DEPARTMENT OF THE ARMY
SOUTHWESTERN DIVISION, CORPS OF ENGINEERS
1100 COMMERCE STREET, SUITE 831
DALLAS TX 75242-1317

REPLY TO
ATTENTION OF

CESWD-RBT

05 SEP 2013

MEMORANDUM FOR Commander, Little Rock District

SUBJECT: Review Plan approval for May Branch, Ft. Smith, Arkansas

1. Reference: EC 1165-2-214, Civil Works Review, 15 Dec 2012.

2. The attached Review Plan for May Branch, Ft. Smith, Arkansas has been prepared in accordance with EC 1165-2-214. This project consists of a 2.77 mile long channel to convey flood waters from May Branch to the Arkansas River. The Little Rock Chief of Engineering and Construction Division has determined that a Safety Assurance Review is not required. Therefore, the review plan does incorporate an independent external peer review for design.

3. I hereby approve the Review Plan, which is subject to change as circumstances require, for design of the subject project by Little Rock District. It has been coordinated with RMC.

4. The point of contact for this action is Mr. Michael Jordan at Michael.Jordan@usace.army.mil or office phone 469-487-7035.

Encl

THOMAS W. KULA
Brigadier General, USA
Commanding

REVIEW PLAN

May Branch, Fort Smith, Arkansas
Preconstruction Engineering and Design

Little Rock District

P2 #105054
MSC Approval Date: 24 February 2010
Last Revision Date: 8 August 2013
MSC Approval of Revised Review Plan Date: 5 September 2013

US Army Corps
of Engineers ®

REVIEW PLAN

May Branch, Fort Smith, Arkansas
Preconstruction Engineering and Design

TABLE OF CONTENTS

1. PURPOSE AND REQUIREMENTS

a. Purpose. This Review Plan defines the scope and level of peer review for the May Branch, Fort Smith, Arkansas, Preconstruction Engineering and Design (PED). Appropriations for this project may not be forthcoming; thus making the schedule uncertain. The sponsor is pursuing the acceleration of its expenditures for design and construction. If Federal funds are not appropriated, the sponsor would proceed with the construction of the first reach of the project. This review plan focuses on the first design and construction contracts for Reach 1 with a 65 percent level of design for the entire project to estimate the cost for the authorized project. Review team members and information will be added as the project progresses. Significant changes will require the review plan to be reapproved.

b. 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) May Branch PED PMP with QMP, October 2008

c. Requirements. 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. In addition to these levels of review, decision documents are subject to cost engineering review and certification (per EC 1165-2-214) and planning model certification (per EC 1105-2-412).

This Review Plan will be reviewed by the PDT and approved by the Southwestern Division MSC. After approval, this Review Plan will be posted on the Little Rock District website at: http://www.swl.usace.army.mil/Missions/Planning/ApprovedProjectReviewPlans.aspx.

2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION

The RMO is responsible for managing the overall peer review effort described in this Review Plan. The RMO for this implementation document is the MSC. There shall be appropriate coordination and processing through CoPs, relevant PCXs, and other relevant offices to ensure that a review team with appropriate independence and expertise is assembled and a cohesive and comprehensive review is accomplished.

(1) Independent External Peer Review (IEPR). IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside of USACE is warranted. IEPR is generally for feasibility and reevaluation studies and modification reports with Environmental Impact Statements (EISs). IEPR is managed by an outside eligible organization (OEO) that is described in Internal Revenue Code Section 501(c) (3), is exempt 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 the underlying planning, engineering, including safety assurance, economics, and environmental analyses performed, not just one aspect of the project.

(2) Safety Assurance Review. In accordance with Section 2035 of 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 of the design and construction activities prior to initiation of physical construction and periodically thereafter until construction activities are completed on a regular schedule sufficient to inform the Chief of Engineers on the adequacy, appropriateness, and acceptability of the design and construction activities for the purpose of assuring public health, safety, and welfare. A future circular will provide a more comprehensive Civil Works Review Policy that will address the review process for the entire life cycle of a Civil Works project. That document will address the requirements for a safety assurance review for the Pre-Construction Engineering Phase, the Construction Phase, and the Operations Phase. Review would include the relevancy and effectiveness of the Corps inspection of completed works and safety programs in promoting safety and competent performance. The decision document phase is the initial design phase; therefore, EC 1105-2-410 requires that safety assurance factors be considered in all reviews for decision document phase studies.

(3) Model Certification/Approval. EC 1105-2-407 requires certification (for Corps models) or approval (for non-Corps models) of planning models used for all planning activities. The EC defines planning models as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision-making. The EC does not cover engineering models used in planning. Engineering software is being address under the Engineering and Construction (E&C) Science and Engineering Technology (SET) initiative. Until an appropriate process that documents the quality of commonly used engineering software is developed through the SET initiative, engineering activities in support of planning studies shall proceed as in the past. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed.

3. PROJECT INFORMATION

a. Decision Document. May Branch, Fort Smith, Arkansas, is an authorized flood damage reduction project. The Preconstruction Engineering and Design documents will be approved by Little Rock District; however, the project partnership agreement will be approved by ASA(CW). NEPA documentation, an Environmental Assessment, was done in the feasibility phase. Public review did not result in significant interagency interest or controversy.

b. Study/Project Description. May Branch flows through a covered conduit within the city limits of Fort Smith, the sponsor, into the Arkansas River. Flooding causes an estimated $1,800,000 in average annual damages. The project would consist of 2.77-mile long open channel to convey flood waters from the May Branch Basin to the Arkansas River. The new channel alignment would require 13 structure relocations, 4 rail crossings, 9 road crossings (1 bridge, 8 covered channel crossings), and a gated hydraulic control structure at the Fort Smith (Arkansas River) Levee. At the gated structure, the culvert through the levee extends upstream to include the first rail crossing). The channel bank will be protected with RENO mattress from channel bottom to top bank with 1:3 side slopes. Approximately halfway upstream there will be a 400-foot distance of below top bank, concrete vertical-sided channel in order to fit between high ground on the right bank looking downstream and a concrete block plant on the left bank. From Greenwood Rd. downstream to the Arkansas River, the channel bottom will be concrete (approximately 1.5 miles); upstream of Greenwood, the channel bottom will be natural (stone). The sponsor requested the concrete channel bottom and the RENO mattresses up to top bank as betterments.

The project would nearly eliminate the flood damages expected to be caused by a 1 percent chance of occurrence flood event. The project was authorized by the Water Resources Development Act of 2007 based on the Report of the Chief of Engineers dated December 19, 2006, at a total cost of $30,850,000, with an estimated Federal cost of $15,010,000 and an estimated non-Federal cost of $15,840,000.

c. Factors Affecting the Scope and Level of Review.
Some of the more complex design will be for the gated structure, railroad crossings with traffic management plans, a distance below top bank, concrete vertical- sided channel, and bridges. However, the design will be standard with none of the design considered to be innovative, precedent –setting, unduly complicated, or vulnerable.

A risk during construction would be Arkansas River flooding and /or May Branch flooding. The construction schedule will have to take into account Arkansas River flows such that there is not backwater flooding into the lower section of the May Branch channel while at the same time channeling through to the Arkansas River as soon as feasible to alleviate any upstream flooding that may occur along May Branch.

Project capacity exceedance is unlikely to cause significant loss of life. With the ample alternatives to reroute traffic around any structure that had signs of loss of capacity, the project would maintain evacuation effectiveness. Project capacity exceedance would not cause greater flood damage than would have occurred prior to project construction and the project would still provide some flood reduction. There is redundancy with outlets for May

Branch to the Arkansas River as the gated structure will have the backup of the maintained existing pumping station and outlet.

The channel width was sized sufficiently robust to accommodate flows that might occur slightly more frequent than originally determined. If a breach occurred below top bank, concrete vertical-sided channel that is located within a business's property limits occurred, the general public would not be at risk as the public does not have access to that location. Surveys will be checked against aerial photography and site visit information. Previous geotechnical information will be checked against currently obtained geotechnical information to spot check the design effort. The design schedule does not overlap other design or construction.

d. In-Kind Contributions. The expected in-kind contributions to be provided by the sponsor are design team coordination activities that will not require peer review.

4. DISTRICT QUALITY CONTROL (DQC)

DQC is the most direct of the technical reviews. It is as internal district review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the Project Management Plan (PMP). This review shall be robust to include training and coaching of the PDT, review of PDT products by senior leaders, and after action reviews. Senior district leaders overseeing planning, engineering, real estate, and project management (and other disciplines as necessary) are responsible for and expected to be directly involved in DQC. Quality checks and reviews occur during the development process and are carried out as routine management practice. All civil works planning, engineering, and Operation & Maintenance (O&M) products undergo DQC. Documentation of DQC activities should be in accordance with the Quality Manual of the Little Rock District and Southwestern Division. The DQC team members are listed in Attachment 1. At a minimum the DQC team member shall have the following expertise as listed below -

DQC Team Members/Disciplines	**Expertise Required**
DQC Lead	**The DQC lead should be a senior professional with experience in preparing Civil Works design documents and conducting DQC. The lead should also have the necessary skills and experience to lead a team through the DQC process. The DQC lead may also serve as a reviewer for a specific discipline (such as civil or structural engineering, etc).**
DQC Geotechnical Reviewer	**Team member will be experienced in levee, closure structure, channel, culvert, & bridge foundation design. A licensed professional engineer is recommended.**
DQC Cost Engineering	**Team member will be familiar with cost estimating for similar civil works projects using MCACES.**

DQC Civil Design	**Team member will have experience in utility relocations, drainage channels, road and sidewalk design, and railroad relocations. A certified professional engineer is suggested.**
DQC Structural Design	**Team member will have a thorough understanding of an outlet structure through a levee, channel retaining walls and invert, vehicular and railroad bridges and culverts, and repairs to an existing storm sewer. A certified professional engineer is required.**
DQC Electrical Design	**Team member will have a thorough understanding of electrical motors, lightening and electrical utility relocations. A certified professional engineer is required.**
DQC Mechanical Design	**Team member will have a thorough understanding of hydraulically operated gated structures. A certified professional engineer is required.**
DQC Constructability	**Team member will have construction experience in drainage channels, vertical channel walls, road culverts and bridges, and railroad culverts. A certified professional engineer is recommended.**

Documentation of DQC: A comment-response document in Microsoft Word will be used to document DQC comments, responses, and associated resolutions done throughout the review process. This documentation will be supplied to the ATR Team upon initiation of each ATR event.

5. AGENCY TECHNICAL REVIEW (ATR)

General. ATR is mandatory for implementation documents. The ATR shall be conducted by professionals outside of the home district comprised of senior USACE personnel, preferably recognized subject matter experts with the appropriate technical expertise such as regional technical specialists (RTS), 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. The MSC shall serve as the RMO.

ATR efforts will include the necessary expertise to address compliance with applicable published policy. When policy and/or legal concerns arise during ATR efforts that are not readily and mutually resolved by the PDT and the reviewers, the district will seek issue resolution support from the MSC and HQUSACE in accordance with the procedures outlined in ER 1105-2-100 (Appendix H), or other appropriate guidance.

a. Products to Undergo ATR. ATR will be done on the 90 percent design.

b. Required ATR Team Expertise.

ATR Team +Members/Disciplines	Expertise Required
ATR Lead	**The ATR lead should be a senior professional with extensive experience in preparing Civil Works design documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. The ATR lead may also serve as a reviewer for a specific discipline (such as civil or structural engineering, etc).**
ATR Geotechnical Reviewer	**Team member will be experienced in levee, channel, culvert, & bridge foundation design . A licensed professional engineer is recommended.**
ATR Cost Engineering	**Team member will be familiar with cost estimating for similar civil works projects using MCACES. Team member will be a Certified Cost Technician, Certified Cost Consultant, or Certified Cost Engineer. A separate process and coordination is also required through the Walla Walla District DX for cost engineering.**
ATR Civil Design	**Team member will have experience in utility relocations, drainage channels, roads and sidewalk, and railroad relocations. A certified professional engineer is suggested.**
ATR Structural Design	**Team member will have a thorough understanding of an outlet structure through a levee, channel retaining walls and invert, vehicular and railroad bridges and culverts, and a hydraulic control structure, and repairs to an existing storm sewer. A certified professional engineer is required.**
ATR Electrical Design	**Team member will have a thorough understanding of electrical motors, lightening and electrical utility relocations. A certified professional engineer is required.**
ATR Mechanical Design	**Team member will have a thorough understanding of Hydraulically operated gated structures. A certified professional engineer is required.**

c. Documentation of ATR. DrChecks review software will be used to document all ATR comments, responses and associated resolutions accomplished throughout the review process. Comments should be limited to those that are required to ensure adequacy of the product. The four key parts of a quality review comment will normally include:

1) The review concern – identify the product's information deficiency or incorrect application of policy, guidance, or procedures;

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

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

The ATR documentation in DrChecks will include the text of each ATR concern, the PDT response, a brief summary of the pertinent points in any discussion, including any vertical team coordination (the vertical team includes the district, RMO, MSC, and HQUSACE), and the agreed upon resolution. If an ATR concern cannot be satisfactorily resolved between the ATR team and the PDT, it will be elevated to the vertical team for further resolution in accordance with the policy issue resolution process described in either ER 1110-1-12 or ER 1105-2-100, Appendix H, as appropriate. Unresolved concerns can be closed in DrChecks with a notation that the concern has been elevated to the vertical team for resolution.

At the conclusion of the ATR effort, the ATR team will prepare a Review Report summarizing the review. Review Reports will be considered an integral part of the ATR documentation and shall:

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

ATR may be certified when all ATR concerns are either resolved or referred to the vertical team for resolution and the ATR documentation is complete. The ATR Lead will prepare a Statement of Technical Review certifying that the issues raised by the ATR team have been resolved (or elevated to the vertical team). A Statement of Technical Review should be completed, based on work reviewed to date. A sample Statement of Technical Review is included in Attachment 2.

6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)

IEPR may be required for decision documents under certain circumstances. IEPR is the most independent level of review, and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team

outside of USACE is warranted. A risk-informed decision, as described in EC 1165-2-214, is made as to whether IEPR is appropriate. IEPR panels will consist of independent, recognized experts from outside of the USACE in the appropriate disciplines, representing a balance of areas of expertise suitable for the review being conducted. There are two types of IEPR:

- Type I IEPR. Type I IEPR is not applicable for this project. The decision document was completed in 2006 prior to the requirement for Type I IEPR.

- 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 hurricane, storm, and flood risk management projects or other projects where existing and potential hazards pose a significant threat to human life. Type II IEPR panels will conduct reviews of the design and construction activities prior to initiation of physical construction and, until construction activities are completed, periodically thereafter on a regular schedule. The reviews shall consider the adequacy, appropriateness, and acceptability of the design and construction activities in assuring public health safety and welfare.

Decision on IEPR. Type II IEPR, SAR, is not required. The project does not have potential hazards that pose a significant threat to human life (public safety). On 8 August 2013, the CESWL Chief of Engineering and Construction Division determined that SAR is not required for the design and construction of this flood risk management project. Attachment 3

7. MODEL CERTIFICATION AND APPROVAL

EC 1105-2-412 mandates the use of certified or approved models for all planning activities to ensure the models are technically and theoretically sound, compliant with USACE policy, computationally accurate, and based on reasonable assumptions. Planning models, for the purposes of the EC, are defined as any models and analytical tools that planners use to define water resources management problems and opportunities, to formulate potential alternatives to address the problems and take advantage of the opportunities, to evaluate potential effects of alternatives and to support decision making. The use of a certified/approved planning model does not constitute technical review of the planning product. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

EC 1105-2-412 does not cover engineering models. The responsible use of well-known and proven USACE developed and commercial engineering software will continue and the professional practice of documenting the application of the software and modeling results will be followed. As part of the USACE Scientific and Engineering Technology (SET) Initiative, many engineering models have been identified as preferred or acceptable for use on Corps studies and these models should be used whenever appropriate. The selection and application of the model and the input and output data is still the responsibility of the users and is subject to DQC, ATR, and IEPR (if required).

a. Planning Models. The following planning models are anticipated to be used:

- HEC-FDA 1.2.5 (**Certified**). The Hydrologic Engineering Center's Flood Damage Reduction Analysis (HEC-FDA) program provides the capability for integrated

hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using risk-based analysis methods. The program may be used to evaluate designed plan increments along May Branch in Fort Smith, Arkansas to aid in the selection of a design plan increment to manage flood risk and for updating benefits.

b. Engineering Models. The following engineering models are anticipated to be used:

- HEC-RAS 4.0. (**HH&C CoP Preferred Model**). The Hydrologic Engineering Center's River Analysis System (HEC-RAS) program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations. The program will be used for steady flow analysis to evaluate design changes and betterments that differ from the feasibility study design that are required or requested by the sponsor along May Branch.
- MCACES OR MII (**CoP Preferred**) Cost estimating models.

8. REVIEW SCHEDULES AND COSTS

Project information will be provided to the reviewers prior to initiation of the review. See Attachment 2 for review schedule.

a. DQC Schedule and Cost

The cost for DQC is broken out separately from PDT costs; however DQC will occur seamless throughout the P&S working with the A/E. Quality checks and reviews occur during the development process and are carried out as a routine management practice. The District Quality Control reviews will cost approximately $35,000 each with a total estimate of $70,000. See Attachment 2 for additional details.

b. ATR

The ATR review will cost approximately $40,000. See attachment 2 for additional details.

c. Model Certification.

All the models anticipated to be used, including their schedule and costs, are already certified or approved for use.

9. PUBLIC PARTICIPATION

Following DQC of the 65 percent design, the project will be presented to the public for comment.

A copy of the May Branch Feasibility Report and Environmental Assessment can be found at: http://www.swl.usace.army.mil/Missions/Planning/CurrentStudiesandProjects.aspx

10. REVIEW PLAN APPROVAL AND UPDATES

http://www.swl.usace.army.mil/Missions/Planning/CurrentStudiesandProjects.aspx

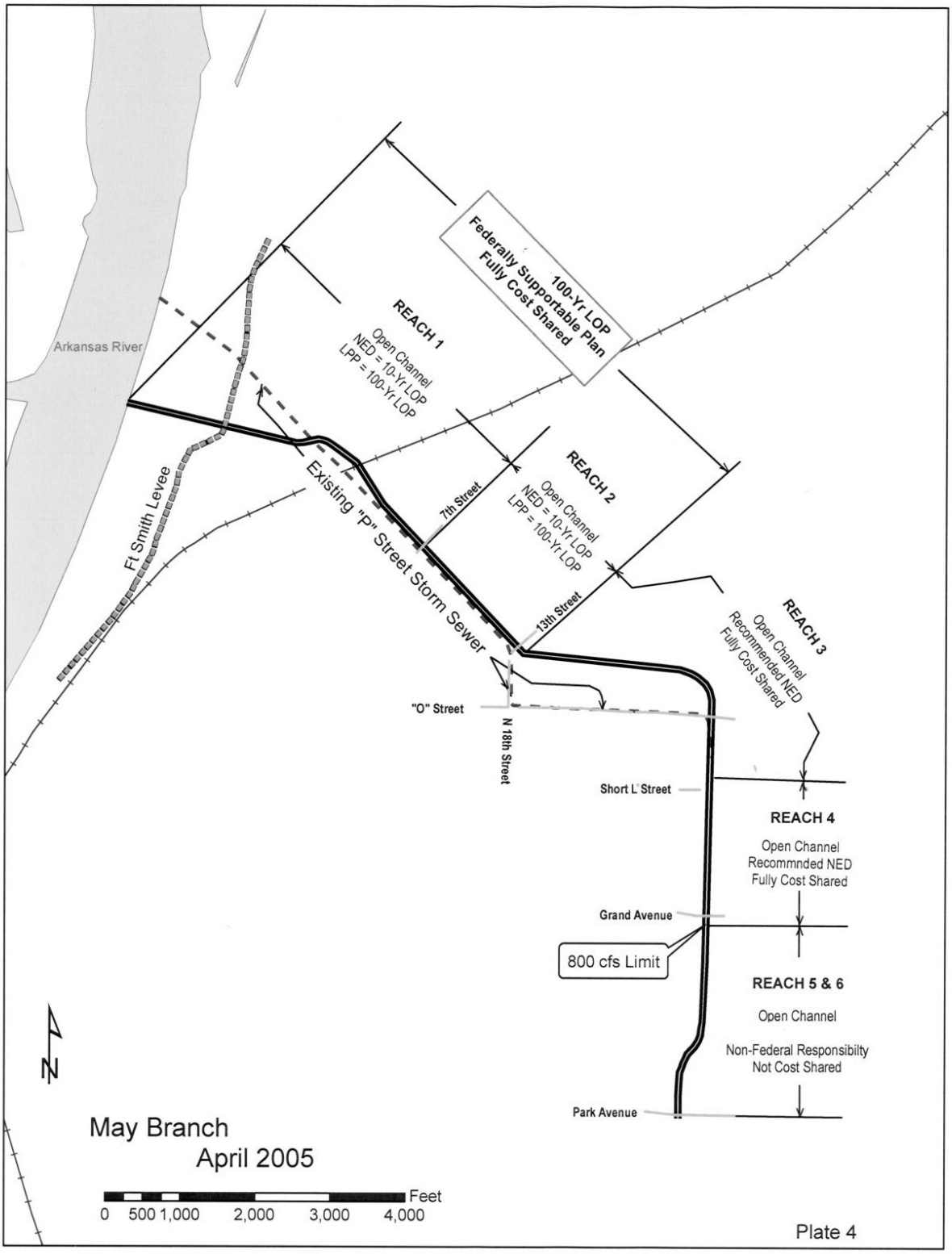
The Southwestern Division Commander is responsible for approving this Review Plan. Like the PMP, the Review Plan is a living document and may change as the study progresses. The home district is responsible for keeping the Review Plan up to date. Minor changes to the review plan since the last MSC Commander approval are documented in Attachment 3. 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.

11. REVIEW PLAN POINTS OF CONTACT

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

- SWL Project Manager, Julia Smethurst, 501.324.5602
- SWD Review Manager, Mike Jordan, P.E. 469.487.7069
- FRM-PCX Program Manager, Eric Taut, 415.503.6862

ATTACHMENT 1: MAPS


Arkansas River
Federally Supportable Plan
Fully Cost Shared
100-Yr LOP
REACH 1
Open Channel
NED = 10-Yr LOP
LPP = 100-Yr LOP
REACH 2
Open Channel
NED = 10-Yr LOP
LPP = 100-Yr LOP
REACH 3
Open Channel
Recommended NED
Fully Cost Shared
Ft Smith Levee
Existing "P" Street Storm Sewer
7th Street
13th Street
"O" Street
N 18th Street
Short L Street
REACH 4
Open Channel
Recommnded NED
Fully Cost Shared
Grand Avenue
800 cfs Limit
REACH 5 & 6
Open Channel
Non-Federal Responsibilty
Not Cost Shared
Park Avenue
N
May Branch
April 2005
Feet
0 500 1,000 2,000 3,000 4,000
Plate 4

ATTACHMENT 2: TEAM ROSTERS AND SCHEDULE

A. TEAMS - Info not included

B. SCHEDULE

Activity Name	**Start**	**Finish**
Initiate P&S	21 Oct 08	
65% Design		31 Aug13
DQC	1 Sep 13	30 Sep 13
(Do Coordination)		
Sign Amend No. 2 Design Agreement		
(obtain funding to resume PED)		16 Dec 13
DQC	14 Feb 14	28 Feb 14
90% Design		28 Feb 14
ATR	3 Mar 14	1 Apr 14
100% Design		2 May14

* Construction initiation Reach-1 expected to be done by sponsor
* COE Construction TBD/ Dependent on Fed Funding

ATTACHMENT 3:

CESWL-EC 8 August 2013

MEMORANDUM FOR RECORD

SUBJECT: May Branch, Fort Smith, Arkansas, Project, Type II IEPR-Safety Assurance Review (SAR) Determination

I have determined that a safety assurance review is not necessary for the design and construction activities of the authorized May Branch flood risk management project that is currently being designed in Little Rock District. The project would consist of a 2.77-mile long open channel to convey flood waters from the May Branch Basin to the Arkansas River. The new channel alignment would require 13 structure relocations, 4 rail crossings, 9 road crossings (1 bridge, 8 covered channel crossings), and a gated hydraulic control structure at the Fort Smith (Arkansas River) Levee. There are no potential hazards in this project that pose a significant threat to human life.

Anthony J. Batey, PE
Chief, Engineering & Construction Division
Little Rock District

ATTACHMENT 4: SAMPLE STATEMENT OF TECHNICAL REVIEW

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the *<type of product>* for *<project name and location>*. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of EC 1165-2-209. 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/Company

SIGNATURE _____ _____

Name Date
Project Manager
Office Symbol

SIGNATURE _____ _____

Name Date
Architect Engineer Project Manager[1]
Company, location

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.*

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 5: REVIEW PLAN REVISIONS

Revision Date	Description of Change	Page / Paragraph Number
24 February 2010	Date of Original Review Plan	
5 Dec 2012	Updated to conform to latest guidance and update the schedule for reviews	
8 Aug 2013	Revised to meet review comments on Dec 12 draft	
5 Sep 2013	**Updated Review Plan approved**	

ATTACHMENT 6: ACRONYMS AND ABBREVIATIONS

Term	Definition	Term	Definition
AFB	Alternative Formulation Briefing	NED	National Economic Development
ASA(CW)	Assistant Secretary of the Army for Civil Works	NER	National Ecosystem Restoration
ATR	Agency Technical Review	NEPA	National Environmental Policy Act
CSDR	Coastal Storm Damage Reduction	O&M	Operation and maintenance
DPR	Detailed Project Report	OMB	Office and Management and Budget
DQC	District Quality Control/Quality Assurance	OMRR&R	Operation, Maintenance, Repair, Replacement and Rehabilitation
DX	Directory of Expertise	OEO	Outside Eligible Organization
EA	Environmental Assessment	OSE	Other Social Effects
EC	Engineer Circular	PCX	Planning Center of Expertise
EIS	Environmental Impact Statement	PDT	Project Delivery Team
EO	Executive Order	PAC	Post Authorization Change
ER	Ecosystem Restoration	PMP	Project Management Plan
FDR	Flood Damage Reduction	PL	Public Law
FEMA	Federal Emergency Management Agency	QMP	Quality Management Plan
FRM	Flood Risk Management	QA	Quality Assurance
FSM	Feasibility Scoping Meeting	QC	Quality Control
GRR	General Reevaluation Report	RED	Regional Economic Development
Home District/MSC	The District or MSC responsible for the preparation of the decision document	RMC	Risk Management Center
HQUSACE	Headquarters, U.S. Army Corps of Engineers	RMO	Review Management Organization
IEPR	Independent External Peer Review	RTS	Regional Technical Specialist
ITR	Independent Technical Review	SAR	Safety Assurance Review
LRR	Limited Reevaluation Report	SWD	Southwestern Division
MSC	Major Subordinate Command	SWL	Little Rock District
MCDA	Multi-criteria decision analysis	USACE	U.S. Army Corps of Engineers
		WRDA	Water Resources Development Act