

CEMVD-PD-KM

MEMORANDUM FOR Commander, Vicksburg District

SUBJECT: McKinney Bayou Sec. 205 CAP Project Review Plan (PRP)

1. References:
  - a. EC 1165-2-209, Civil Works Review Policy, 31 Jan 2010.
  - b. Memorandum, CECW-CP, 19 Jan 2011, subject: Continuing Authority Program Planning Process Improvements.
  - c. Memorandum, CEMVK-PP-D, 01 Feb 2011, subject: Approval of Review Plan for McKinney Bayou Feasibility Study.
2. The attached Review Plan for the McKinney Bayou Section 205 Continuing Authorities Program has been prepared in accordance with EC-1165-2-209.
3. I hereby approve subject Review Plan and concur with the conclusion that external peer review of this project is not necessary for the following reasons: (1) there are no threats to human life/safety; (2) the governor has not requested peer review by independent experts; (3) the per-project implementation costs are below the proposed \$45 million threshold and; (4) the project does not require an Environmental Impact Statement.
4. The District should take steps to post the PRP to its web site and to provide a link to the Flood Risk Management PCX for their use. Before posting to the web site, the names of the Corps/Army employees should be removed.
5. The MVD point of contact is [REDACTED], CEMVD-PD-KM, [REDACTED].

Encl

[REDACTED]  
Brigadier General, USA  
Commanding

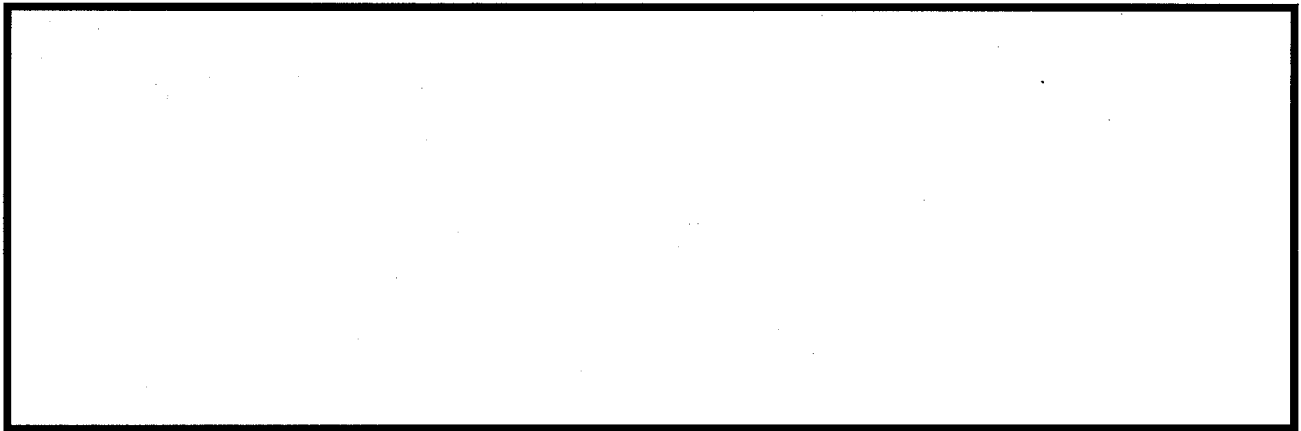
**Continuing Authorities Program  
Section 205, Flood Control Act of 1948, as amended  
Flood Risk Management Project Decision Documents**

**DECISION DOCUMENT REVIEW PLAN**

**McKinney Bayou Feasibility Detailed Project Report (DPR)  
with Environmental Assessment (EA)**

**Vicksburg District**

**MSC Approval Date:** *February 10, 2011*  
**Last Revision Date:** *January 20, 2011*



**US Army Corps  
of Engineers ®**

## **REVIEW PLAN**

### **Section 205, Flood Control Act of 1948, as amended Flood Risk Management Project Decision Documents**

#### **TABLE OF CONTENTS**

<b>1. PURPOSE AND REQUIREMENTS.....</b>	<b>1</b>
<b>2. REVIEW MANAGEMENT ORGANIZATION (RMO) COORDINATION.....</b>	<b>4</b>
<b>3. STUDY INFORMATION.....</b>	<b>4</b>
<b>4. DISTRICT QUALITY CONTROL (DQC).....</b>	<b>12</b>
<b>5. AGENCY TECHNICAL REVIEW (ATR).....</b>	<b>12</b>
<b>6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR).....</b>	<b>15</b>
<b>7. MODEL CERTIFICATION AND APPROVAL.....</b>	<b>15</b>
<b>8. REVIEW SCHEDULES AND COSTS.....</b>	<b>17</b>
<b>9. PUBLIC PARTICIPATION.....</b>	<b>18</b>
<b>10. REVIEW PLAN APPROVAL AND UPDATES.....</b>	<b>18</b>
<b>11. REVIEW PLAN POINTS OF CONTACT.....</b>	<b>18</b>

ATTACHMENT 1    ATR TEAM ROSTER AND ATR SCHEDULE AND COSTS

ATTACHMENT 2    PROJECT DELIVERY TEAM ROSTER

ATTACHMENT 3    SAMPLE STATEMENT OF TECHNICAL REVIEW FOR  
DECISION DOCUMENTS

ATTACHMENT 4    ACRONYMS AND ABBREVIATIONS

## 1. PURPOSE AND REQUIREMENTS

a. **Purpose.** This Review Plan is a supplement to the Project Management Plan (PMP) dated August 2004 for the McKinney Bayou, Tunica, Mississippi, Flood Risk Management project and fulfills the requirement of Engineer Circular (EC) 1165-2-209, "Civil Works Review Policy." This Review Plan defines the scope and level of peer review for the McKinney Bayou, Tunica, Mississippi, Flood Risk Management project decision document developed under **Section 205**, Flood Control Act of 1948, as amended. This project is a single purpose, Flood Risk Management Project.

**Section 205** of the Flood Control Act of 1948, as amended, authorizes the U.S. Army Corps of Engineers (USACE) to study, design, and construct flood risk management projects. It is a Continuing Authorities Program (CAP) which focuses on water resource related projects of relatively smaller scope, cost, and complexity. Traditional USACE Civil Works projects are of wider scope and complexity and are specifically authorized by Congress. The CAP is a delegated authority to plan, design, and construct certain types of water resource and environmental restoration projects without specific congressional authorization. The Federal share of costs for any one **Section 205** project may not exceed \$7,000,000.

**Applicability.** This review plan does not cover implementation products. A review plan for the design and implementation phase of the project will be developed prior to approval of the final decision document in accordance with EC 1165-2-209.

### b. References

- (1) ER 1110-1-12, "Quality Management," 30 September 2006.
- (2) ER 1105-2-100, "Planning Guidance Notebook," Appendix F, Continuing Authorities Program, Amendment #2, 31 January 2007.
- (3) ER 1105-2-100, "Planning Guidance Notebook," Appendix H, Policy Compliance Review and Approval of Decision Documents, Amendment #1, 20 November 2007.
- (4) EC 1105-2-412, "Assuring Quality of Planning Models," 31 March 2010.
- (5) EC 1165-2-209, "Civil Works Review Policy," 31 January 2010.
- (6) Director of Policy Civil Works' Memorandum #1, "Continuing Authority Program Planning Process Improvements," 19 January 2011.

c. **Requirements.** This review plan was developed in accordance with EC 1165-2-209 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 1165-2-209) and planning model certification/approval (per EC 1105-2-412).

(1) **District Quality Control/Quality Assurance (DQC).** All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC. The DQC is an internal review process of basic science and engineering work products focused on fulfilling the project quality requirements defined in the PMP. The home district shall manage DQC. Documentation of DQC activities is required and should be in accordance with the Quality Manual of the District and the home MSC.

(2) **Agency Technical Review (ATR).** ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.). The objective of ATR is to ensure consistency with established criteria, guidance, procedures, and policy. The ATR will assess 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 decisionmakers. The ATR is managed within USACE by a designated Review Management Organization (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. The ATR teams will be comprised of senior USACE personnel and may be supplemented by outside experts as appropriate.

The ATR team lead shall be from outside the home MSC.

(3) **Independent External Peer Review (IEPR).** The IEPR may be required for decision documents under certain circumstances. The IEPR is the most independent level of review and is applied in cases that meet certain criteria where the risk and magnitude of the proposed project are such that a critical examination by a qualified team outside the USACE is warranted. A risk-informed decision, as described in EC 1165-2-209, is made as to whether IEPR is appropriate. The IEPR panels will consist of independent, recognized experts from outside 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 is generally for decision documents, and Type II is generally for implementation products.

(a) **Type I IEPR.** Type I IEPR reviews are managed outside the USACE and are conducted on project studies. Type I IEPR panels assess the adequacy and acceptability of the economic and environmental assumptions and projections, project evaluation data, economic

analysis, environmental analyses, engineering analyses, formulation of alternative plans, methods for integrating risk and uncertainty, models used in the evaluation of environmental impacts of proposed projects, and an biological opinions of the project study. Type I IEPR will cover the entire decision document or action and will address all the underlying engineering, economics, and environmental work, not just one aspect of the study. For decision documents where a Type II IEPR (Safety Assurance Review) is anticipated during project implementation, safety assurance shall also be addressed during the Type I IEPR per EC 1165-2-209.

For Flood Risk Management decision documents, Type I IEPR is MANDATORY, unless approved for an exclusion under EC 1165-2-209 and the Director of Policy Civil Works' Memorandum #1, "Continuing Authority Program Planning Process Improvements," 19 January 2011.

(b) **Type II IEPR.** Type II IEPR, or Safety Assurance Review (SAR), is managed outside the USACE and is 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.

For **Section 205** projects, Type II IEPR may or may not be required.

(4) **Policy and Legal Compliance Review.** All decision documents will be reviewed throughout the study process for their compliance with law and policy. Guidance for policy and legal compliance reviews is addressed in Appendix H, ER 1105-2-100. These reviews culminate in determinations that the recommendations in the reports and the supporting analyses and coordination comply with law and policy and warrant approval or further recommendation to higher authority by the home MSC Commander. The DQC and ATR augment and complement the policy review processes by addressing compliance with pertinent published Army policies, particularly policies on analytical methods and the presentation of findings in decision documents.

(5) **Cost Engineering Review and Certification.** All decision documents shall be coordinated with the Cost Engineering Directory of Expertise (DX) located in the Walla Walla District.

(6) **Model Certification/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, formulate potential alternatives to address the problems and take advantage of the opportunities, and evaluate potential effects of alternatives and to support decisionmaking. However, according to the Director of Policy Civil Works' Memorandum #1, "Continuing Authority Program Planning Process Improvements," 19 January 2011, approval for planning models is NOT required on CAP projects. The MSC Commander is responsible for assuring the quality of the analysis used in these models. The ATR team will apply the principles of EC 1105-2-412 during the ATR to ensure the model is theoretically and computationally sound, consistent with USACE policies, and adequately documented.

## **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 **Section 205** decision documents is the FRM-PCX. The FRM-PCX will coordinate and approve the review plan and manage the ATR. The FRM-PCX will be responsible for administering the Type I IEPR. The home District will post the approved review plan on its public website. A copy of the approved review plan (and any updates) will be provided to the FRM-PCX to keep the PCX apprised of requirements and review schedules.

## **3. STUDY INFORMATION**

a. **Decision Document.** The McKinney Bayou, Tunica, Mississippi, Detailed Project Report (DPR) was prepared in accordance with ER 1105-2-100, Appendix F. The approval level of decision documents (if policy compliant) is the home MSC. An Environmental Assessment (EA) was prepared along with the DPR.

b. **Study/Project Description.** The McKinney Bayou project area, or the area affected by the implementation of water resource improvements, is the McKinney Bayou drainage basin for this study. It is located in Tunica County in northwest Mississippi approximately 40 miles north of Clarksdale, Mississippi, and 30 miles south of Memphis, Tennessee. The project area is primarily flat alluvial delta land. It is bounded on the west by the Mississippi River mainline levee and on the east by U.S. Highway 61 and the town of Tunica, Mississippi. The McKinney Bayou Basin consists of 42.6 square miles that drain on a southerly path for a maximum length of approximately 18 miles. It comprises approximately 27,300 acres, of which 9,425 acres are subject to flooding by the 100-year flood.

All of the area covered by the McKinney Bayou feasibility study lies within the Mississippi Delta. It is located in a vast flood plain of low relief and, until the construction of the levees, was subject to frequent flooding by the Mississippi and Yazoo Rivers. The watershed contains

meander scars, oxbow lakes, and abandoned channels that mark ancient river courses. Ground surface elevations generally range between 185 and 195 feet, National Geodetic Vertical Datum (NGVD), with relief greater than 10 feet being rare.

McKinney Bayou is the main drainage outlet for the continually developing area near the Tunica County community of Robinsonville, Mississippi, as well as the surrounding agricultural land and wetland areas. Currently, there is no natural gravity outlet for the drainage area. System drainage in the McKinney Bayou Watershed is conveyed by use of the 250-cubic-foot-per-second (cfs) Fox Island pump station located immediately adjacent to the mainline Mississippi River levee at the southern terminus of McKinney Bayou. Since 1917, pump stations of various types and sizes have been implemented to alleviate flooding conditions in the project area.

**c. Project Schedule.**

**PROJECT SCHEDULE**

Milestones/Reviews	Date
PMP Development	August 2004
Feasibility Cost-Sharing Agreement Signature	September 2004
ATR of AFB	13 August 2008
AFB Approval	17 December 2008
Agency Technical Review of Draft Detailed Project Report (DPR)	21 December 2009
Draft DPR Submitted to CEMVD	31 December 2009
Public Review of Draft DPR	July 2010
Agency Technical Review for Final DPR	September 2010
Submit Final DPR to CEMVD	February 2011

(1) **Alternatives.** A list of the preliminary alternatives is provided in the tabulation below.



## LIST OF PRELIMINARY ALTERNATIVES

Alternative	Brief Description
-	No-action plan.
NONSTRUCTURAL ALTERNATIVES	
-	Floodproofing, small walls, structure raising, relocation, acquisition and demolition.
STRUCTURAL ALTERNATIVES	
1A	Additional 100-cfs pump approximately 7 miles upstream of Fox Island pump station located at the lower end of Hollywood Brake.
1B	Additional 200-cfs pump approximately 7 miles upstream of Fox Island pump station located at the lower end of Hollywood Brake
2A	Increase existing pump at Fox Island pump station by 50 cfs and channel cleanout from existing pump to upper limit of reach.
2B	Increase existing pump at Fox Island pump station by 50 cfs, enlarge existing channel, and properly size all culverts.
3A	Identify storage volume needed to reduce flowline to desired level, identify best possible location for storage, and increase storage at or below existing elevation in Hollywood Brake.
3B	Identify storage volume needed to reduce flowline to desired level, identify best possible location for storage, and increase storage at depression located above White Oak Bayou.
4	Divert water through Irish Ditch into White Oak Bayou, channel excavation, and properly size all culverts.
5A	Channel excavation and properly sizing all culverts in conjunction with additional 100-cfs pump located below Hollywood Brake.
5B	Channel excavation and properly sizing all culverts in conjunction with additional 200-cfs pump located below Hollywood Brake.
6	Properly size all culverts.
7	Properly size all culverts and clean out channel (clearing and snagging).
8	Properly size all culverts and channel enlargement (30-foot bottom width).
8A	Properly size all culverts and channel enlargement (50-foot bottom width).

(2) **Project Costs for the Final Array of Alternatives.** Project costs for the final array of alternatives (i.e., the no-action plan and Alternatives 2B, 5A, 5B, and 8) are provided below. These are based on estimates generated in the Microcomputer-Aided Cost Estimation System (MCACES) in 2008. Although the no-action plan is included in the final array, there are no costs associated with this alternative.

**SUMMARY OF PRELIMINARY FIRST COSTS AND ANNUAL COSTS  
FINAL ARRAY OF ALTERNATIVES - IN DETERMINATION OF THE NED PLAN**

Item	Final Array Alternative			
	2B	5A	5B	8
<b>First Costs (\$000) a/</b>				
01 Lands and Damages	1,305.6	1,436.0	1,436.0	1,305.6
02 Relocations	1,333.7	1,404.3	1,404.3	1,333.7
13 Construction Features b/	5,916.9	7,963.8	9,029.9	2,109.7
30 Planning Engineering and Design (PED)	1,413.6	1,970.5	2,103.5	694.5
31 Construction Management	706.8	985.3	1,051.8	347.3
Total Construction Costs	10,676.6	13,760.0	15,025.5	5,790.8
Mitigation Costs	2,327.5	2,222.2	2,267.3	2,300.3
Total First Costs	13,004.1	15,982.3	17,292.8	8,091.0
Interest During Construction (IDC) c/	604.9	743.5	804.4	185.0
<b>TOTAL INVESTMENT COSTS</b>	<b>13,609.0</b>	<b>16,725.8</b>	<b>18,097.2</b>	<b>8,276.0</b>
<b>Annual Costs (\$000) d/</b>				
Sinking Fund	73.3	90.1	97.4	44.6
Interest	629.4	773.6	837.0	382.8
Operations, Maintenance, Repair, Rehabilitation, and Replacement (OMRRR)	40.1	93.5	93.5	13.5
<b>TOTAL ANNUAL COSTS</b>	<b>742.8</b>	<b>957.2</b>	<b>1,027.9</b>	<b>440.9</b>

NOTE: There are no costs associated with the no-action alternative.

a/ Values expressed in 2008 price levels. Project costs based on preliminary MCACES costs.

b/ Construction features for Alternatives 2B, 5A, and 5B include pump stations, channels and canals, and culverts. For Alternative 8, construction features include channels and canals and culverts.

c/ Costs were annualized using a 50-year economic project life; the current Federal interest rate of 4-5/8 percent.

d/ Based on a 2-year period of construction with an initial EPCD of 2011 for Alternatives 2B, 5A, and 5B.

e/ Based on a 1-year period of construction and an initial EPCD of 2010 for Alternative 8.

(3) **Project Costs for the Recommended Plan.** The recommended plan was selected based on the initial criteria of identifying an alternative that was economically justified, engineering implementable, and environmentally sustainable. Alternative 8 was the plan that best met these standards and also resulted in the National Economic Development (NED) plan.

The final detailed total project costs for the recommended plan were estimated to be \$7,880,986, excluding escalation. Based on these costs, the total project investment costs were estimated to be approximately \$8.0 million, including IDC of \$160,903, and annual costs of \$396,600. These are expressed in 2010 prices based on the final MCACES costs and 4-1/8 percent, the Federal interest rate for Fiscal Year 2011.

(4) **Project Risk Assessment.** A preliminary assessment of potential project risks, their magnitude, and their potential impact on the success of the project are displayed below:

#### PROJECT RISK ASSESSMENT

Project Risks	Level of Risk			Uncertainties	Impacts
	Low	Medium	High		
Flood Risk Management					
Human Population	X			None identified.	No threats to human life.
Public Safety	X			None identified.	Minimal threat to safety.
Environmental Justice	X			No social injustice identified.	No disproportionate or adverse impacts to minority and low-income populations.
Local Economic Indicators	X			No uncertainties identified. Developments planned regardless of a project.	No adverse impacts identified.
Regional Economy	X			No uncertainties identified. Developments planned regardless of a project.	No adverse impacts identified.
Hydrologic Parameters					
Streamflow Elevations	X			Very low risk of error.	Minimum adjustments to damages.
Project Failure	X			Low risk.	Increased flooding during high rainfall events; increased damages correlate with event.
Economic Parameters					
Structure Values	X			Very low risk of error.	Minimum adjustments to damages.
Structure Elevations	X			Very low risk of error.	Minimum adjustments to damages.
Depth-Damage Curves	X			Used IWR curves. Very low risk of error.	Minimum adjustments to damages.
Agricultural Practices	X			None identified.	Minimal impacts.

**PROJECT RISK ASSESSMENT (Cont)**

Project Risks	Level of Risk			Uncertainties	Impacts
	Low	Medium	High		
Harvesting Times	X			None identified.	Minimal impacts.
Project Costs	X			Low risk of error.	Project feasibility.
Project Feasibility	X			Use of fill benefit category.	Feasible BCR without fill benefits.
<b>Environmental Considerations</b>					
Water and Air Quality	X			Very low risk.	Minimal and temporary impacts. <u>a/</u>
Waterfowl Resources	X			Very low risk.	Minimal and temporary impacts. <u>a/</u>
Aquatic Resources	X			Very low risk.	Minimal and temporary impacts. <u>a/ b/</u>
Terrestrial Resources	X			Very low risk.	Minimal and temporary impacts. <u>a/ b/</u>
Wetland Resources	X			Very low risk.	Minimal and temporary impacts. <u>a/ b/</u>
HTRW	X			Very low risk.	Minimal and temporary impacts. <u>a/</u>
Recreation and Esthetics	X			None identified.	Minimal and temporary impacts. <u>a/</u>
Cultural Resources	X			None identified.	Minimal and temporary impacts. <u>a/</u>
T&E Species	X			Very low risk.	Minimal and temporary impacts. <u>a/</u>

a/ Impacts discussed in EA.

b/ Impacts fully compensated for through mitigation.

**d. Factors Affecting the Scope and Level of Review.** Various factors were used to determine the appropriate scope and level of review necessary for the project, including a risk assessment and checklist for the need of an IEPR. This information will also be used by the PDT, PCX, and vertical team to concur with the proposed level of review and types of expertise represented on the review teams. This review plan is based on the EC 1165-2-209 for project decision documents which are applicable to projects that do not have a total project cost in excess of \$45 million and do not require an EIS. This project has an estimated Federal cost of \$4.8 million and will not require an EIS. The DPR with EA will receive DQC prior to submission for ATR. A Type I IEPR will NOT be required for this study. This exclusion of an IEPR is supported by the following discussion:

- Project improvements include basic channel improvements. No major challenges are foreseen with implementing the project features.
  - Study evaluations were straightforward. No major issues were encountered. The project sponsor is in agreement with study results and proposed improvements. As part of the study team, their input has been invaluable. Transparency and open communication have been practiced. The local sponsor has kept the USACE PDT abreast of any local social issues or problems. No technical, institutional, and/or social challenges have been identified that would jeopardize the project.
  - Based on an evaluation of potential risks and uncertainties with the project, minimal impacts were identified, as outlined in the potential project risk table. It was determined that none of the identified factors would jeopardize project implementation. Any environmental impacts will be mitigated. The only concern for economic feasibility would result from significant unforeseen increases in project cost items.
- No influential scientific information has been identified associated with the study or project.
- No specific interagency interests or issues have been identified.
- No threats to human life/safety were identified.
  - There is little probability that the channel improvements would fail resulting in a catastrophic event. However, should the project design be exceeded, there could be additional flooding. But, based on field reconnaissance surveys during high water events in 2009, it was determined that the biggest threat would be to impassable streets and roadways. There does not appear to be any threat to human life or safety.
- Should failure or project design exceedance occur, no major life safety related issues or consequences have been identified. Safety assurance factors are described in EC 1165-2-209.
- The project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule.

- No significant impacts have been identified in regard to economic, environmental, and/or social effects to the Nation.
  - Additionally, for the CAP level of study, division-level guidance from CEMVD was provided that a Regional Economic Development (RED) evaluation or System of Accounts table with Other Social Effects (OSE) was not necessary. Furthermore, the project sponsor did not request this effort from USACE as a part of this study because they had previously contracted with a private firm for similar information.
  - This project will provide protection to several areas where future planned developments are occurring. The project alone will not yield economic growth, but, in combination with the thriving gaming industry north of the project area and other economic development plans, positive spinoff effects are expected to occur. This is discussed in the Economic Appendix.
- There are no highly controversial components to this project. However, there are a few issues which have been addressed in the DPR.
  - With a project, there are some increased stages in the lower sump which results in a minimum amount of induced flooding to agricultural properties, but no structures are impacted as none are flooded in the lower sump with or without a project. This is explained in the DPR. The increase in the average annual number of acres flooded (i.e., 90) are minimal and do not impact project feasibility. Also, flowage easements will be purchased to mitigate for induced damages and potential losses.
  - The benefit-cost ratio is basically reliant on agricultural FRM benefits; thus, the project will be a low priority for funding. The local sponsor has been informed and has acknowledged that it is aware of the low funding priority of this project due to the type of benefits claimed. Statements of these recognitions are documented in the Main Report.
  - In addition, some controversy could exist with the inclusion of fill benefits. This benefit category is discussed fully and with a great amount of detail in the Economic Appendix. Project benefit-cost ratios are shown with and without the inclusion of this category and still result in unity. Also, the project sponsor has been informed throughout the study that these would probably have a low budget priority in the funding process.

- No changes in methodology or methods were used in evaluating this project. The basic improvements were channel alternatives with features such as culvert replacements. Thus, no unapproved or controversial methodology or procedures were used.
  - The information in the decision document is not based on novel methods nor does it present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices.
  - All procedures were based on approved USACE methods based on ER 1105-2-100 and supporting regulations.
- The Governor has not requested peer review by independent experts.
- The project is anticipated to have negligible impacts to scarce or unique tribal, cultural, or historic resources.
- The project does not have a total project cost in excess of \$45 million.
- The project does not require an EIS.

e. **In-Kind Contributions.** No technical In-Kind Contributions were provided by the non-Federal Sponsor.

#### **4. DISTRICT QUALITY CONTROL (DQC)**

The DQC will be coordinated by the Project Manager with Functional Group Chiefs per District Standard Operating Procedures (SOP). The coordination will ensure that DQC reviewers have not been involved in preparation of the DPR or worked on the project during the study. Documentation for the DQC will be through DrChecks, and comments and resolutions will be available for review by the ATR team during ATR. The DQC review disciplines will be as noted in paragraph 3d (Attachment 1). A list of the PDT and September 2009 ATR team rosters is attached (Attachment 2).

#### **5. AGENCY TECHNICAL REVIEW (ATR)**

a. **Products to Undergo ATR.** The ATR was performed throughout the study in accordance with the District and MSC Quality Management Plans. The ATR was documented and discussed at the AFB milestone. Certification of the ATR will be provided prior to the District Commander signing the final report. Products that underwent ATR include the McKinney Bayou **Section 205** Flood Risk Reduction Draft DPR with EA. All Public Review comments were included in the DPR prior to ATR.



b. **Required ATR Team Expertise.** The ATR team was comprised of nine individuals. See tabulation below for list of disciplines and required experience. See Roster (Attachment 1) for a complete list of ATR Team members, schedule, experience, and associated costs.

ATR Team Members/Disciplines	Expertise Required
ATR Lead	The ATR lead should be a senior professional preferably with experience in preparing Section 205 decision 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 must be from outside the home district's MSC and typically, the ATR lead will also serve as a reviewer for a specific discipline.
Planning	The Planning reviewer should be a senior water resources planner with experience in plan formulation of Flood Risk Management studies.
Environmental Resources	Experience with NEPA requirements, aquatic/terrestrial restoration, and habitat modeling.
Cultural	Knowledge of National Historic Preservation Act (NHPA) laws and experience with Section 106 consultation process with SHPO and Federally recognized tribes.
Economics	Experience with large Flood Risk Management evaluations. Evaluations included analyzing the flood risk and calculating the expected annual flood damages to residential and nonresidential structures and agricultural resources. Also conducted projections of future development in urban and rural areas.
Hydraulic Engineering	Experience in H&H, including hydrology, open channel flow, detention basins, and pump stations.
Geotechnical Engineering	Experience in design of FRM structures.
Structural Engineering	An indepth knowledge of slope and channel stability.
Cost Engineering	Cost engineer skilled in MCACES estimating software, heavy equipment channel excavation and earthwork construction methods, and concrete structures.
Real Estate	Expertise in real estate acquisition laws, policies, regulations, and guidance for Federal and Federally funded projects, including Civil Works cost-shared water resource projects. Experience in working with and providing oversight to the non-Federal sponsor on real estate issues.

c. **Documentation of ATR.** DrChecks review software was 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 been 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 1110-2-12 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 each 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 prior to the District Commander signing the final report. A sample Statement of Technical Review is attached (Attachment 3).

## **6. INDEPENDENT EXTERNAL PEER REVIEW (IEPR)**

a. **Decision on IEPR.** It is the policy of USACE that all flood risk management project decision documents undergo Type I IEPR unless an exclusion is granted by the home MSC under the Director of Policy Civil Works' Memorandum #1, "Continuing Authority Program Planning Process Improvements," 19 January 2011. The proposed project does not meet the criteria for Type I IEPR, and therefore a Type I IEPR will not be conducted. This is based on the fact that the project does not have a total project cost in excess of \$45 million and does not require an EIS. The study also did not identify any threats to human life/safety, and the Governor has not requested peer review by independent experts. Life safety aspects are discussed in further detail in paragraph 3.d of the Review Plan.

The proposed project does not meet the criteria for Type II IEPR as described in paragraph 2 of Appendix D of EC 1165-2-209. As noted in the Project Risk Assessment, level of risk is categorized as "Low" in all, but five areas where it is categorized as "Medium." It specifically notes a Low level of risk for Human Population and Public Safety. As noted in this Plan and the DPR, no innovative materials, novel methods, complex techniques, or precedent setting methods or models will be involved in any project emanating from this study. The project design is also not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule.

The District Chief of Engineering and Construction assessment for the proposed project is that there is no significant threat to human life with the implementation of the project.

This project would not benefit from an IEPR. Project improvements include basic channel improvements. No major challenges are foreseen with implementing the project features. The project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule. Also, no threats to human life/safety were identified with this project. Should failure or project design exceedance occur, no major life safety related issues or consequences have been identified. In addition, this project does not trigger the four mandatory items for an IEPR. This project did not

require an EIS. There is no human life/safety issues identified. There has been no formal request by the Governor for an IEPR. Also, the total project cost is \$8,185,197 which is well below the \$45,000,000 threshold.

## 7. MODEL CERTIFICATION AND APPROVAL

a. **Planning Models.** The following planning models were used in the development of the decision document.

PLANNING MODELS					
Planning Model	Version	Certified	Approval Status	Description	Use
Economic Damage Models					
HEC-FDA	1.2.4	X		HECs Flood Damage Reduction Analysis program provides the capability for integrated hydrologic engineering and economic analysis for formulating and evaluating flood risk management plans using risk-based analysis methods.	Generally used to determine structure damages with risk incorporated.
Economic Damage Models (Cont)					
CACFDAS		AGFRM (updated version of program) undergoing certification.	Approved for use during ATR	Computerized Agricultural Crop Flood Damage Assessment System developed by Mississippi State University to develop "per acre" flood damages.	Used to determine agricultural crop and noncrop damages.
Environmental Models					
HEP Model S - (Barred Owl, Gray Squirrel, Carolina Chickadee, Pileated Woodpecker)			Approved for use per HQ memorandum: Policy Guidance on Certification of Ecosystem Output Models (August 2007). <u>a/</u>	Habitat Suitability Index Models	Used by Environmental to quantify project impacts based on representative animal species habitat requirements.

a/ All HSI analyses are from existing FWS blue book models.

b. **Engineering Models.** The following engineering models were used in the development of the decision document.

ENGINEERING MODELS					
Non-Planning Model	Version	Approved for Use	Approval Date/Status	Description	Use
Hydrologic-Hydraulic (H&H) Models					
HEC-RAS	4.0	X		The HEC's River Analysis System program provides the capability to perform one-dimensional steady and unsteady flow river hydraulics calculations.	Used for steady and unsteady flow analyses for the existing channel and channel alternatives.
Cost Engineering					
MCACES		X		Microcomputer-Aided Cost Estimation System	Used to generate detailed cost estimates for each alternative.

## 8. REVIEW SCHEDULES AND COSTS

a. **ATR Schedule and Cost.** The schedule for the ATR was a 2-week review period and a 4-week comment incorporation timeframe that was completed in November 2010. The cost for this effort was \$24,000.

b. **Type I IEPR Schedule and Cost.** The proposed project does not meet the requirements for a Type I IEPR, and therefore a Type I IEPR will not be conducted. Supporting information for this exclusion is available in paragraphs 3.d. and 6.a. of this Review Plan.

c. **Model Certification/Approval Schedule and Cost.** According to the Director of Policy Civil Works' Memorandum #1, "Continuing Authority Program Planning Process Improvements," 19 January 2011, approval for planning models under EC 1105-2-412 is not required for CAP projects. The MSC Commander is responsible for assuring the quality of the analysis used in these models. The ATR team will apply the principles of EC 1105-2-412 during the ATR to ensure the model is theoretically and computationally sound, consistent with USACE policies, and adequately documented.

An ATR for this project was completed in November 2010. In this study, the CACFDAS Planning model was analyzed by the ATR members, and it was concluded that the models are theoretically and computationally sound and that calculations performed by these models appear to appear to be reasonable and accurate. The HEP HSI models were approved for use by HQUSACE per policy guidance on certification of ecosystem output models.

## **9. PUBLIC PARTICIPATION**

State and Federal resource agencies may be invited to participate in the study covered by this review plan as partner agencies or as technical members of the PDT, as appropriate. Agencies with regulatory review responsibilities will be contacted for coordination as required by applicable laws and procedures. The ATR team will be provided copies of public and agency comments. Public review will take place after the Draft DPR has been reviewed by CEMVD, and all comments have been incorporated into the document. Official letters will go out to public agencies and sponsors with copies of the Draft DPR and EA for their review and comments.

## **10. REVIEW PLAN APPROVAL AND UPDATES**

The MVD Commander is responsible for approving this review plan. 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. 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, will be posted on the home district's webpage.

## **11. REVIEW PLAN POINTS OF CONTACT**

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

- Senior Project Manager, [REDACTED]
- Review Management Office Representative, [REDACTED]
- National Program Manager, FRM-PCX, [REDACTED]

ATTACHMENT 1  
ATR TEAM ROSTER  
ATR SCHEDULE AND COSTS

Discipline	Name	Organization	Date	Expertise Required	Cost (\$)
Team Lead / Planning		CESWF-PER-PP	July 2010	MA Economics, study and project manager for multiple studies, previous ATR experience as a plan formulator and lead	5,000
Environmental		CESWF-PER-E	July 2010	11 years of Corps experience with NEPA requirements, aquatic/terrestrial restoration, and habitat modeling.	3,000
Cultural Resources		CEMVM-PM-E	July 2010	Knowledge of Historic Preservation laws and experience with Section 106 (NHPA) consultation process with SHPO and Federally recognized tribes.	1,800
Economics		CEMVN-PDE-FR	July 2010	25 years of Corps experience with large Flood Risk Management evaluations. Evaluations included analyzing the flood risk and calculating the expected annual flood damages to residential and nonresidential structures and to agricultural resources. Also conducted projections of future development in urban and rural areas.	3,000
H&H		CEMVM-EC-H	July 2010	42 years experience in H&H, including hydrology, open channel flow, detention basins, and pump stations.	2,000
Structural Design		CEMVS-CE-DA	July 2010	Experience in design and FRM structures.	1,000
Geotechnical		CEMVM-EC-G	July 2010	An indepth knowledge of slope and channel stability.	1,700
Cost Engineering and Specifications		CENWW-EC-X	July 2010	Senior cost engineer skilled in MCACES estimating software, heavy equipment channel excavation and earthwork construction methods, concrete structures.	4,000
Real Estate		CEMVM-RE-E	July 2010	Over 27 years experience in the Real Estate and Economic fields with the Memphis District. 14 years experience as an economist and 13 years in Real Estate's Appraisal Branch in which prepares costs estimates, gross appraisals, Real Estate plans, tract appraisals, and LERRDs crediting for the Real Estate Division. Is presently a staff appraiser/economist on all CAP projects. Performed ITRs for in-house reports, and ATRs for other Corps Districts.	1,000
FRM-PCX Coordinator		CEMVS-PM-F	July 2010		1,500
Total Cost Estimate					24,000

ATTACHMENT 2  
PROJECT DELIVERY TEAM ROSTER  
(SEPTEMBER 2009)

Discipline	Member	Telephone	Organization	E-Mail	Credentials	Years of Experience
PDT TEAM, VICKSBURG DISTRICT						
Senior Project Manager			CEMVK-PP-D		B.S., Civil Engineering, Mississippi State University (MSU); MBA, MSU	6
Environmental			CEMVK-PD-E		B.S., Wildlife Management, MSU	8
Economics, Urban			CEMVK-PD-F		B.A., Economics, MSU	30+
Economics, Agricultural			CEMVK-PD-F		B.S., Agricultural Economics, MSU; M.S. Ag. Econ., MSU	16
H&H			CEMVK-EC-HH		B.S., Civil Engr., MSU; PE	30+
Electrical Design			CEMVM-EC- DC		B.S., Electrical Engr., Univ. of Memphis	5
Geotechnical			CEMVK-EC-G		B.S., Civil Engr., MSU; PE	8
Relocations			CEMVK-EC-CE		B.C.E., Auburn Univ.; PE, PLS	14
Water Quality a/			CEMVK-EC-TE		B.S. Civil Engr., Louisiana (LA) Tech. Univ.; M.S. Environ. Engr. , LA Tech; PE	20
Cost Engineering and Specifications			CEMVK-EC-TC		B.S., Mechanical Engr., MSU; PE	42
Real Estate			CEMVK-RE-EP		A.S., Hinds Community College	29+
Value Engineering			CEMVD-PD-SP		B.S., Maritime Systems Engr., Texas (TX) A&M Univ.; M.S., Civil & Environ. Engr., Univ. of Houston	15
Mechanical Design			CEMVK-EC-DC		B.S. Mechanical Engr.; MSU	22
Structural Design			CEMVK-EC-DS		B.S. Civil Engr., MSU, M.S. Civil Engr., Oklahoma State Univ.; PE	29+
Levee and Drainage Design			CEMVK-EC-DL		B.S., Civil Engr., Univ. of Mississippi (MS); PE	8
Cultural Resources			CEMVK-PD-E		M.A., Anthropology Univ. of Memphis	23



# ATTACHMENT 2 (Cont)

Discipline	Member	Telephone	Organization	E-Mail	Credentials	Years of Experience
AIR TEAM (September 2009)						
Project Manager			CEMVK-PM-F		B.S., Economics, B.B.A. Management, Iowa State Univ. (ISU)	21
Environmental Economics			CEMVK-PP-PQ		Retired	30+
			CEMVP-PM-E		Retired	30+
H&H			CEMVK-EC-HH		B.S., Civil Engr., LA State Univ. (LSU); PE	31+
Structural Design			CEMVK-EC-DS		B.S. and M.S., Civil Engr., MSU	6
Mechanical Design			CEMVK-EC-DC		B.S. Mechanical Engr., Univ. of MS	2.5
Levee and Drainage Design			CEMVK-EC-DL		B.S., Math; B.S., Civil Engr.; M.S., Engr. Mgt.; PE	9
Electrical Design			CEMVK-EC-DC		B.A., Electrical Engr.; LA Tech Univ.	6
Geotechnical			CEMVK-EC-G		B.S., Geological Engr., Univ. of MS; M.S. Civil Engr., MSU; PE	14
Relocations			CEMVK-EC-TE		Retired COE	19+
Water Quality a/			CEMVK-EC-HW		B.A., Biology, Univ. of Southern MS (USM)	30
Cost Engineering			CEMVK-EC-TC		CCC, B.S., Civil Engr., Univ. of MS; PE	30 +
Real Estate			CEMVK-RE		B.S., Agricultural Economics, MSU; MS Certified General Real Estate Appraiser	6+

a/ Includes HTRW.



ATTACHMENT 3  
SAMPLE STATEMENT OF  
TECHNICAL REVIEW FOR DECISION DOCUMENTS

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Continuing Authorities Program Section 205 Flood Risk Reduction Feasibility Study for McKinney Bayou, Tunica, Mississippi. The ATR was conducted as defined in the project's Review Plan to comply with the requirements of Engineer Circular 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 U.S. 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 Dr.Checks<sup>sm</sup>.

\_\_\_\_\_  
ATR Team Leader  
CESWF-PER-PP

\_\_\_\_\_  
Date

\_\_\_\_\_  
Project Manager  
CEMVK-PP-D

\_\_\_\_\_  
Date

\_\_\_\_\_  
Review Management Office Representative  
CESPD-PDS-P

\_\_\_\_\_  
Date

CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows: Describe the major technical concerns and their resolution.

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

\_\_\_\_\_  
Chief, Engineering and Construction  
Division  
CEMVK-EC

\_\_\_\_\_  
Date

\_\_\_\_\_  
Chief, Vicksburg Planning Division  
CEMVK-PD

\_\_\_\_\_  
Date