



DEPARTMENT OF THE ARMY
MISSISSIPPI VALLEY DIVISION, CORPS OF ENGINEERS
P.O. BOX 80
VICKSBURG, MISSISSIPPI 39181-0080

REPLY TO
ATTENTION OF:

CEMVD-PD-KM

21 December 2012

MEMORANDUM FOR Commander, Memphis District

SUBJECT: MVD Continuing Authorities Program (CAP) Model Review Plan and Model Review Plan Checklist, Germantown Lateral D., Tennessee, Section 14 Project, Memphis District

1. Reference:

a. Memorandum, CEMVM-PM-P, 12 December 2012, subject as above (encl 1).

b. Memorandum, CEMVD-RB-T, 17 December 2012, subject: Germantown Lateral D, TN Section 14 Project Review Plan (encl 2).

2. MVD staff has reviewed the Review Plan and related documents for the subject project. The 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).

3. The subject review plan is approved. The review plan has been coordinated with the Review Management Organization, which concurs (encl 2). Please post the approved Review Plan to your web page.

4. The MVD point of contact for this action is Mr. Mike Warren, (601) 634-5070.

A handwritten signature in black ink, appearing to read "Edward E. Belk, Jr.", written in a cursive style.

EDWARD E. BELK, JR., P.E., SES
Director of Programs

2 Encls



Reply to
Attention of:
CEMVM-PM-P


DEPARTMENT OF THE ARMY
MEMPHIS DISTRICT CORPS OF ENGINEERS
167 NORTH MAIN STREET B-202
MEMPHIS, TENNESSEE 38103-1894

12 DEC 2012

MEMORANDUM FOR Commander, Mississippi Valley Division (CEMVD-PD-KM/Michael Warren), P.O. Box 80, Vicksburg, MS 39181-0080

SUBJECT: MVD Continuing Authorities Program (CAP) Model Review Plan and Model Review Plan Checklist, Germantown Lateral D, Tennessee, Section 14 Project, Memphis District

1. The Model Review Plan (RP) and Model Review Plan Checklist for the Germantown Lateral D, Tennessee, Section 14 Project are submitted for MVD review and approval. The RP was developed in accordance with the MVD Model Review Plan Guidance for Section 14 projects. Electronic copies of the subject review plan and review plan checklist have been sent to Glennard Warren, DST and copy furnished Brian Chewning and Sarah Palmer.
2. The Memphis District points of contact for the project are Clyde Hunt, Project Manager, (901)-544-3115, or email: clyde.e.hunt@usace.army.mil; or Jackie Whitlock, CAP Program Manager, (901)-544-3832 or email: jackie.s.whitlock@usace.army.mil.

for 
VERNIE L. REICHLING
Colonel, EN
Commanding

Encl 1

MVD CAP Review Plan Checklist

Date: 11 December 2012
Originating District: Memphis District
Project/Study Title: Germantown Lateral D, Tennessee
P2# and AMSCO#: P2: 143277 AMSCO: 143277
District POC: Clyde Hunt or Jackie Whitlock
MSC Reviewers: DST – Mike Warren and Brian Chewing/Sarah Palmer
CAP Authority: Section 14
Other Program Directed to follow CAP Processes:

Please fill out this checklist and submit with the draft Review Plan when coordinating with the MSC. Any evaluation boxes checked "No" may indicate the project may not be able to use the MVD Model Review Plan. Further explanation may be needed or a project specific review plan may be required. Additional coordination and issue resolution may be required prior to MSC approval of the Review Plan. Checklist may be limited to Section I or Section II or Both, depending on content of review plan (or subsequent amendments).

Section I - Decision Documents

REQUIREMENT	EVALUATION
1. Is the Review Plan (RP) for a Continuing Authorities Project? Or Other Program Directed to follow CAP Processes?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
a. Does it include a cover page identifying it as following the Model RP and listing the project/study title, originating district or office, and date of the plan?	a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
b. Does it include a table of contents?	b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
c. Is the purpose of the RP clearly stated?	c. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
d. Does it reference the Project Management Plan (PMP) of which the RP is a component?	d. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
e. Does it succinctly describe the levels of review: District Quality Control (DQC), Agency Technical Review (ATR), and Independent External Peer Review (IEPR) if applicable for Sec 103 or Sec 205?	e. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
f. Does it include a paragraph stating the title, subject, and purpose of the decision document to be reviewed?	f. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
g. Does it list the names and disciplines of the Project Delivery Team (PDT)?*	g. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<i>*Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.</i>	
Comments:	

2. Is the RP detailed enough to assess the necessary level and focus of the reviews?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
3. Does the RP define the appropriate level of review for the project/study?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. Does it state that DQC will be managed by the home district in accordance with the MVD and district Quality Management Plans? b. Does it state that ATR will be managed by MVD? c. Does it state whether IEPR will be performed? For Sec 103 and Sec 205, see additional questions in 5. below. Comments:	a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> c. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
4. Does the RP explain how ATR will be accomplished?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
a. Does it identify the anticipated number of reviewers? b. Does it provide a succinct description of the primary disciplines or expertise needed for the review (not simply a list of disciplines)? c. Does it indicate that ATR team members will be from outside the home district? d. Does it indicate where the ATR team leader will be from? e. If the reviewers are listed by name, does the RP describe the qualifications and years of relevant experience of the ATR team members?*	a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> c. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> d. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> e. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<i>*Note: It is highly recommended to put all team member names and contact information in an appendix for easy updating as team members change or the RP is updated.</i> Comments:	
5. For Sec 103 and Sec 205 projects, does the RP explain how IEPR will be accomplished?	Yes <input type="checkbox"/> No <input type="checkbox"/> n/a <input checked="" type="checkbox"/>
a. Is an exclusion being requested, requiring CG approval? b. Does it provide a defensible rationale for the decision on IEPR? c. If IEPR is required, does it state that IEPR will be managed by an Outside Eligible Organization, external to the Corps of Engineers? d. If IEPR is required, does the RP indicate which PCX will manage the IEPR and whether any coordination with the PCX has occurred? Comments:	a. Yes <input type="checkbox"/> No <input type="checkbox"/> b. Yes <input type="checkbox"/> No <input type="checkbox"/> c. Yes <input type="checkbox"/> No <input type="checkbox"/> d. Yes <input type="checkbox"/> No <input type="checkbox"/>
6. Does the RP address review of sponsor in-kind contributions?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

7. Does the RP address how the review will be documented?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>a. Does the RP address the requirement to document ATR and IEPR comments using Dr Checks?</p> <p>b. Does the RP explain how the IEPR will be documented in a Review Report?</p> <p>c. Does the RP document how written responses to the IEPR Review Report will be prepared?</p> <p>c. Does the RP detail how the district will disseminate the final IEPR Review Report, USACE response, and all other materials related to the IEPR on the internet and include them in the applicable decision document?</p> <p>Comments:</p>	<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input type="checkbox"/> No <input type="checkbox"/> n/a <input checked="" type="checkbox"/></p> <p>c. Yes <input type="checkbox"/> No <input type="checkbox"/> n/a <input checked="" type="checkbox"/></p> <p>d. Yes <input type="checkbox"/> No <input type="checkbox"/> n/a <input checked="" type="checkbox"/></p>
8. Does the RP address Policy Compliance and Legal Review?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
9. Does the RP present the tasks, timing and sequence (including deferrals), and costs of reviews?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>a. Does it provide a schedule for ATR including review of the Alternative Formulation Briefing (AFB) materials and final report?</p> <p>b. Does it present the timing and sequencing for IEPR?</p> <p>c. Does it include cost estimates for the reviews?</p>	<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input type="checkbox"/> No <input type="checkbox"/> n/a <input checked="" type="checkbox"/></p> <p>c. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
<p>10. Does the RP indicate the study will address Safety Assurance factors? Factors to be considered include:</p> <ul style="list-style-type: none"> • Where failure leads to significant threat to human life • Novel methods\complexity\ precedent-setting models\policy changing conclusions • Innovative materials or techniques • Design lacks redundancy, resiliency of robustness • Unique construction sequence or acquisition plans • Reduced\overlapping design construction schedule 	<p>Yes <input type="checkbox"/> No <input type="checkbox"/> n/a <input checked="" type="checkbox"/></p> <p>Comments: This project will not have a significant threat to life/safety assurance.</p>
11. Does the RP address opportunities for public participation?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
12. Does the RP indicate ATR of cost estimates will be conducted by pre-certified district cost personnel who will coordinate with the Walla Walla Cost DX?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
13. Has the approval memorandum been prepared and does it accompany the RP?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

Section II - Implementation Documents

Please fill out this checklist and submit with the draft Review Plan or subsequent Review Plan amendments when coordinating with the MSC. For DQC, the District is the RMO; for ATR and Type II IEPR, MVD is the RMO. Any evaluation boxes checked "No" indicate the RP possibly may not comply with MVD Model Review Plan and should be explained. Additional coordination and issue resolution may be required prior to MVD approval of the Review Plan.

REQUIREMENT	EVALUATION
1. Are the implementation documents/products described in the review or subsequent amendments?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
2. Does the RP contain documentation of risk-informed decisions on which levels of review are appropriate?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
3. Does the RP present the tasks, timing, and sequence of the reviews (including deferrals)?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>a. Does it provide an overall review schedule that shows timing and sequence of all reviews?</p> <p>b. Does the review plan establish a milestone schedule aligned with the critical features of the project design and construction?</p>	<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
4. Does the RP address engineering model review requirements?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>a. Does it list the models and data anticipated to be used in developing recommendations?</p> <p>b. Does the RP identify any areas of risk and uncertainty associated with the use of the proposed models?</p> <p>c. Does it indicate the certification/approval status of those models and if review of any model(s) will be needed?</p> <p>d. If needed, does the RP propose the appropriate level of review for the model(s) and how it will be accomplished?</p>	<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>c. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>d. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>
5. Does the RP explain how and when there will be opportunities for the public to comment on the study or project to be reviewed?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>6. Does the RP address expected in-kind contributions to be provided by the sponsor?</p> <p>If expected in-kind contributions are to be provided by the sponsor, does the RP list the expected in-kind contributions to be provided by the sponsor?</p>	<p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>

7. Does the RP explain how the reviews will be documented?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
<p>a. Does the RP address the requirement to document ATR comments using Dr Checks and Type II IEPR published comments and responses pertaining to the design and construction activities summarized in a report reviewed and approved by the MSC and posted on the home district website?</p> <p>b. Does the RP explain how the Type II IEPR will be documented in a Review Report?</p> <p>c. Does the RP document how written responses to the Type II IEPR Review Report will be prepared?</p> <p>d. Does the RP detail how the district/MVD will disseminate the final Type II IEPR Review Report, USACE response, and all other materials related to the Type II IEPR on the internet?</p>	<p>a. Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>b. Yes <input type="checkbox"/> No <input type="checkbox"/> not applicable</p> <p>c. Yes <input type="checkbox"/> No <input type="checkbox"/> not applicable</p> <p>d. Yes <input type="checkbox"/> No <input type="checkbox"/> not applicable</p>
8. Has the approval memorandum been prepared and does it accompany the RP?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>

REVIEW PLAN
Using the MVD Model Review Plan
for
Continuing Authorities Program
Section 14

Germantown Lateral D Farmington Road Culvert, TN
Section 14 Project

Memphis District

MSC Approval Date: 21 December 2012
Last Revision Date: Initial Submission 12 December, 2012



**US Army Corps
of Engineers®**

**Review Plan
Using the MVD Model Review Plan**

**Germantown Lateral D – Germantown, Tennessee
Section 14 Project**

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REVIEW PLAN
Germantown Lateral D – Germantown, Tennessee

1. Purpose and Requirements.

a. Purpose. This Review Plan defines the scope and level of peer review for the **Germantown Lateral D, Germantown, Tennessee, Section 14** project. Project items for review outlined in this review plan include: project factsheet, environmental assessment, cost estimate, economic analysis, hydraulic and hydrologic analysis, real estate plan, and drawings/quantities.

Section 14 of the Flood Control Act of 1946, as amended, authorizes the US Army Corps of Engineers (USACE) to study, design and construct emergency streambank and shoreline works to protect public services including (but not limited to) streets, bridges, schools, water and sewer lines, National Register sites, and churches from damage or loss by natural erosion. This is a Continuing Authorities Program (CAP) which focuses on water resource related projects of relatively smaller scope, cost and complexity. Unlike the traditional Corps' civil works projects that are of wider scope and complexity, the Continuing Authorities Program is a delegated authority to plan, design, and construct certain types of water resource and environmental restoration projects without specific Congressional authorization.

Additional Information on this program can be found in Engineering Regulation 1105-2-100, Planning Guidance Notebook, Appendix F, Amendment #2.

b. Applicability. This review plan is based on the MVD Model Review Plan for Section 14, 107, 111, 204, 206, 208, or 1135 Projects or Programs directed by guidance to follow CAP processes, which is applicable to projects that do not require Independent External Peer Review (IEPR), as defined by the mandatory Type I IEPR triggers contained in EC 1165-2-209, Civil Works Review Policy.

c. References:

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

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 14 projects is MVD. MVD will coordinate and approve the review plan and manage the Agency Technical Review (ATR). The home District will post the approved review plan on its public website.

3. Project Information.

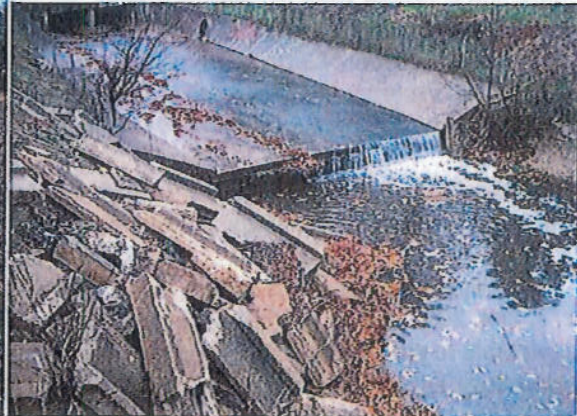
a. Decision and Implementation Document. The **Germantown Lateral D in Germantown, Tennessee** decision document will be prepared in accordance with ER 1105-2-100, Appendix F, Amendment #2. The approval level of the decision document (if policy compliant) is MVD. An Environmental Assessment (EA) will be prepared along with the decision document. **Plans and Specifications (P&S) will also be prepared for implementation of the project and will undergo ATR review.**

REVIEW PLAN
Germantown Lateral D – Germantown, Tennessee

b. Study/Project Description. The study area is located in the city of Germantown, in Shelby County, Tennessee, about 3,500 feet east of the intersection of Kimbrough Road and Farmington Boulevard. Erosion along a major lateral that flows thru the city has threatened a concrete apron at the downstream end of the culvert under Farmington Road at Lateral D. The integrity of the apron and culvert could become further endangered with the next high water event. There have been previous bank failures and a persistent large scour hole pictured below. The City of Germantown has performed stop-gap emergency maintenance by placing debris in the scour hole and along top bank in an attempt to arrest the erosion forces. The scour at the downstream terminus of the apron is threatening to undermine the apron, and has already undermined a wing wall of the apron as shown in the bottom pictures below.



Scour Hole and Bank Erosion at downstream end of Concrete Apron



Temporary Attempts at Bank Protection with Farmington Road Culvert in Background



Undermining at left bank ascending wing wall..



Detail of the Undermining

REVIEW PLAN
Germantown Lateral D – Germantown, Tennessee

The MVM project delivery team explored the problem as requested by the City of Germantown. The primary objective of this study is to protect the box culvert structure by controlling the grade drop and erosion that exists in the channel with a solution that will provide long-term sustainability and can be easily and safely maintained. The alternatives evaluated are as follows:

- a. Alternative 1 – This is a No Action Alternative that is included to provide a baseline for comparison with the other alternatives. For this project, the no action alternative would allow for the continued deterioration of Lateral D that would eventually result in a failure of the Box Culvert utility. This would pose a potential life safety threat. In addition, a section of Farmington Boulevard, a main thoroughfare through the heart of the city would have to be closed for repairs causing an enormous impact on daily traffic.
- b. Alternative 2 - This alternative is a grouted R1500 riprap chute with an outlet apron elevation of 262.0 feet. This alternative required a large amount of excavation for the riprap that would be required to withstand the velocity of the stormwater that exits the concrete chute of the box culvert. This alternative is feasible, but was not the most economical alternative.
- c. Alternative 3 - This alternative is an apron of interlocking concrete block 9 inches thick underlain by manufacturer-specified granular material. The protection is trapezoidal in section, with a bottom width of 24 feet and side slopes of 2.5 horizontal to 1 vertical. The apron is level longitudinally and is 96 feet long from the upstream to downstream ends. The interlocking blocks are designed to withstand the high velocities at the exit chute of the box culvert. Interlocking block mats have been successfully used to provide streambank protection in nearby Lateral E. This is the recommended alternative and the first cost is estimated at \$974,400 and the benefit to cost ratio is 36.4 to 1. This is will not raise the flowlines downstream in Lateral D.
- d. Alternative 4 - This alternative is a reinforced concrete trapezoidal baffle block chute. It consists of multiple rows of staggered precast concrete baffle blocks in the channel and on the side slopes of Lateral D. It was devised to better reduce energies to improve performance, by reducing scour through greater energy dissipation and by featuring a lower outlet invert elevation, which should extend the period of time before major maintenance is first required.

c. Factors Affecting the Scope and level of Review. Technical or institutional challenges are not expected with this project due to MVM's experience with planning, constructing, and operating streambank stabilization projects. Social issues should not be an issue for this project since the City of Germantown has been actively involved and supportive of the direction of this project.

This project will not have significant economic, environmental, or social impacts to the City of Germantown.

This project will not have a significant threat to life/safety assurance.

Agencies involved in coordinating this project include: U.S. Fish and Wildlife Service, Environmental Protection Agency, Natural Resources Conservation Service, Tennessee Historical Commission, Tennessee Department of Environment and Conservation, Tennessee Wildlife Resources Agency, and the City of Germantown.

REVIEW PLAN
Germantown Lateral D – Germantown, Tennessee

The streambank protection project does not anticipate significant public dispute due to the purpose and physical limits of the project. The Sponsor is aware of a required temporary construction easement to be provided.

The recommended plan for using the interlock concrete block mats does not require specialized construction techniques or rarely used construction materials. Interlocking concrete block mats have been used before in Germantown, TN for lining nearby Lateral E.

The Germantown Lateral D Section 14 project in Germantown, TN satisfies the criteria outlined in the MVD CAP Review Plan Checklist that allows the MVD Model Review Plan to be used for this project. As required, all Civil Works products are required to receive district quality control and all decision documents shall undergo Agency Technical Review. In accordance with Director of Civil Works' Policy Memorandum #1, 19 January 2011, and MVD Review Procedures for CAP Memorandum, dated 5 April 2011, CAP Section 14 projects are excluded from Type I IEPR.

d. In-Kind Contributions. Products and analyses provided by non-Federal sponsors as in-kind services are subject to District Quality Control (DQC) and ATR, similar to any products developed by USACE. For Germantown Lateral D, in-kind products or analysis are not expected from the non-Federal sponsor.

4. District Quality Control (DQC).

All decision documents (including supporting data, analyses, environmental compliance documents, etc.) shall undergo DQC prior to ATR. 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 shall manage DQC in accordance with MVD and district Quality Management Plan. Any discrepancies between a reviewer and a Project Delivery Team (PDT) member will be resolved face-to-face. If a concern cannot be satisfactorily resolved between the DQC team and the PDT, it will be elevated to the section supervisor for further resolution.

- a. **Feasibility Phase.** Technical supervisors will assure that experienced personnel will check PDT members technical work for completeness, accuracy, and clarity.
 1. A draft of the report will be sent to each reviewer and analyst for review and comments.
 2. The reviewer will identify comments to the PM via email to be addressed by the PDT.
 3. The PM will work with the PDT and reviewer to resolve any changes or modifications to the report that result from the reviewers comment(s).
 4. A revised report will be available for final review to the reviewers before proceeding to the ATR.
 5. A Completion of District Quality Control Review sign-off sheet will be signed by the analyst and reviewer for each functional area of the PDT and attached in the Feasibility Report.

The District Quality Control Review (DQCR) will be conducted prior to the ATR.

- b. **Plans and Specifications Phase.** The DQC consists of at least one technical check, a DQCR, and a Biddability, Constructability, Operability, Environmental (BCOE) Review. DQCR will be conducted at the 95 percent design level prior the ATR. Review comments and resolutions will be entered into DrChecks, in accordance with ER 1110-18159. The review will be documented by a completed and signed Statement of Technical Review and Certification, to which all review comments and resolutions will be attached.

REVIEW PLAN
Germantown Lateral D – Germantown, Tennessee

BCOE occurs in the plans and specifications phase of the project. In accordance with ER 415-1-11, the Project Engineer will conduct a BCOE review at the final design level after all ATR comments have been resolved and incorporated. The review documents will include a complete drawing set, complete specifications with special clauses, and Engineering Considerations. The review will commence at least 30 days prior to advertisement. Review comments and resolutions will be entered into DrChecks. The BCOE review will be documented by a completed and signed BCOE certification, to which all review comments and resolutions will be attached.

5. Agency Technical Review (ATR).

One ATR is mandatory for all decision documents (including supporting data, analyses, environmental compliance documents, etc.), however additional ATRs may be performed if deemed warranted. ATR shall be documented and discussed at the Alternative Formulation Briefing (AFB) milestone. Certification of the ATR will be provided prior to the District Commander signing the final report. 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 will be comprised of senior USACE personnel. The ATR team lead will be from within the home MSC.

a. Products to Undergo ATR. ATR will be performed throughout the project in accordance with the District and MVD Quality Management Plans. Products to undergo ATR include: Planning Design & Analysis Report (PDA) and Plans & Specifications (P&S)

The first review shall consist of contents of the PDA Report including the Germantown Lateral D fact sheet, hydraulics and hydrology analysis, geotechnical analysis, preliminary design drawings, cost estimate, economics analysis, real estate, and Environmental Assessment (EA).

If funded and the Project Partnership Agreement (PPA) is signed with the non-Federal sponsor, the second review shall consist of plans and specifications for construction of the project along with all supporting design documentation.

b. Required ATR Team Expertise. It is estimated that nine (9) ATR team members are needed for the Germantown Lateral D project ATR. Expertise requirements for each position are listed below.

ATR Team Members/Disciplines	<i>Expertise Required</i>
ATR Lead	The ATR lead should be a senior professional preferably with experience in preparing Section 14 decision documents and conducting ATR. The lead should also have the necessary skills and experience to lead a virtual team through the ATR process. Typically, the ATR lead will also serve as a reviewer for a specific discipline (such as planning, economics, environmental resources, etc). The ATR Lead MUST be from outside the Memphis District.
Planning	The planning reviewer should be a senior water resources planner with experience in Section 14 and general planning policy. This reviewer will only review the planning document and not the P&S.
Economics	The Economics reviewer should be a senior economist with expertise in economics and experience in valuing damage to public infrastructure as defined in Section 14 program criteria.
Environmental Resources	The Environmental Resources reviewer should have a biological or environmental background, experience in Section 14 project

REVIEW PLAN
Germantown Lateral D – Germantown, Tennessee

	development and review, understand the requirements of the NEPA process and familiarity with preparation of an Environmental Assessment.
Hydraulic and Hydrology Engineering	The Hydraulic and Hydrology reviewer should be a senior engineer with experience in Section 14 project development and review, a thorough understanding of stream erosion and bank stabilization and experience with HEC-RAS modeling.
Geotechnical Engineering	The geotechnical reviewer will be an expert in streambank erosion.
Civil Engineering	The Civil Engineering reviewer should be a senior engineer with expertise in designing small stream bank stabilization projects and experience in Section 14 project development and review.
Cost Engineering	Cost DX Staff or Cost DX Pre-Certified Professional with experience preparing cost estimates for Section 14 projects.
Real Estate	The Real Estate reviewer should be a senior real estate specialist with experience in preparing cost estimates for Section 14 project development and review.

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. Any editorial comments should be provided informally by email to the PDT.

6. 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 MVD Commander. 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.

7. Cost Engineering Directory of Expertise (DX) Review And Certification.

For CAP projects, ATR of the costs may be conducted by pre-certified district cost personnel within the region or by the Walla Walla Cost DX. The pre-certified list of cost personnel has been established and is maintained by the Cost DX at <https://kme.usace.army.mil/EC/cost/CostAtr/default.aspx>. The cost ATR member will coordinate with the Cost DX for execution of cost ATR and cost certification. The Cost DX will be responsible for final cost certification and may be delegated at the discretion of the Cost DX.

8. Model Certification And Approval.

Approval of planning models under EC 1105-2-412 is not required for CAP projects. MSC commanders remain responsible for assuring the quality of the analyses used in these projects. ATR will be used to ensure that models and analyses are compliant with Corps policy, theoretically sound, computationally accurate, transparent, described to address any limitations of the model or its use, and documented in study reports.

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EC 1105-2-412 does not cover engineering models used in planning. 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).

Planning and Engineering Models. The following models are anticipated to be used in the development of the decision document:

Model Name and Version	Brief Description of the Model and How It Will Be Applied in the Study
HEC-RAS & HEC-1	These are standard engineering models used to calculate peak flows and flowlines.

9. Review Schedules And Costs.

ATR Schedule and Cost.

- a. **Feasibility – ATR review of the planning document was completed in May 2012 at an estimated cost of \$5,000.**
- b. **Alternative Formulation Briefing (AFB) – The AFB process is underway at MVD and anticipate completion of the AFB in December 2012.**
- c. **Implementation Documents, P&S – ATR review should consist of a Team Lead (16 hours), environmental review (16 hours), hydraulics and hydrology review (16 hours), cost reviewer (16 hours), civil design reviewer (16 hours), economics review (4 hours), and real estate review (4 hours), and geotechnical reviewer (4 hours). The total cost of this review should not exceed \$10,000. It is anticipated that this review should not exceed four weeks.**

Schedule (Implementation Documents, P&S) - Contingent upon receipt of Federal funds to fully fund Design and Implementation

	Completion Date
MVD Approval of AFB & Permission to Release Report for Public Comment (Receive PGM)	14 Jan 13
Public Comment Period (NEPA mandatory 30 days review)	14 Feb 13
Finalize Report, EA, Execute FONSI and Submit to MVD for Approval (District prepares and submits Report and FONSI for Approval MVD – 30 days for review of draft feasibility report.)	20 Mar 13
MVD Approval of Feasibility Report (MVD verifies PGM comment incorporation and FONSI, Approves Report. MVM response to MVD comments and MVD requests additional 2	15 Apr 13

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weeks to review.)	
Develop Draft PPA	15 Apr 13
Execute PPA	01 Jul 13
Initiate D&I Phase	01 Jul 13
P&S Approval	02 Sep 13
RTA (Ready to Advertise)	30 Nov 13
Contract Award	26 Feb 14
Construction Completion	30 Nov 14

10. 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.

Coordination with local, State, and Federal agencies has been ongoing throughout the project development. Agencies with regulatory review responsibilities will be contacted for additional coordination as required by applicable laws and procedures.

Upon completion of the ATR and AFB, a 30 day public review of the EA document for this project will be initiated in January 2013. The EA will describe the alternatives considered and why the recommended plan was chosen as well as discuss any environmental impacts associated with the recommended plan. The documents will be made available using the standard communications methods - Public Notices will be sent by email and hardcopy. The documents will be posted to the District website.

11. Review Plan Approval And Updates.

The **MVD DST Chief** is responsible for approving this review plan and ensuring that use of the MVD Model Review Plan is appropriate for the specific project covered by the 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. Minor changes to the review plan since the last MVD approval are documented in Attachment 2. Significant changes to the review plan (such as changes to the scope and/or level of review) should be reapproved by MVD following the process used for initially approving the plan. Significant changes may result in MVD determining that use of the MVD Model Review Plan is no longer appropriate. In these cases, a project specific review plan will be prepared and approved in accordance with EC 1165-2-209. The latest version of the review plan, along with the MVD approval memorandum, will be posted on the home district's webpage.

12. Review Plan Points Of Contact.

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

- **Project Managers**
Mr. Jason Dickard, Memphis District (MVM)~(901) 544-0730
Mr. Clyde Hunt, Memphis District (MVM)~(901) 544-3115

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- CAP Program Manager: Memphis District
Ms. Jackie Whitlock, Memphis District (MVM) ~ (901) 544-3832
- CAP Manager: Mississippi Valley Division
Ms. Sarah Palmer, Mississippi Valley Division ~ (601) 634-9410
- Home DST: Mississippi Valley Division (MVD), Decision Documents
Michael Warren, Mississippi Valley Division (MVD) ~ (601) 634-5070
- Home MSC: Mississippi Valley Division (MVD), Implementation Documents
Yolanda Arthur, Mississippi Valley Division (MVD) ~ (601) 634-5798

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Attachment 1: Team Rosters

Title/Discipline – MVM PDT	Name	Phone Number	E-Mail Address
CAP Manager	Ms. Jackie Whitlock	901-544-3832	Jackie.S.Whitlock@usace.army.mil
Project Manager	Mr. Jason Dickard	901-544-0730	Jason.E.Dickard@usace.army.mil
Hydraulics and Hydrology	Dr. Bob Hunt	901-544-0875	Robert.L.Hunt@usace.army.mil
Civil Design	Mr. Mike Clay	901-544-0209	Michael.B.Clay@usace.army.mil
Geotechnical	Mr. Chip Newman	901-544-3815	Norman.E.Newman@usace.army.mil
Geospatial	Mr. Matt Turner	901-544-0654	Matthew.E.Turner@usace.army.mil
Cost	Mr. Neal Newman	901-544-0890	Neal.E.Newman@usace.army.mil
Economics	Mr. Doug Young	901-544-3154	Douglas.B.Young@usace.army.mil
Real Estate	Mr. Doug Young	901-544-3154	Douglas.B.Young@usace.army.mil
Environmental	Mr. Kevin Pigott	901-544-4309	Kevin.R.Pigott@usace.army.mil
Cultural Resources	Mr. Jimmy McNeil	901-544-0710	Jimmy.D.Mcneil@usace.army.mil
Local Sponsor Title	Name	Phone Number	E-Mail Address
City of Germantown – City Engineer	Mr. Tim Gwaltney	901-757-7232	Tgwaltney@germantown-tn.gov
City of Germantown – CIP Manager	Mr. Butch Eder	901-751-5642	Beder@@germantown-tn.gov
MVD			
DST	Mike Warren	601-634-5070	Glennard.m.warren@usace.army.mil
DST	Brian Chewning	601-634-5836	Brian.chewning@usace.army.mil
Agency Technical Review	Name	Phone Number	E-Mail Address
ATR Lead	Gary Walker	601-631-5469	Gary.d.walker@usace.army.mil
Plan Formulation	Matt Mallard	601-631-5960	Matthew.s.mallard@usace.army.mil
Environmental	Daniel Sumerall	601-631-5428	Daniel.c.sumerall@usace.army.mil
Hydrology & Hydraulic	Ray Wilson	601-631-5738	Ray.o.wilson@usace.army.mil
Cost Engineering	Richard Pearce	601-631-7139	Richard.a.pearce@usace.army.mil
Geotech	Andy Hardy	601-631-7182	Andy.p.hardy@usace.army.mil
Economics	Terry Baldrige	601-631-5609	Terry.r.baldrige@usace.army.mil
Real Estate	Jay Ammons	601-631-7524	Jay.b.ammons@usace.army.mil
River Engineering	Jasper Lummas	601-631-7523	Jasper.e.lummas@usace.army.mil

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Attachment 2: Review Plan Revisions

Revision Date	Description of Change	Page/Paragraph Number

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CERTIFICATION OF AGENCY TECHNICAL REVIEW

Significant concerns and the explanation of the resolution are as follows:

The most significant concern was with respect to the future downstream channel conditions (comment 4555619). The comment involved a discussion from the H&H appendix of two alternatives considered – one being a large concrete baffled structure and the other the tentatively selected plan interlocking blocks. The reviewer caught on the fact that in the H&H write-up, the hydraulic engineer states that if the sponsor does no future action, the large concrete baffle should be built. In the response, the hydraulic engineer points out that there will continue to be maintenance required by the sponsor to this system, and the interlocking blocks will be more flexible to work with if there is channel bottom widening in the future. However, the large concrete structure with baffles would hinder that future maintenance since it cannot be widened. Further, the hydraulic engineer points out that the interlocking blocks have "considerable robustness and will function satisfactorily in the foreseeable future even if the sponsor's plans for other protective measures are delayed."

The use of R-400 stone with grouting in place was questioned by the Civil Engineer member of the ATR team, and the hydraulic engineer provided the appropriate answer, which involved the flow velocities in that particular portion of the rip-rap channel.

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

SIGNATURE: 
for Tom Minyard
Chief, Engineering Division
CEMVM-EC

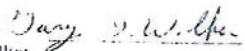
13 Jan 12
Date

SIGNATURE: YOUNG.GARY.LAWRENCE.1229597511
Gary Young
Deputy Chief, Regional Planning and
Environmental Division, South
CEMVM-PE


Date

COMPLETION OF AGENCY TECHNICAL REVIEW

The Agency Technical Review (ATR) has been completed for the Feasibility Study for the Germantown Lateral D, Germantown, Tennessee, Section 14, Emergency Streambank and Shoreline Protection Project. The ATR was conducted 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 materials 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. All comments resulting from the ATR have been resolved, and the comments have been closed in DrChecks.


Gary Walker
ATR Team Leader
RPEDS-PD-PWS

10 April 2012
Date


Cindy Hunt
Project Manager
CEMVM-PM-P

16 April 2012
Date

CEMVD-RB-T

17 Dec 12

MEMORANDUM FOR CEMVD-PD-KM (Dennis Norris)

SUBJECT: Germantown Lateral D, TN Section 14 Project Review Plan

1. Reference email from Jackie Whitlock dated 12 Dec 12, subject as above.
2. This office concurs with subject Review Plan.
3. RB-T POC is Mrs. Yolanda Arthur, 601-634-5798.



ROBERT H. FITZGERALD, P.E.
Chief, Business Technical
Division

End 2