Three Rivers Southeast Arkansas Study

Appendix L: Best Management Practices

THREE RIVERS SOUTHEAST ARKANSAS

Introduction

The Three Rivers Southeast Arkansas Feasibility Study (Three Rivers Study) is being conducted by the U. S. Army Corps of Engineers (USACE) to recommend modifications to the McClellan-Kerr Arkansas River Navigation System (MKARNS) that would provide long-term sustainable navigation and promote the continued safe and reliable economic use of the MKARNS.

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.

Study Purpose

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

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 maintence associated with preventing cutoff development, while minimizing impacts to the surrounding ecosystem.

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.

Recommended Plan

The recommended plan consists of a newly constructed 2.5-mile long containment structure at an elevation of 157 feet above mean sea level (ft msl) that would begin on natural high ground just south and west of the existing Melinda Structure located on the south side of Owens Lake. It would continue east and cross the Melinda head cut south of the existing Melinda Structure. From there, it would head northeast and connect to the existing Soil Cement Structure north of Jim Smith Lake. It continues to follow the existing Soil Cement Structure alignment terminating at the existing Historic Closure Structure. The recommended plan also includes a relief opening at the Historic Cutoff to an elevation 145 ft msl regardless of the width. In addition, the existing Melinda Structure would be demolished in place and the debris would be pushed into the deep scour hole at the top of the head cut. Finally, adding an opening in the existing Owens Lake Structure between Owens Lake and the White River would prevent water from backing up into Owens Lake, which would impact the bottomland hardwood forest. The opening would be designed to allow fish passage into Owens Lake.

Best Management Practices (BMPs)

Best Management Practices (BMPs) are recognized as an important part of reducing impacts from ground disturbance related activities. BMP means a practice, or combination of practices, that is determined to be an effective and practicable (including technological, economic, and institutional considerations) means of preventing or reducing impacts on the environment.

The following table is a list of BMPs that should be followed during implementation of the recommended plan. Additional BMPs may be identified during the Pre-construction, Engineering and Design (PED) phase when plans and specifications are developed. Additional BMPs would be identified using various industry, state and federal standards for activities which are accepted as a best practice to minimize impacts. Each of the BMPs in the following table and the additional BMPs developed during PED, would be incorporated into the contract specifications which the contractor would be required to follow.

Implementation of these or any other BMPs would not increase the cost of the project; however, it would further reduce the impacts described in Chapter 4 of the feasibility report. If the BMP(s), for some reason, are not implemented the impacts of the recommended plan would not change and it would not result in greater impacts that could result in significant impacts.

Table 1. Best Management Practices for Implementation of the Recommended Plan

Resource	Best Management Practice Description	Purpose
Air	• Unpaved/untreated surfaces and disturbed soil areas need to be watered or treated with a dust palliative to prevent excessive dust generation. • Cease all clearing, grading, earth moving, and excavation during periods when winds are greater than 30 miles per hour when disturbed material is easily windblown. • Limit speed on the haul roads to no more than 10 mph. Speed should be reduced to 5 mph when nearing a frequently used location (e.g. intersection, trail head or crossing, monuments, facilities, etc.)	Reduce Dust Emissions
Air/Climate	• Shut down equipment when not in use for extended periods. • Substitute electric equipment for diesel- or gasoline-powered equipment, whenever possible. • Equip all construction vehicles with proper emissions control equipment and keep in good and proper running order. • Encourage carpooling among construction personnel to reduce commute trips to and from the project site.	Reduce Air Emissions

Resource	Best Management Practice Description	Purpose
Water	• Have spill kits and cleanup materials available at all locations where equipment is being used. • Use drip pans or absorbent pads during vehicle and equipment maintenance, cleaning, fueling, and storage. • Keep equipment that is in use in streambeds leak free. • When not in use, store equipment away from surface water flows and drainages. • No “live” or fresh concrete shall come into contact with flowing surface waters until the concrete has cured.	Prevent Water Quality Degradation from Accidental Spills and introduced construction materials
Water	• The river’s/oxbow’s normal flow and flow during minor rainfall events shall be maintained near normal downstream flow conditions without mixing with untreated water from the work area. This can be accomplished by diverting the surface water around or through the work area or by delaying work when river flows do not reach the work site. • If temporary in-stream structures are used, they must be installed with geotextile fabric beneath them, and removed in their entirety immediately upon completion of in-stream work. • Install turbidity curtain when water surface velocity and depth are sufficient to move debris downstream outside of the work area. • If dewatering is necessary, every effort should be made to minimize the extent of the area to be dewatered and the length of time the site is dewatered.	Reduce impacts to jurisdictional waters

Resource	Best Management Practice Description	Purpose
Wetlands	• For wetland locations that are temporarily disturbed from construction but not converted to impervious surface: o Sort excavated material into topsoil and subsoil. o Stockpile topsoil material from subsoil. o Set aside topsoil on a sheet for later placement back into the wetland. A minimum 4" depth of topsoil is recommended. o Cover the stockpile with a sheet to prevent escape of material before replacing it back in the wetland. o For restoration, place subsoil first with the deepest original material placed first. Place all of the topsoil in its original position as the last layer ensuring to restore the pre-existing elevations. Excess material that cannot be placed back into the wetland shall be removed from the construction site and placed where it does not affect surface flow patterns. Replaced sediment should be appropriately compacted commensurate with the compaction observed at nearby wetland sites.	Minimize long-term wetland degradation
Water/Soil	• Install erosion and sedimentation control measures prior to any land disturbing activity, including clearing and grubbing. • Ensure sedimentation control measures are installed both within the work area and on the outside limits of the work area to control runoff from disturbed areas before it leaves the site. • Remove erosion and sedimentation control measures after work is complete and the disturbed area has stabilized. • Use the most appropriate structure for intercepting and detaining a small amount of sediment-laden runoff. Examples include: silt fencing; silt ditch, detention basins; mulch, compost, sand bag, stone or brush filter berms or socks; and hay bale dikes. • Design open, easily erodible areas so that stormwater runoff does not flow into or towards tributaries. Or temporarily divert stormwater flow through a diversion dike or swale before flows reach exposed, easily erodible areas.	Limit soil erosion and subsequent sediment transport into water sources reducing the potential for increased turbidity and decreased water quality.

Resource	Best Management Practice Description	Purpose
Soil/Wetlands	• Conduct activity during the dry season when water levels are lowest, when practicable. • Avoid driving across excessively wet soils to prevent rutting. If equipment must operate in excessively wet soils, use construction mats, woody debris, or other techniques to stabilize the work site. Select the appropriate type of equipment to operate in wet conditions. • Take appropriate measures to remove mud tracked onto paved road surfaces.	Reduce compaction and aeration of soils. Sustain productivity of soils.
Biological Resources	• Avoid cutting vegetation during the bird breeding season. • Limiting speed on the haul roads to no more than 10 mph. Speed should be reduced to 5 mph when nearing a frequently used location (e.g. intersection, trail head or crossing, monuments, facilities, etc.) • Minimize ground-disturbing activities by designing staging and construction impact areas, as well as haul roads, in non-sensitive areas, areas that require the least amount of vegetation removal, and at the smallest size possible.	Reduce potential disturbances to and mortality of some wildlife species
Invasive Species	• Use certified weed-free hay, straw, and/or other materials for erosion control. • If seeding is required to assist in reclamation efforts of temporary access roads and/or construction disturbance zones, use certified weed-free seed. • Equipment should be thoroughly cleaned before being transported to/from the work site. Acceptable methods of cleaning include, but are not limited to: o Portable wash station that contains runoff from washing equipment o High pressure air o Brush, broom, or other hand tools (used without water) • Minimize soil disturbance whenever possible and stabilize disturbed soils as soon as possible.	Reduce the introduction and spread of invasive species
Noise	• Equip all construction equipment with noise control devices (e.g. mufflers), in accordance with manufactures' specifications.	Reduce noise generated from construction equipment

Resource	Best Management Practice Description	Purpose
Recreation/ Public Health and Safety	• A contractor-prepared Worker Health and Safety Plan to maintain public safety during all phases of construction. Components of the plan would include: o Emergency response procedures o Appropriate worker, public health, and environmental protection equipment and procedures. o Most direct route to the hospital. o Name of the Site Safety Officer • Coordination with the Dale Bumpers White River National Wildlife Refuge and Trusten Holder Wildlife Management Area staff to notify the public of the location and duration of construction activities, and where short-term closures of recreation sites, trails, and/or roads may be occurring. • Posting signs locating construction sites and warning of the presence of construction equipment. • Fence construction staging areas, construction worksite, and borrow areas to prevent public access. • Limiting speed on the haul roads to no more than 10 mph. Speed should be reduced to 5 mph when nearing a frequently used location (e.g. intersection, trail head or crossing, monuments, facilities, etc.)	Limit exposure of the public to construction activities