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# **Three Rivers Southeast Arkansas Study**

## *Appendix D: 404(b)(1) Compliance*

# **THREE RIVERS SOUTHEAST ARKANSAS**

## **Introduction**

The Three Rivers Study, which encompasses the confluence of the Arkansas and White rivers with the Mississippi River in southeast Arkansas, is being conducted by the U. S. Army Corps of Engineers (USACE) to study the McClellan-Kerr Arkansas River Navigation System (MKARNS) in an effort to seek a long-term sustainable navigation system that promotes the continued safe and reliable economic use of the MKARNS.

There is a risk of breach of the existing containment structures near the entrance channel to the MKARNS on the White River. During high water events, water backing up the Mississippi can create significant head differentials between the Arkansas and the White rivers. The existing containment structures are subject to damaging overtopping, flanking and seepage that could result in a catastrophic breach. The uninhibited development of a breach, or cutoff, has the potential to create various navigation hazards, increase the need for dredging, and adversely impact an estimated 200 acres of bottomland hardwood forest in the isthmus between the Arkansas and White rivers.

## **Stage of Planning Process**

This is a feasibility study. A planning Charette was conducted in September 2015, and an Alternatives Milestone Meeting was completed in December 2015. The study is in the Alternative Formulation and Analysis Phase. Utilizing a reasonable level of detail, the PDT has analyzed, compared, and evaluated the array of alternatives to identify a Tentatively Selected Plan.

## **Study Authority**

Section 216, Flood Control Act of 1970 (Public Law 91-611) authorizes a feasibility study due to examine significantly changed physical and economic conditions in the Three Rivers study area. The study will evaluate and recommend modifications for long-term sustainable navigation on the MKARNS. Section 216 of the Flood Control Act of 1970 (Public Law 91-611) states:

*"The Secretary of the Army, acting through the Chief of Engineers, is authorized to review the operation of projects the construction of which has been completed and which were constructed by the Corps of Engineers in the interest of navigation, flood control, water supply, and related purposes, when found advisable due to significantly changed physical or economic conditions, and to report thereon to Congress with recommendations on the advisability of modifying the structures or their operation, and for improving the quality of the environment in the overall public interest."*

## **Non-Federal Sponsor**

The Arkansas Waterways Commission is the non-federal sponsor for the Three Rivers Southeast Arkansas Study. An amended feasibility cost-sharing agreement was executed in June 2015.

## **Purpose**

Based on the Section 216 authority, the study is investigating alternatives that would minimize the risk of cut off development, including reducing the cost of maintenance associated with preventing cutoff development, while minimizing impacts to the surrounding ecosystem.

## EVALUATION OF SECTION 404(b)(1) GUIDELINES (SHORT FORM)

### PROPOSED PROJECT: Three Rivers Southeast Arkansas Integrated Feasibility Report and Environmental Assessment

	Yes	No*
<b>1. Review of Compliance (230.10(a)-(d))</b>		
A review of the proposed project indicates that:		
a. The placement represents the least environmentally damaging practicable alternative and, if in a special aquatic site, the activity associated with the placement must have direct access or proximity to, or be located in the aquatic ecosystem, to fulfill its basic purpose (if no, see section 2 and information gathered for EA alternative).	<b>X</b>	
b. The activity does not appear to:		
1) Violate applicable state water quality standards or effluent standards prohibited under Section 307 of the Clean Water Act;	<b>X</b>	
2) Jeopardize the existence of Federally-listed endangered or threatened species or their habitat; and	<b>X</b>	
3) Violate requirements of any Federally-designated marine sanctuary (if no, see section 2b and check responses from resource and water quality certifying agencies).	<b>X</b>	
c. The activity will not cause or contribute to significant degradation of waters of the U.S. including adverse effects on human health, life stages of organisms dependent on the aquatic ecosystem, ecosystem diversity, productivity and stability, and recreational, aesthetic, an economic values (if no, see values, Section 2)	<b>X</b>	
d. Appropriate and practicable steps have been taken to minimize potential adverse impacts of the discharge on the aquatic ecosystem (if no, see Section 5)	<b>X</b>	

	Not Applicable	Not Significant	Significant*
<b>2. Technical Evaluation Factors (Subparts C-F)</b> (where a 'Significant' category is checked, add explanation below.)			
a. Physical and Chemical Characteristics of the Aquatic Ecosystem (Subpart C)		<b>X</b>	
1) Substrate impacts		<b>X</b>	
2) Suspended particulates/turbidity impacts		<b>X</b>	
3) Water column impacts		<b>X</b>	
4) Alteration of current patterns and water circulation		<b>X</b>	
5) Alteration of normal water fluctuation/hydroperiod		<b>X</b>	
6) Alteration of salinity gradients			<b>X</b>
b. Biological Characteristics of the Aquatic Ecosystem (Subpart D)			
1) Effect on threatened/endangered species and their habitat		<b>X</b>	
2) Effect on the aquatic food web		<b>X</b>	
3) Effect on other wildlife (mammals, birds, reptiles and amphibians)		<b>X</b>	

	Not Applicable	Not Significant	Significant*
<b>2. Technical Evaluation Factors (Subparts C-F)</b> (where a 'Significant' category is checked, add explanation below.)			
c. Special Aquatic Sites (Subpart E)			
1) Sanctuaries and refuges		X	
2) Wetlands		X	
3) Mud flats		X	
4) Vegetated shallows		X	
5) Coral reefs	X		
6) Riffle and pool complexes	X		
d. Human Use Characteristics (Subpart F)			
1) Effects on municipal and private water supplies	X		
2) Recreational and Commercial fisheries impacts		X	
3) Effects on water-related recreation		X	
4) Aesthetic impacts		X	
5) Effects on parks, national and historical monuments, national seashores, wilderness areas, research sites, and similar preserves		X	

	Yes
<b>3. Evaluation of Dredged or Fill Material (Subpart G)</b>	
a. The following information has been considered in evaluating the biological availability of possible contaminants in dredged or fill material (check only those appropriate)	
1) Physical characteristics	X
2) Hydrography in relation to known or anticipated sources of contaminants	X
3) Results from previous testing of the material or similar material in the vicinity of the project	
4) Known, significant sources of persistent pesticides from land runoff or percolation	
5) Spill records for petroleum products or designated (Section 311 of Clean Water Act) hazardous substances	
6) Other public records of significant introduction of contaminants from industries, municipalities or other sources	
7) Known existence of substantial material deposits of substances which could be released in harmful quantities to the aquatic environment by man-induced discharge activities	

List appropriate references:

	Yes	No
b. An evaluation of the appropriate information in 3a above indicates that there is reason to believe the proposed dredged or fill material is not a carrier of contaminants, or that levels of contaminants are substantively similar at extraction and placement sites and not likely to degrade the placement sites, or the material meets the testing exclusion criteria.	X	

	Yes
<b>4. Placement Site Delineation (230.11(f))</b>	N/A
a. The following factors as appropriate, have been considered in evaluating the placement site:	
1) Depth of water at placement site	
2) Current velocity, direction, and variability at placement site	
3) Degree of turbulence	
4) Water column stratification	
5) Discharge vessel speed and direction	
6) Rate of discharge	
7) Fill material characteristics (constituents, amount, and type of material, settling velocities)	
8) Number of discharges per unit of time	
9) Other factors affecting rates and patterns of mixing (specify)	

**List appropriate references:**

	Yes	No
b. An evaluation of the appropriate factors in 4a above indicates that the placement site and/or size of mixing zone are acceptable.	N/A	

	Yes	No
<b>5. Actions to Minimize Adverse Effects (Subpart H)</b>		
All appropriate and practicable steps have been taken, through application of recommendations of 230.70-230.77 to ensure minimal adverse effects of the proposed discharge.	X	

**List actions taken:**

- 1) Best Management Practices for construction will be implemented at all construction sites to minimize possible adverse effects.

	Yes	No*
<b>6. Factual Determination (230.11)</b>		
A review of appropriate information as identified in items 2-5 above indicates that there is minimal potential for short- or long-term environmental effects of the proposed discharge as related to:		
a. Physical substrate at the placement site (review Sections 2a. 3, 4, and 5 above)	X	
b. Water circulation, fluctuation and salinity (review Sections 2a. 3, 4, and 5)	X	
c. Suspended particulates/turbidity (review Sections 2a. 3, 4, and 5)	X	
d. Contaminant availability (review Sections 2a. 3, and 4)	X	
e. Aquatic ecosystem structure and function (review Sections 2b and c, 3, and 5)	X	
f. Placement site (review Sections 2, 4, and 5)	X	
g. Cumulative impacts on the aquatic ecosystem	X	
h. Secondary impacts on the aquatic ecosystem	X	

<b>7. Evaluation Responsibility</b>
a. This evaluation was prepared by: <b>Craig Hilburn</b> Position: <b>Biologist, Regional Planning and Environmental Center</b>

<b>8. Findings</b>	Yes
a. The proposed placement site for discharge of or fill material complies with the Section 404(b)(1) Guidelines.	X
b. The proposed placement site for discharge of dredged or fill material complies with the Section 404(b)(1) Guidelines with the inclusion of the following conditions:	

List of conditions:

c. The proposed placement site for discharge of dredged or fill material does not comply with the Section 404(b)(1) Guidelines for the following reason(s):	
1) There is a less damaging practicable alternative	
2) The proposed discharge will result in significant degradation of the aquatic ecosystem	
3) The proposed discharge does not include all practicable and appropriate measures to minimize potential harm to the aquatic ecosystem	
_____	_____
Date	

NOTES:

- \* A negative, significant, or unknown response indicates that the permit application may not be in compliance with the Section 404(b)(1) Guidelines.

Negative responses to three or more of the compliance criteria at the preliminary stage indicate that the proposed projects may not be evaluated using this “short form” procedure. Care should be used in assessing pertinent portions of the technical information of items 2a-e before completing the final review of compliance.

Negative response to one of the compliance criteria at the final stage indicates that the proposed project does not comply with the Guidelines. If the economics of navigation and anchorage of Section 404(b)(2) are to be evaluated in the decision-making process, the “short form” evaluation process is inappropriate.