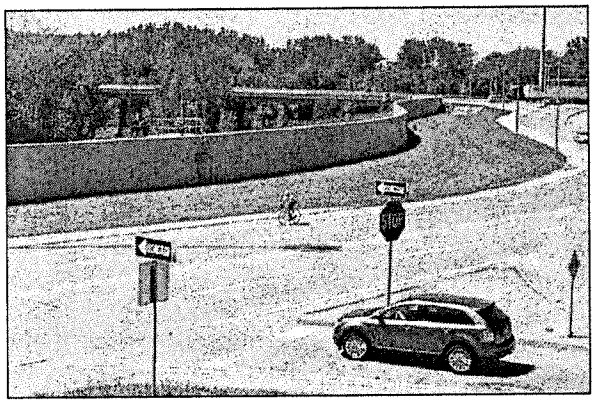


Figure 2. Completed (2005) Dodson Floodwall.

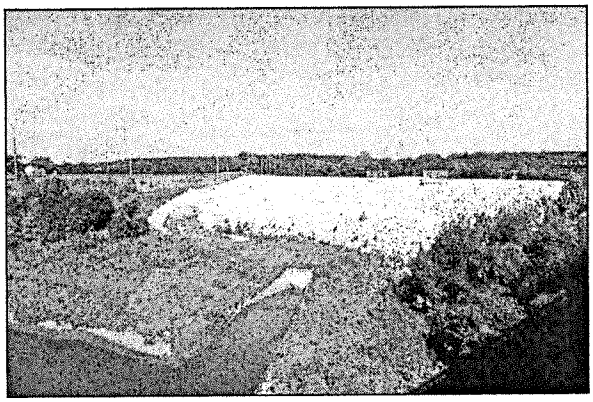


Figure 3. Completed (2009) Boone Creek Levee.

d. **Project Status.** The project is moving forward to complete design. The table below outlines the status of the project's phases.

Project Phase	Contracts	Status (as of January 2013)**
Phase I	Contract 1: Construction of the Floodwall	Completed in Nov 2004
Phase II	Contract 2: Construction of the upstream end of the floodwall	Completed in Jul 2007
Phase III	Contract 3: Construction of the earthen levee	Completed in Jun 2011
Phase IV	Contract 4: Construction of stability berms for gatewell construction	Contract closeout scheduled for May 2013
Phase V	Contract 5: Construction of the remaining earthen levee, four drainage structures and utility relocations	Design in progress

**O&M manual development for each contract is ongoing.

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

- **Life Safety.** The project includes levees and floodwalls that protect human life. It is critical that these features are designed to current criteria, and are designed, constructed and ultimately perform as intended.

- **Project Cost**. The total cost of the project is estimated at $46,000,000.00 (FY12 Basis). This cost includes preliminary engineering and design, completion of the design, reviews required by law, construction supervision and administration, contracting costs, project management, quality assurance labor costs, LERRD (lands, easements, rights of way, relocations, and disposal) costs, project coordination team costs, construction and sponsor cost.

f. Factors considered but not deemed influential.

- The engineering employed to support the implementation documents is structural design, hydraulics and hydrology, and geotechnical evaluation.

- The design and design methods in the implementation documents are not based on novel methods, do not present complex challenges for interpretation, do not contain precedent-setting methods or models, and do not present conclusions that are likely to change prevailing practices.

- This project does not have significant environmental impacts nor does it disturb known cultural or historically significant sites. Little to no public controversy exists due to complete work nor is it expected. The project has experienced strong public support from the local community.

g. In-Kind Contributions. No in-kind contributions are currently authorized or anticipated.

4. DISTRICT QUALITY CONTROL (DQC)

All implementation documents (including supporting data, analyses documents, etc.) will 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 will manage DQC. Documentation of DQC activities is required in accordance with the Quality Manual of the District and the home MSC. The District's Chief of Engineering and Chief of Geotechnical Branch oversee DQC.

a. Conduct of DQC, AE-Developed Products. A-E developed products are not expected for the remainder of the Dodson project due to the near completion of the design for the remaining features of the project.

b. Conduct of DQC, District-Developed Products. For products developed by the District, the District conducts both QC and QA. QC at this level is conducted by the PDT and includes peer review and an interdisciplinary review, with a focus on ensuring the design meets current criteria and standards, and is technically acceptable. QA is conducted by the district and includes oversight on the quality control processes, a legal review, and a Biddability, Constructibility, Operability, Environmental, and Sustainability (BCOES) review prior to advertisement of a construction contract. Other basic quality tools used on the project include a Quality Management Plan (QMP) and established Business and Quality Procedures (BQPs) used to ensure quality procedures are followed.

c. Documentation of DQC. DQC documentation is provided to the ATR team at the start of the ATR review. In-house designers will produce the remaining Dodson Phase IV implementation documents with quality procedures followed as described in the district's Business Quality Processes (BQPs).

d. DQC Review Descriptions.

(1) **Peer Reviews.** The District conducts peer reviews as part of DQC. The peer review is conducted by a peer in the same discipline who double checks calculations, criteria,

assumptions, and other design details used in the design, specifications, and DDR. A certification is prepared once issues raised by the reviewers are addressed to the review team's satisfaction. Indication of this concurrence is documented by signing a quality assurance certification statement by the District's Project Development Team (PDT).

(2) **AE's Product Reviews.** AE-developed products are not anticipated at this time.

(3) **Interdisciplinary Review.** The District conducts an interdisciplinary review on District-developed products. This review ensures the work developed by one discipline does not conflict or interfere with the work of another discipline. As the project progresses, check prints or draft documents will be provided to all members of the PDT. Each member will check other discipline's work for coordination with their work and comment on work by other team members that does not appear to satisfy criteria or client requirements. Included is a review of correctness of application of methods, validity of assumptions, adequacy of basic data, correctness of calculations, and completeness of documentation, compliance with guidance and standards, and BCOES considerations. The term "interdisciplinary review" for the purpose of this document is synonymous to the internal portion of the "PDT Review" defined in Chapter 3 of ER 1110-1-12.

(4) **Plan in Hand Review.** Before a construction contract is advertised, the PDT (and AE, if applicable) conducts a plan in hand review. Aptly named, this review is conducted onsite with the plans "in hand". The PDT, including construction branch and field office representatives, conducts the review. This review is to determine if any significant changes to the site have occurred since the last site visit and to visualize the completed plan from the perspective of standing at the site. Following the plan in hand, the PDT tech lead will produce a memorandum to document comments and the planned resolution of any issues.

e. Products to Undergo DQC. Plans, specifications, DDRs, and O&M manuals for each phase receive DQC.

f. Timing of DQC. DQC on each product is completed prior to ATR of the particular product, with the exception of the plan in hand review and BCOES review, which occur after ATR but before advertisement of a construction contract.

5. AGENCY TECHNICAL REVIEW (ATR)

ATR is mandatory for all implementation documents (including supporting data, analyses, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR assesses whether the analyses presented are technically correct and comply with published USACE guidance, and that the document explains the analyses and results in a reasonably clear manner for the public and decision makers. ATR is managed within USACE by the designated RMO and is conducted by a qualified team from outside the home district that is not involved in the day-to-day production of the project/product. ATR teams are comprised of senior USACE personnel and supplemented by outside experts as appropriate. The ATR team lead is from outside the home MSC.

a. Products to Undergo ATR. Plans, specifications, DDRs, (design documents) and O&M manuals for Contract 5 and any additional contracts will receive ATR.

b. Timing of ATR. ATR on each product is completed after the DQC, and may occur concurrently with the Type II IEPR of the particular product.

c. Required ATR Team Expertise.

ATR Team Members/Disciplines	Expertise Required
ATR Lead (All Remaining Phases)	The ATR team leader shall hold a professional license in structural, geotechnical, or civil engineering with a BS degree or higher in civil, geotechnical or structural engineering. The ATR leader shall have a minimum of 15 years of design experience and experience with multi-million dollar flood risk management projects. The team leader shall be a recognized leader with good communication skills to lead a diverse review team comprised of individuals located at various districts across the nation. The ATR lead should be a senior professional with extensive experience in preparing Civil Works implementation documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR leader may also serve as a reviewer for one of the specific disciplines below, if applicable.
Hydraulic Engineering (All Remaining Phases)	The reviewer for hydraulics shall be a registered professional engineer with a minimum of a BS degree or higher in engineering science. The reviewer shall have a minimum of 10 years experience in hydrologic analysis and design of hydraulic structures as it relates to riverine flood risk management projects. Reviewer should have experience in the analysis and design involving interior drainage and riverine models using hydrology models HEC-HMS, stormwater model SWMM, and hydraulic models HEC-RAS. This member should also be knowledgeable in coincidence of frequency and the application of USACE risk and uncertainty analyses on flood risk management projects. Reviewer should be experienced with similar projects in an urban setting and should have participated in review of riverine flood risk management projects.
Geotechnical Engineering (All Remaining Phases)	The reviewer for geotechnical features shall be a registered professional engineer with a minimum BS degree or higher in civil or geotechnical engineering. Reviewer shall have a minimum of 10 years experience in subsurface investigations, floodwall and levee design, auger cast pile or drilled shaft foundations, seepage and slope stability evaluations, erosion protection design, and construction and earthwork construction. The reviewer must be familiar with USACE regulations and standards.
Structural Engineering (All Remaining Phases)	The reviewer for structural features shall be a registered professional engineer with a BS degree or higher in civil or structural engineering. The reviewer shall have a minimum of 10 years experience in the design, layout, and construction of large flood risk management projects. Reviewer should be familiar

	with the design and construction of tall (15 feet high) flood walls, closure structures, interior drainage facilities, concrete placement, and relocation of underground utilities. The reviewer should have experience with USACE design regulations for Civil Works projects.

d. Documentation of ATR. DrChecks review software is used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments are limited to those that are required to ensure adequacy of the product. The PDT will work with the PM to ensure resolution of all issues raised by USACE reviews. The four key parts of a quality review comment will normally include:

(1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;
(2) The basis for the concern – cite the appropriate law, policy, guidance, or procedure that has not be properly followed;
(3) The significance of the concern – indicate the importance of the concern with regard to its potential impact on the plan selection, recommended plan components, efficiency (cost), effectiveness (function/outputs), implementation responsibilities, safety, Federal interest, or public acceptability; and
(4) The probable specific action needed to resolve the concern – identify the action(s) that the reporting officers must take to resolve the concern.

In some situations, especially addressing incomplete or unclear information, comments may seek clarification in order to then assess whether further specific concerns may exist.

e. ATR Comment Resolution. When resolution on ATR comments is not readily achievable, the RMO should engage the MSC subject matter experts (SMEs) to help facilitate resolution, and they in turn may choose to engage HQUSACE SMEs. The Agency Technical Review team will identify significant issues that they believe are not satisfactorily resolved and will note these concerns in the Technical Review Certification documentation. The ATR team will prepare a Review Report which includes a summary of each unresolved issue. Review Reports will be considered an integral part of the ATR documentation.

Significant unresolved ATR concerns that are documented by the RMO are forwarded through the MSC to the HQUSACE RIT, including basic research of USACE guidance and an expression of desired outcome, for further resolution. HQUSACE may choose to defer the issue to the policy compliance review process or address it directly. At this point the ATR documentation for the concern may be closed with a notation that the concern has been elevated for resolution by HQUSACE. Subsequent submittals of reports for MSC and/or HQUSACE review and approval shall include documentation of the issue resolution process.

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any ensuing discussion, including any vertical coordination, and lastly the agreed upon resolution.

ATR is certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. Before the ATR certification is completed, the PDT shall ensure that all agreed upon changes have been incorporated into the final product. For those cases where commitments are made to incorporate changes in the next phase of work, agreed upon deferrals shall be documented in the ATR certification. The ATR Lead will prepare a statement of technical review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR is required for all decision and implementation documents with exceptions. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-214, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- Type I IEPR. All decision documents will conduct a Type I review unless specific conditions warrant. The Flood Risk Management Planning Center of Expertise (FRM-PCX) would perform RMO duties for this review. Since a separate organization is the RMO, a separate review plan would be developed for decision documents.

- Type II IEPR. Type II IEPR, or Safety Assurance Review (SAR), are managed outside the USACE and are conducted on design and construction activities for any project where potential hazards pose a significant threat to human life (public safety). Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health, safety and welfare. A Type II review will be conducted on the design and construction of Dodson's remaining project features.

a. Decision Matrix on the Type II IEPR. It is recommended that the remaining design, based on the analysis provided in Attachment 3, which comprehensively includes all remaining features to be constructed, should receive a Type II IEPR. The risk informed decision explicitly considered:

- Whether requests to conduct IEPR from a head of a Federal or state agency charged with reviewing the project. None were received.

- Whether the proposed project meets the criteria for conducting Type II IEPR described in Paragraph 2 of Appendix E of EC 1165-2-214, including:

    - Whether the project would pose a significant threat to human life (public safety). A levee protects lives that work and live relying on the levee to reduce the risk of flooding.

    - Whether the project involves the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations,

contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices. The project does not use innovative materials or techniques but will utilize typical methods and materials utilized for construction.

- Whether the project design requires redundancy, resiliency, and robustness.

  (1) Redundancy. Redundancy is the duplication of critical components of a system with the intention of increasing reliability of the system, usually in the case of a backup or fail-safe. The design does require redundancy. Regular inspections and a planned maintenance program will greatly reduce the threat of failure by the flood reduction features of the project.

  (2) Resiliency. Resiliency is the ability to avoid, minimize, withstand, and recover from the effects of adversity, whether natural or manmade, under all circumstances of use. The project will require resiliency against high flood flows that can be damaging.

  (3) Robustness. Robustness is the ability of a system to continue to operate correctly across a wide range of operational conditions (the wider the range of conditions, the more robust the system), with minimal damage, alteration or loss of functionality, and to fail gracefully outside of that range. The project will require robustness due to the size of the drainage area upstream of the project and having an authorized level of protection for the 500-year design storm.

- Whether the project has unique construction sequencing or a reduced or overlapping design construction schedule; for example, significant project features accomplished using the Design-Build or Early Contractor Involvement (ECI) delivery systems. The project does not have a unique construction sequence or reduced/overlapping design construction schedule. Design-Build is not anticipated. Normal contracting methods are planned for the remaining contracts.

b. Products to Undergo Type II IEPR. The Type II IEPR will be conducted on plans, specifications, and DDR for the remaining features to be constructed.

c. Timing of IEPR. Type II IEPR occurs after DQC and either concurrent with ATR or after ATR, depending on schedules. The IEPR team performs reviews (and site visits, as necessary) at the completion of the plans and specifications, at the midpoint of construction, and other important milestones as determined by the RMO. The current plan is to conduct Type II IEPR on the plans, specifications, and DDR in order to have a fully reviewed design during FY14 pending funding.

d. Required Type II IEPR Panel Expertise. The IEPR team consists of 3 members. The AE firm that is eventually selected to perform this project's IEPR will include a project manager to serve as the team leader. See Attachment 1 for a list of the IEPR team members. The IEPR team is coordinated through the Risk Management Office.

External panels will conduct reviews of the design and construction activities prior to the initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule as required. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health, safety, and welfare.

The Review Management Organization (RMO) for Type II IEPR reviews is the Risk Management Center (RMC). Panel members will be selected using the National Academies of Science (NAS) policy for selecting reviewers. Type II IEPR is not exempted by statute from the Federal Advisory Committee Act (FACA).

The IEPR will be performed by an AE firm, using a USACE Indefinite Delivery Indefinite Quantity (IDIQ) Contract. The AE firm will provide the USACE with the final independent external expert reviewer list, including their credentials. Expert reviewers shall have experience in design and construction of projects similar in scope to the project. Expert reviewers shall be registered professional engineers in the United States, or similarly credentialed in their home country. The expert reviewers must have an engineering degree. A Master's degree in engineering is preferable, but not required, as hands-on relevant engineering experience in the listed disciplines is also important. Expert reviewers shall have a minimum of 15 years experience and responsible charge of engineering work in the following disciplines (at a minimum):

The Type II IEPR panel members will be comprised of individuals that have not been involved in the development of the decision document and implementation document, meet the National Academy of Sciences guidelines for independence, and will be chosen by an outside organization. The following types of expertise may be represented on the Type II IEPR team:

IEPR Panel Members/Disciplines	Expertise Required
Structural	The reviewer for structural features shall be a registered professional structural engineer with a MS degree or higher in civil or structural engineering. The reviewer shall have a minimum of 15 years experience in the design, layout, and construction of large urban flood risk management projects. Reviewer should be familiar with the design and construction of tall (15 feet high) flood walls, closure structures, interior drainage facilities, box culverts, drilled shafts, and concrete placement. The reviewer should have experience USACE design regulations for Civil Works projects.
Geotechnical	The reviewer for geotechnical features shall be a registered professional engineer with a minimum BS degree or higher in civil or geotechnical engineering. Reviewer shall have a minimum of 15 years experience in subsurface investigations, floodwall and levee design, drilled shafts, seepage and slope stability evaluations, erosion protection design, and construction and earthwork construction. The reviewer must be familiar with USACE regulations and standards.
Hydraulics/Hydrology	The reviewer for hydraulics shall be a registered professional engineer with a minimum of a MS degree or higher in engineering science. The reviewer shall have a minimum of 15 years experience in hydrologic analysis and design of hydraulic structures as it relates to riverine flood risk management projects. Reviewer should have experience in the analysis and design involving interior drainage and riverine models using HEC-RAS, stormwater models using SWMM, and hydrology models using HEC-HMS. This member should also be knowledgeable in

IEPR Panel Members/Disciplines	Expertise Required
	coincidence of frequency and the application of USACE risk and uncertainty analyses on flood risk management projects. Reviewer should be experienced with similar projects in an urban setting and participated in review of riverine flood risk management projects.

e. Panel Selection. When selecting panel members, the National Academy of Sciences' policy for committee selection with respect to evaluating the potential for conflicts (e.g., those arising from investments; agency, employer, and business affiliations; grants, contracts and consulting income) shall be adopted or adapted. Peer reviewers shall not have participated in development of the submittal to be reviewed. External Reviewers will be paid labor and any necessary travel and per diem expenses in accordance with their contract.

Peer reviewers will be advised whether information about them (name, credentials, and affiliation) will be disclosed. The RMO shall notify reviewers in advance regarding the extent of disclosure and attribution planned by USACE. The RMO shall comply with the requirements of the Privacy Act. Review shall be conducted in a manner that respects confidential business information and intellectual property.

f. IEPR Panel Approval. The RMO will approve the panel members selected by the AE. The RMO may only disapprove a selected panel member if the member does not meet the objective criteria established in this review plan.

g. IEPR Charge. The RMO will prepare the charge to the reviewers, containing the instructions regarding the objective of the peer review and the specific advice sought. Reviewers shall be charged with reviewing scientific and technical matters, leaving policy determinations for USACE and the Army. The charge should specify the structure of the review comments to fully communicate the reviewer's intent by including: the comment, why it is important, any potential consequences of failure to address, and suggestions on how to address the comment. It should include specific technical questions while also directing reviewers to offer a broad evaluation of the overall document. The charge should be determined in advance of the selection of the reviewers.

The District shall provide reviewers with sufficient information, including background information about the project, to enable them to understand the data, analytic procedures, and assumptions. Reviewers shall be informed of applicable access, objectivity, reproducibility and other quality standards under the federal laws governing information access and quality. Information distributed for review must include the following disclaimer: "This information is distributed solely for the purpose of pre-dissemination review under applicable information quality guidelines. It has not been formally disseminated by USACE. It does not represent and should not be construed to represent any agency determination or policy."

The panel of experts established for a review for a project shall:

- Conduct the review for the subject project in a timely manner in accordance with the study and RP schedule;
- Follow the "Charge", but when deemed appropriate by the team lead, request other products relevant to the project and the purpose of the review.
- Receive from USACE any public written and oral comments provided on the project;

- Provide timely written and oral comments throughout the development of the project, as requested;
- Assure the review avoids replicating an ATR and focuses on the questions in the "Charge", but the panel can recommend additional questions for consideration. The IEPR panel may recommend to the RMO additional or alternate questions.
- Offer any lessons learned to improve the review process.
- Submit reports in accordance with the review plan milestones.
- The team panel lead shall be responsible for insuring that comments represent the group, be non-attributable to individuals, and where there is lack of consensus, note the non-concurrence and why.
- Record of Review. The review team will prepare a review report. All review panel comments shall be entered as team comments that represent the group and be non- attributable to individuals. The team lead is to seek consensus, but where there is a lack of consensus, note the non-concurrence and why. A suggested report outline is an introduction, the composition of the review team, a summary of the review during design, a summary of the review during construction, any lessons learned in both the process and/or design and construction, and appendices for conflict of disclosure forms, for comments to include any appendices for supporting analyses and assessments of the adequacy and acceptability of the methods, models, and analyses used. All comments in the report will be finalized by the panel prior to their release to USACE for each review plan milestone.

h. Documentation of Type II IEPR. The IEPR panel will be selected and managed in accordance with EC 1165-2-214, Appendix E. A contractor may be used to carry out the IEPR including selecting panel members. Panel comments will be compiled by the contractor and should address the adequacy and acceptability of the economic, engineering and environmental methods, models, and analyses used. IEPR comments should generally include the same four key parts as described for ATR comments in Section 5.c above. The contractor will prepare a final Review Report that will accompany the publication of the final decision document and shall:

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

After receiving the report from the IEPR panel, the District will consider all comments contained in the report and prepare a written response for all comments and note concurrence and subsequent action or non-concurrence with an explanation. The District Chief of Engineering shall submit the panel's report and the Districts responses shall be submitted to the MSC for final MSC Commander approval, and then make the report and responses available to the public on the District's website (http://www.nwk.usace.army.mil/Missions/CivilWorks/CivilWorksProgramsandProjects/CivilWorksReviewPlans.aspx).

7. POLICY AND LEGAL COMPLIANCE REVIEW

The Kansas City District Office of Counsel is responsible for legal review of implementation documents and signs a certification of legal sufficiency prior to construction of the project.

8. REVIEW SCHEDULES AND COSTS.

This section will discuss ATRs and Type II IEPR yet to be completed on the Dodson project. Phase 1, 2, and 3 were completed prior to the first approved review plan and prior to EC-1165-2-209/214.

a. Contract 5: Construction of the remaining earthen levee, four drainage structures and utility relocations. The design will be completed to a 95-percent level in the 1st quarter of FY2014 and will undergo review at that time. The schedule is currently being updated.

CONTRACT 5 ATR SCHEDULE	
Action/Activity	**Calendar Days After ATR Start**
DQC Complete; review documents and ATR charge sent to ATR Team	0
ATR milestone to enter comments in DrChecks	14
NWK milestone to complete DrChecks evaluations	25
NWK PDT completes revisions	35
ATR DrChecks back checks complete	40
ATR certification form signed	40
ATR final report complete	45
Report sent to RMO	46
CONTRACT 5 ATR COST	
Discipline	**Estimated Labor Cost**
ATR Team Lead	$1000
Supporting Disciplines	$7000 ea. @ 4 =$28,000
TOTAL	$29,000

b. O&M manual (per each; 5 total O&M manuals are needed)

O&M MANUAL ATR SCHEDULE	
Action/Activity	**Calendar Days After ATR Start**
DQC Complete; review documents and ATR charge sent to ATR Team	0
ATR milestone to enter comments in DrChecks	14
NWK milestone to complete DrChecks evaluations	25
NWK PDT completes revisions	35
ATR DrChecks back checks complete	40
ATR certification form signed	40
ATR final report complete	45

Report sent to RMO	46
O&M MANUAL ATR COST	
Discipline	**Estimated Labor Cost**
ATR Team Lead	$1000
Supporting Disciplines	$3000 ea. @ 4 =$12,000
TOTAL	$13,000

c. **Dodson Type II IEPR**

Deliverable (D) or Milestone (M)	Action/Activity	Calendar Days After NTP*
M	Type II IEPR Safety Assurance Review NTP	0
D	Submit Final Peer Review QCP (PRQCP)	14
D	Submit list of final IEPR expert reviewers	14
M	Expert reviewers under contract	21
D	Peer Review Critical Items List	35
M	Corps provides materials for Orientation Briefing	35
M	Orientation Briefing at Kansas City MO and KS	42
M	Final Charge to Expert Reviewers	56
M	Corps provides 95% Plans & Specs and DDR to IEPR Contractor	70
M	95% Plans & Specs and DDR Review Complete	84
M	95% Plans & Specs and DDR Review Comments Closed in DrChecks	98
D	Comment Review Conference Call	100
D	Submit IEPR Review Report on 95% Plans & Specs and DDR	128
M	Corps provides 50% Construction Documentation to IEPR Contractor	300
M	50% Construction Documentation Review Complete	314
M	50% Construction Documentation Review Comments Closed in DrChecks	328
D	Comment Review Conference Call	330
D	Submit IEPR Review Report on 50% Construction Documentation	358
M	Corps provides OMRR&R Documentation to IEPR Contractor	480
M	OMRR&R Documentation Review Complete	494
M	OMRR&R Documentation Review Comments Closed in DrChecks	508
D	Comment Review Conference Call	510
D	Submit IEPR Review Report on OMRR&R	538

Deliverable (D) or Milestone (M)	Action/Activity	Calendar Days After NTP*
	Documentation	
D	Submit Final IEPR SAR Report	600
M	Project Closeout	720

*This table will be updated as the project progresses. Days are estimates.

d. Type II IEPR Cost. The IEPR is expected to cost $150,000 - $250,000. Type II IEPR costs are cost shared between the Federal and Non-Federal sponsor in accordance with the project partnership agreement.

9. PUBLIC PARTICIPATION

Public comments are part of a decision document development and will not be part of this review plan.

10. REVIEW PLAN APPROVAL AND UPDATES

The Northwestern Division Commander is responsible for approving this Review Plan. The Commander's approval reflects vertical team input (involving district, MSC, RMO, RMC, and HQUSACE members as applicable) as to the appropriate scope and level of review for the implementation documents. Like the PMP, the Review Plan is a living document and may change as the project progresses. The home district is responsible for keeping the Review Plan up to date. Significant changes to the Review Plan (such as changes to the scope and/or level of review) should be re-approved by the MSC Commander following the process used for initially approving the plan. The latest version of the Review Plan, along with the Commanders' approval memorandum, should be posted on the Home District's webpage. The latest Review Plan should also be provided to the RMO and home MSC.

11. REVIEW PLAN POINTS OF CONTACT

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

District Quality Control
Kansas City District.....Mr. Kent Myers (816) 389-3399
Review Management Office
Northwestern Division.....Mr. Stephen Bredthauer (503) 808-4053
Review Coordination
Risk Management Center..... .....Mr. Tom Bishop (303) 963-4556

--Attachments follow--

ATTACHMENT 1: Team Rosters

District-level names will be redacted on the version posted for public comment to protect privacy.

Project Delivery Team

Name	District	Discipline
Kent Myers	CENWK	Project Management
Craig Weltig	CENWK	Civil
John Calcara/Glen Bellew*	CENWK	Geotechnical
Glen Covington	CENWK	Environmental
Steve Jirousek	CENWK	Geology
Kellen Huffman	CENWK	Hydraulics/Hydrology
Clint Mason/Bill Moeller	CENWK	Structural
Pat Miramontez	CENWK	Cost Estimating
Bob Schoen	CENWK	Construction
Carla Buatte	CENWK	Real Estate

*Technical Lead

Vertical Team

Name	District	Discipline
Steven Bredthauer	CENWD	Quality Assurance Manager
Tom Bishop	CEIWR-RMC	Civil Engineer

Agency Technical Review Team (all Phases)

Name	District	Discipline
Charlie Little	ERDC	ATR Team Lead
TBD		Structural
TBD		Geotechnical Engineer
TBD		Hydraulics/Hydrology

BCOES Certifiers and Quality Assurance Team for In-House Products

District	Discipline
CENWK	Chief Construction Branch
CENWK	Chief Construction Division
CENWK	Chief Geotechnical Engineering Branch
CENWK	Chief Engineering Division

IEPR Reviewers (for both the design and implementation phases)

Name	Firm	Discipline
TBD	TBD	IEPR Team Lead
TBD	TBD	Structural
TBD	TBD	Hydraulics/Hydrology
TBD	TBD	Geotechnical

ATTACHMENT 2: Sample Statement of Technical Review for Implementation Documents

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 DrChecks[sm].

SIGNATURE _____ _____
[Name] Date
ATR Team Leader
[Office Symbol or Name of AE Firm]

SIGNATURE _____ _____
[Name] Date
Project Manager (home district)
[Office Symbol]

SIGNATURE _____ _____
[Name] Date
Review Management Office Representative
[Office Symbol]

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: *Describe the major technical concerns and their resolution and specifically list any agreed-upon deferrals to be completed in the next phase of work.*

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

SIGNATURE _____ _____
[Name] Date
Chief, Engineering Division
[Office Symbol]

ATTACHMENT 3: Documentation of Type II IEPR Risk-Informed Decision

The project is in the implementation phase and therefore does not require a Type I IEPR. This attachment documents the vertical team's risk informed recommendation to conduct Type II IEPR.

The following table, based on the US Army Field Manual 5-19, *Composite Risk Management*, was used to assess each identified risk.

Risk Assessment Matrix

	Risk Probability			
Risk Severity	**Frequent**	**Likely**	**Seldom**	**Unlikely**
Catastrophic	Extremely High	Extremely High	High	Moderate
Critical	Extremely High	High	Moderate	Low
Marginal	High	Moderate	Moderate	Low
Negligible	Moderate	Low	Low	Low

The following table details the risks, frequency, severity, risk assessment, and how the risk contributes to the IEPR decision. The risks were developed by reviewing the IEPR triggers from EC 1165-2-214.

Type II IEPR Risk Assessment for Implementation Documents

Risk	Risk Probability	Risk Severity	Risk Assessment	Risk Contributes to IEPR Decision?	Notes
Project poses a significant threat to human life	Unlikely	Catastrophic	Moderate	Yes	The completed project will have some effect on the threat to human life. This is a flood damage reduction project in an urban area.
Project involves the use of innovative materials or techniques where the engineering is based on novel methods, presents complex challenges for interpretations, contains precedent-setting methods or models, or presents conclusions that are likely to change prevailing practices	Unlikely	Marginal	Low	No	This project does not involve any innovative materials or techniques based on novel methods or complex challenges.
The project design requires redundancy, resiliency, and robustness to minimize risk of failure	Seldom	Critical	Moderate	Yes	
The project has unique construction sequencing or a reduced or overlapping design construction schedule	Seldom	Marginal	Moderate	Yes	
Risk of a faulty or incomplete design making it to construction	Seldom	Marginal	Moderate	No	DQC and ATR by personnel with experience on similar projects will mitigate the risk of faulty or incomplete design
Risk of contractor misinterpreting design which results in project failure	Unlikely	Catastrophic	Moderate	No	Construction quality control procedures will mitigate this risk.

Based on the above assessment, it is the risk-informed recommendation of the vertical team that Type II IEPR is required for this project.

DEPARTMENT OF THE ARMY
RISK MANAGEMENT CENTER, CORPS OF ENGINEERS
12596 W. BAYAUD AVENUE SUITE 400
LAKEWOOD, CO 80228

REPLY TO
ATTENTION OF
CEIWR-RMC-WD

CEIWR-RMC

24 April 2013

MEMORANDUM FOR: Commander, Kansas City District, ATTN: CENWK-PM-CJ

SUBJECT: Risk Management Center Endorsement – Blue River Basin, Dodson Industrial District, Kansas City, Missouri, Review Plan

1. The Risk Management Center (RMC) has reviewed the Review Plan (RP) for the Blue River Basin, Dodson Industrial District project, dated April 2013, and concurs that this RP provides for an adequate level of peer review and complies with the current peer review policy requirements outlined in EC 1165-2-214 "Civil Works Review", dated 15 December, 2012.

2. This review plan was prepared by the Kansas City District, reviewed by the Northwestern Division and the RMC, and all review comments have been satisfactorily resolved.

3. The RMC endorses this document to be approved by the MSC Commander. Upon approval of the RP, please provide a copy of the approved RP, a copy of the MSC Commander's approval memorandum, and a link to where the RP is posted on the District website to Tom Bishop, RMC Senior Review Manager (thomas.w.bishop@usace.army.mil).

4. Thank you for the opportunity to assist in the preparation of this RP. Please coordinate all aspects of the Type II IEPR. For further information, please do not hesitate to contact me at (303) 963-4556.

Sincerely,

BISHOP.THOMAS.WALDRON.1228686030

THOMAS W. BISHOP, P.E.
Senior Review Manager
Risk Management Center

CF:
CEIWR-RMC-ZA (Mr. Snorteland)
CENWD (Division Quality Manager)

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