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

REPLY TO
ATTENTION OF:

13 FEB 2013

CEMVD-PD-SP

MEMORANDUM FOR Commander, St. Louis District

SUBJECT: Review Plan Approval for Spunky Bottoms Ecosystem Restoration, Brown County, Illinois, Section 1135, Continuing Authorities Program

1. References:

a. Memorandum, CEMVS-PD-F., 21 December 2012, subject: Spunky Bottoms Ecosystem Restoration, Brown County, Illinois, Section 1135 Project Review Plan Documentation (encl 1).

b. Review Plan, CEMVS-PM-F, 8 February 2013, subject: Spunky Bottoms Ecosystem Restoration, Brown County, Illinois, Section 1135, Review Plan (encl 2).

c. EC 1165-2-214, 15 December 2012, subject: Civil Works Review Policy.

2. The enclosed Review Plan (RP) for the Spunky Bottoms Ecosystem Restoration Project has been prepared in accordance with EC 1165-2-214. The RP has been coordinated with the Upper District Support Team.

3. I hereby approve this RP, which is subject to change as circumstances require, consistent with study development under the Project Management Business Process. Subsequent revisions to this RP or its execution will require new written approval from this office. Non-substantive changes to this RP do not require further approval. The District should post the approved RP to its web site.

4. The MVD point of contact is [redacted], CEMVD-PD-SP, [redacted].

[redacted]

2 Encls

Chief, Upper District Support Team,
St. Louis, Rock Island, St. Paul

DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT CORPS OF ENGINEERS
1222 SPRUCE STREET
ST. LOUIS, MISSOURI 63103-2833

REPLY TO
ATTENTION OF:

21 DEC 2012

CEMVS-PM-F

MEMORANDUM FOR Commander, Mississippi Valley Division (CEMVD-PD-SP/ [redacted], P.O. Box 80, Vicksburg, MS 39181-0080

SUBJECT: Spunky Bottoms Ecosystem Restoration, Brown County, Illinois, Section 1135 Project, Review Plan Documentation

1. References:

a. EC 1165-2-209, 31 January 2010, Civil Works Review Policy.

b. Memorandum, CEMVD-PD-KM, 5 April 2011, MVD Review Procedures for the Continuing Authorities Program (CAP).

c. Memorandum, CEMVD-PD, 11 October 2012, USACE Civil Works Review Process.

2. The Spunky Bottoms Ecosystem Restoration, Brown County, Illinois, Section 1135 Project Review Plan (Enclosure 1) is submitted for your approval. Also enclosed are the MVD CAP Review Plan Checklist (Enclosure 2) and the Draft MVD Approval Memorandum (Enclosure 3).

3. If you have any questions, please contact the Project Manager, [redacted], at 314-331-8286, or [redacted].

3 Encls

CHRISTOPHER G. HALL
COL, EN
Commanding

ENCL 1

REVIEW PLAN

Using the MVD Model Review Plan
for
Continuing Authorities Program
Section 14, 107, 111, 204, 206, 208, or 1135 Projects,
or Projects directed by Guidance
to use CAP processes

Spunky Bottoms Ecosystem Restoration, Brown County, Illinois
Section 1135 Project

MVS

MSC Approval Date: *Pending*
Last Revision Date: *08 February 2013*

Review Plan
Using the MVD Model Review Plan

Spunky Bottoms Ecosystem Restoration, Brown County, Illinois
Section 1135 **Project**

TABLE OF CONTENTS

REVIEW PLAN
Spunky Bottoms, Brown County, Illinois

1. Purpose and Requirements.

a. Purpose. This Review Plan defines the scope and level of peer review for the *Spunky Bottoms Ecosystem Restoration, Brown County, Illinois, Section 1135 Project Feasibility Report. Section 1135 of the Water Resources Development Act of 1986, Public Law 99-662, provides the authority to modify existing Corps projects to restore the environment and construct new projects to restore areas degraded by Corps projects with the objective of restoring degraded ecosystem structure, function, and dynamic processes to a less degraded, more natural condition considering the ecosystem's natural integrity, productivity, stability and biological diversity. This authority is primarily used for manipulation of the hydrology in and along bodies of water, including wetlands and riparian areas. This authority is part of the 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 1165-2-214, Civil Works Review Policy.

c. References:

(1) *Engineering Circular (EC) 1165-2-214, Civil Works Review Policy, 15 December 2012*.

(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) Draft Project Management Plan for Spunky Bottoms Ecosystem Restorations, Brown County, Illinois, Section 1135 Project, 26 April 2011

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 *1135 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 Document. The *Spunky Bottoms, Brown County, Illinois* decision document will be prepared in accordance with ER 1105-2-100, Appendix F, and 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.

b. Study/Project Description: *An initial draft feasibility report was completed in 2003 but further work was suspended because the project was determined to be ineligible for Section 1135 authority. It was questioned as most of the protected area under the study authority is proposed for ecosystem restoration, which was considered to potentially change the purpose of the original flood control project. The original flood control project was authorized by Section 5 of the Flood Control Action of June 22, 1936 (49 Stat. 1583). Through review by the U.S. Army Corps of Engineers Headquarters, it was determined that the proposed ecosystem project would, in fact, change the purpose of the original flood control project. Because Section 1135 projects cannot change the original project purpose, the proposed project could not be implemented under the current Section 1135 authority. Following this decision, The Nature Conservancy (TNC) sought and obtained legislative action in Water Resources Development Act (WRDA) 2007 that added ecosystem restoration to the purpose of the project, allowing the project to remain under the Section 1135 authority without changing the original purpose of the project (flood control).*

- *The Spunky Bottoms Section 1135 Habitat Restoration Project is situated approximately 103 miles north of St. Louis, Missouri, and 60 miles west of Springfield, Illinois. The site is located across the river from the U.S. Fish and Wildlife Service Meredosia National Wildlife Refuge and it is about one and one-half miles downstream of the U.S. Army Corps of Engineers operated La Grange Lock and Dam.*
- *The U.S. Army Corps of Engineers constructed the Little Creek Drainage District's riverfront levee in the 1930s to provide flood protection for approximately 1,600 acres of river floodplain. The levee district's interior was subsequently ditched and drained for farming. In 1997, one of the project sponsors, The Nature Conservancy, purchased 1,156 acres of the district for the purpose of restoring the area's wetland functions. In 2002, The Nature Conservancy purchased an additional 38 acres in the southern area of the district and the Illinois Department of Natural Resources, the other project sponsor, purchased 833 acres to the north of the TNC property.*
- *The following features will be investigated in scoping the project: reconnection structure in the mainline levee, interior north and south levees (with road surface) to facilitate water level management within the protected area and provide construction access, continued protection for the private landowner to the south, vegetative restoration*

(including timber stand improvement with exotic species control, tree plantings, and prairie plantings), and removal of two pump stations.

- *Cost estimates were developed for each alternative. Combined first costs for the initially evaluated plans of each area ranged from* [redacted] *to* [redacted] *including lands, easements and right-of-ways. Average annual costs were based on an economic period of analysis of 50 years. Average annual costs include first costs, operation and maintenance costs for pumping costs, levee and structure maintenance, exotic species control, and planned maintenance and rehabilitation costs (at year 25) for gates, lands, easements and right-of-ways, and monitoring. Average operation and maintenance costs range from* [redacted] *for the no action alternative to* [redacted]*. Total project first cost for the tentatively selected plan including mandated monitoring costs and lands, easements and right-of-ways is estimated at* [redacted]*.*

c. Factors Affecting the Scope and level of Review. *The project does not involve a significant threat to human life/safety assurance. The project is considered small-scale at a cost of approximately* [redacted]*. There is no request by the Governor of an affected state for a peer review by independent experts. The project is not anticipated to require an Environmental Impact Statement (EIS). There is not anticipated to be significant public dispute regarding the size, nature, and effects of the project. There is not anticipated to be significant public dispute regarding the economic or environmental cost or benefit of the project. The information in the decision document or anticipated project design is not likely to be based on novel methods, involve the use of innovative materials or techniques, present complex challenges for interpretation, contain precedent-setting methods or models, or present conclusions that are likely to change prevailing practices. The concepts of the anticipated project features such as revegetation, water level manipulation, pump stations, and berm construction are proven methods and are not novel. The project design is not anticipated to require redundancy, resiliency, and/or robustness, unique construction sequencing, or a reduced or overlapping design construction schedule. Therefore, IEPR is not required.*

The project is considered low risk and low uncertainty overall. The water level management features are anticipated to have a low risk of failure and would not pose a risk to human life or safety should failure occur. The potential for project failure is low because restoration accomplished through improved water control and revegetation is a straight forward concept with numerous successful regional and national applications. As with any ecosystem restoration project, there will be uncertainty as to the exact magnitude of benefits that will be realized from the project. However, the habitat analysis methodology used will be based on proven techniques and is anticipated to adequately reflect project benefits. The risk of the benefits of project features being under- or over-estimated is low. The potential for controversy regarding project implementation is low because the recommended plan will take into account the public's concerns. A socio-economic analysis will be prepared and at least one public meeting will be held.

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. *No in-kind products are anticipated*.

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.

DQC includes such things as quality control and quality assurance plans, checking of computations, drawings and documents, supervisory reviews and PDT reviews. DQC efforts will include the necessary expertise to address compliance with published Corps policy. The DQC is managed in the District and may be conducted by in-house staff as long as the reviewers are not doing the work involved in the study, including contracted work that is being reviewed. The DQC of products and reports shall also cover any necessary National Environmental Policy Act (NEPA) documents and other environmental compliance products and any in-kind services provided by local sponsors.

Basic quality control tools include quality checks and reviews, supervisory reviews, Project Delivery Team (PDT) reviews, etc. During the DQC review, compliance with established policy principles and procedures, utilizing justified and valid assumptions, should be verified. This includes review of: assumptions, methods, procedures, and material used in analysis, alternatives evaluated, the appropriateness of data used and level obtained, and reasonableness of the result, including whether the product meets the customer's needs consistent with law and existing Corps policy. In addition to technical reviews, products will be reviewed for legal sufficiency and policy compliance.

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. An ATR was performed on the AFB documentation in September 2011 but appears to have not been closed out when the study failed to receive funding in FY12. No technical work has been performed on the study since that ATR. Therefore it is anticipated that most of the ATR is valid and will not need to be re-performed. The ATR Lead and PDT will evaluate the status of the ATR and*

close it out. It is anticipated that the cost estimate for the study, as well as related ICA calculations, will need to be updated and therefore limited additional ATR for costs and economics may be needed. The cost and schedule for this limited ATR are included in Section 9 of this review plan.

b. Required ATR Team Expertise.

ATR Team Members/Disciplines	***Expertise Required***
ATR Lead	*The ATR lead should be a senior professional preferably with experience in preparing Section 1135 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 St. Louis District.*
Planning	*The Planning reviewer should be a senior water resources planner with experience in ecosystem restoration planning and general planning policy.*
Economics	*The Economics reviewer should be a senior economist with experience in incremental cost analysis for ecosystem restoration projects.*
Environmental Resources	*The Environmental reviewer should be a senior biologist with experience in NEPA compliance and the use of habitat quantification models such as HEP or similar models.*
Hydraulic Engineering	*The Hydraulic Engineering reviewer should be a senior hydraulic engineer with a thorough understanding of application of detention/retention basin and pump stations for ecosystem restoration.*
Civil Engineer	*The Civil Engineering reviewer should be a senior civil engineer with a thorough understanding of berm and levee construction for the application of ecosystem restoration.*
Geotechnical Engineer	*The Geotechnical Engineering reviewer should be a senior geotechnical engineer with a thorough understanding of soils, underseepage, and bearing capacities for construction of berms, levees, water control structures for the application of ecosystem restoration*
Structural Engineer	*The Structural Engineering reviewer should be a senior structural engineer with a thorough understanding of water control structures for the application of ecosystem restoration*
Cost Engineering	*The Cost Engineering reviewer should be a Cost DX Pre-Certified Professional with experience preparing cost estimates for ecosystem restoration projects.*

ATR Team Members/Disciplines	*Expertise Required*
Real Estate	*The Real Estate reviewer will have experience in developing real estate plans, working with engineers and surveyors to determine adequate project footprints and access areas for typical ecosystem restoration projects, and complying with the terms of cost-share agreements.*

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.

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**
IWR Planning Suite with Annualizer (version 2.0.6.0)	*IWR Planning Suite assists with plan comparison by conducting cost effectiveness and incremental cost analysis, identifying the plans that are the best financial investments based on costs and benefits.*
Wildlife Habitat Appraisal Guide (WHAG)	*The Wildlife Habitat Appraisal Guide, and Aquatic Habitat Appraisal Guide, are habitat suitability index models based on the U.S. Fish and Wildlife Service's Habitat Evaluation Procedures (HEP). HEP models use existing and proposed habitat conditions to predict changes in the suitability of habitat for selected species. These models will be used to evaluate and compare the future without- and with-project conditions of the Horseshoe Lake area to aid in the selection of a recommended plan.*
Aquatic Habitat Appraisal Guide (AHAG)	

9. Review Schedules And Costs.

Estimated ATR Schedule

	Date
AFB ATR	*1/30/13*
AFB Conference	*3/27/13*
Submit Final Report to MVD	*5/29/13*

Estimated ATR Cost

Reviewer	*Feasibility ATR*	*AFB Conference Participation*	*Cost*
ATR Lead/Plan Form	[redacted]	[redacted]	[redacted]
Economics	[redacted]		[redacted]
Real Estate			
Environmental			
Hydraulics and Hydrology			
Cost Engineering	[redacted]		[redacted]
Civil Engineer			
Geotechnical Engineer			
Structural Engineer			
TOTAL	[redacted]	[redacted]	[redacted]

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. *The public will have an opportunity to comment on the Environmental Assessment for the Spunky Bottoms project during the public review period which is estimated to occur in March 2013. A public meeting on the project will be held at that time. Draft and final versions of relevant reports will be posted on the St. Louis 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 1165-2-214. 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 Manager, St. Louis District 314-331-8286*
- *District Support Team Lead, Mississippi Valley Division 601-634-5293*

Attachment 1: Team Rosters

PRODUCT DELIVERY TEAM (PDT)

NAME	DISCIPLINE	OFFICE
[redacted]	*Civil/Drawings*	*EC-DCC*
	Cost Estimator	*EC-DCS*
	Structural	*EC-DAS*
	Mechanical	*EC-DAM*
	Geotech/Soils	*EC-G*
	Hydraulic Design	*EC-HD*
	Hydraulics/Water Quality	*EC-HQ*
	Cultural Resources	*EC-Z*
	Regulatory	*OD-F*
	Environmental	*PD-E*
	Project Manager	*PM-F*
	Economics	*PD-E*
	Program Analyst	*PM-N*
	Real Estate	*RE-A*

AGENCY TECHNICAL REVIEW (ATR)

NAME	***DISCIPLINE***	***DISTRICT/ OFFICE***	***CONTACT INFORMATION***	***CREDENTIALS & EXPERIENCE***
[redacted]	*Team Leader/ Plan Formulation*	*MVM PM-P*	[redacted]	*-Professional Engineer* *-10 yrs Environmental Engineer* *-7 yrs Project Management* *-Last 5 yrs Planning*
	Civil/ Geotechnical Engineer	*MVM EC-D*		*-Professional Engineer* *-6 yrs Civil Engineer Supervisor* *-10 yrs Geotechnical Engineer (Corps and A&E)*
	Cost Estimator	*MVM EC-D*		*-Certified Cost Consultant* *-Cost Engineering Regional Technical Specialist* *-24 yrs Cost Engineering*
	Hydrologic Engineer	*MVM EC-H*		*-Engineer in Training* *-30 yrs Hydraulics & Hydrology*
	Environmental	*MVM PM-E*		*-Certified USACE Working Diver,* *-10 yrs Biology (USACE)* *-4 yrs Biology (MS Dept. Environmental Quality)*
	Real Estate/ Economics	*MVM RE-E*		*-30 yrs Real Estate & Economics*

Attachment 2: Review Plan Revisions

Revision Date	Description of Change	Page/Paragraph Number
26 April 2011	*Update Team Members and Dates*	*p.7 all; p.9 para 1*
31 Aug 2011	*Update ATR Team Members and Dates*	*p. 7 all; p.9 para 2*
05 Dec 2012	*Update Team Members, Dates, and Costs*	*p.8 all; p.10 para 1*
08 Feb 2013	*Update ATR Team Member Table*	*p. 10 para 2*