

**Draft**  
**SECTION 404(B)(1) EVALUATION**  
**FOR**  
**EXCAVATION AND RIPRAP PLACEMENT**  
**PROPOSED TENNESSEE-TOMBIGBEE WATERWAY**  
**BARGE MOORING FACILITY**  
**LUXAPALILA CREEK**  
**COLUMBUS, LOWDNES COUNTY, MISSISSIPPI**

1. PROJECT DESCRIPTION:

a. Location. The project area is located near the Luxapalila Creek Park and Boat Ramp, at the convergence of the Tennessee-Tombigbee Waterway (TTW) and Luxapalila Creek, at latitude 33° 27' 34" North and longitude 88° 25' 47" West, Lowndes County, Mississippi on the western edge of Columbus city limits and south of U.S. Highway 82. Columbus, Mississippi, the county seat of Lowndes County, is located in east-central Mississippi on the TTW within the Aliceville Lake. The TTW is a navigation project constructed and maintained by the U.S. Army Corps of Engineers (Corps), and was completed in 1985. The general location of the project is shown on Figure 1.

b. General Description. This proposed action is to construct a barge mooring facility at the mouth of the Luxapalila Creek. This site is approximately five miles downstream of the Stennis Lock and Dam, adjacent to river mile 329. The proposed site is Northwest of Luxapalila Park and approximately 1,500x300 feet. The general description of the project is shown on Figure 2.

This project will involve clearing and grubbing of approximately 12 acres to the North West of the Luxapalila Creek. The project will require the excavation and removal of approximately 300,000 cubic yards, which will include deepening the creek in this area by 3 feet. All excavated material will be placed in existing upland disposal areas. The excavation will extend to elevation 127 NGVD. It will also require the placement of 6,200 cubic yards of riprap to protect the new slopes.

This project will include the placement of six mooring dolphins. These dolphins will be constructed off three steel piles driven into the bottom and braced together to form a single mooring dolphin. We will also construct six concrete dead-men, which will be located landward of the mooring dolphins. These dead-men will be constructed of concrete and will have dimensions of approximately 10x10x9 feet. These dead-men will be used in conjunction with steel cables to anchor the barges. Maintenance dredging will require the removal of approximately 5,000 to 10,000 cubic yards of material annually.

c. Authority and Purpose. The existing TTW project was authorized by the River & Harbor Act of 24 July 1946 (House Document 486, 79<sup>th</sup> Congress, Second Session). Construction was initiated in April 1975. The Water Resources Development Act of 1996, Public Law 104-303 October 12, 1996, Section 502 authorized changing the name of this project from Columbus Lock and Dam to John C. Stennis Lock and Dam. The proposed barge mooring facility would be part of the TTW project. The proposed project is to provide safe mooring of barges during high water events. Water levels downstream of Stennis Lock and Dam fluctuate as much as 25 feet during major rain events. Most waterway users do not navigate during these types of events and prefer to moor their tows to prevent potential accidents and property damage. The proposed facility would also provide secondary benefits by providing mooring for tows

waiting to be serviced by the local ports along the waterway. It also provides safe mooring for tows during emergency lock closures.

d. General Description of Dredge or Fill Material.

(1) General Characteristic of Material. The material excavated from the channel is composed primarily of alluvial soils and some sand and gravel. The Eutaw consists of gray, well compacted, micaceous and glauconitic silty clay, clayey sand and sandy clay.

(2) Quantity of Material. The project will require the excavation and removal of approximately 300,000 cubic yards of material. In addition, riprap will require the placement of 6,200 cubic yards of material.

(3) Source of Material. Excavated material will be removed from the Luxapalila Creek channel and bank. Riprap material will be obtained from various local and regional vendors.

e. Description of the Proposed Discharge Site.

(1) Location. The proposed disposal sites are located on Figure 3.

(2) Type of Habitat. The AL 14 and AL 17 disposal areas are existing upland and confined disposal areas that are approved to accept materials that contain sand and gravel.

(3) Timing and Duration of Discharge. Excavation and placement of the riprap materials associated with the construction of the project is projected to begin in the fall of 2007.

f. Description of Disposal Method. The excavated material will either be mechanical or hydraulic. The contractor will determine how to excavate. The general construction contractor could use a mechanical bucket dredge or subcontract part of the excavation out to a hydraulic dredge.

II. Factual Determinations:

a. Physical Substrate Determinations.

(1) Substrate Elevation and Slope. The substrate placed in AL-14 and AL-17 will be confined within the disposal areas.

(2) Sediment Type. The sediment type of the disposal and fill sites would be altered due to placement of excavated material and riprap. However, the change in sediment type is not expected to be significant since the fill material is of similar sand and gravel composition of the original sediment type. The only deviation to this involves the use of riprap along the creek bank and the excavation and disposal of the Eutaw Formation material.

(3) Dredged/Fill Material Movement. The offsite movement of fill material is not expected to be significant since upland disposal sites will be utilized. The placement of riprap along the creek bank will be of such a size so as to prevent movement and erosion during high flows.

(4) Physical Effects on the Benthos. Some benthos would be destroyed by the discharge located in the sites. However, the placement of riprap material into the creek will provide habitat for the benthos. These areas will provide a stable habitat base in the creek over time. Maintenance activities are not expected to adversely affect benthic communities that colonize the riprap areas; however, the removal of sediment from the creek annually would temporarily disrupt and destroy benthic communities. It is anticipated that benthic communities will recolonize all construction sites within the creek since undisturbed sites along the creek will serve as a source for recolonization.

(5) Other Effects. No other significant physical substrate effects are anticipated from the proposed fill action.

(6) Actions Taken to Minimize Impacts (Subpart H). Work will be done during the fall and winter or early spring to minimize these effects. During this time fewer of the short lived species will exist in the area and others, such as the fresh water mussels and other macrobenthic invertebrates will be under less stress, water temperatures are cooler and better able to accommodate the discharge.

b. Water Circulation, Fluctuation, and Salinity Determinations.

(1) Water:

(a) Salinity. Not applicable.

(b) Water Chemistry. Water chemistry will not be significantly affected due to the uncontaminated nature of the riprap fill material.

(c) Clarity. Water clarity will be temporarily decreased during the construction and O&M activities due to increased turbidity associated with the excavation and fill activities. It is anticipated that water clarity will quickly return to pre-project conditions within a short time after construction and O&M activities cease.

(d) Color. No lasting effect.

(e) Odor. No effect.

(f) Taste. No effect.

(g) Dissolved Gas Levels. Dissolved gas levels should not be significantly affected by the riprap fill material during construction and O&M activities.

(h) Nutrients. Nutrients levels within Luxapalila Creek would not be significantly affected during construction and O&M activities.

(i) Eutrophication. Eutrophication would not be significantly affected in Luxapalila Creek because nutrient levels are not expected to change.

(2). Current Patterns and Circulation:

(a) Current Patterns and Flow. The placement of riprap in the Luxapalila Creek along the creek banks to reduce potential erosion will not alter current and flow patterns.

(b) Velocity. Velocities in the partially realigned channel of Luxapalila Creek will be decreased during flood flows due to the increased hydraulic efficiency of the creek.

(c) Stratification. Not applicable.

(3) Normal Water Level Fluctuations. Lake levels will not be measurably affected.

(4) Salinity Gradients. Not applicable.

c. Suspended Particulate/Turbidity Determinants.

(1) Expected Changes in Suspended Particulate and Turbidity Levels in Vicinity of Disposal Sites. The placement of various construction materials at various locations in the Luxapalila Creek during construction will have a short term effect on suspended particulate and turbidity levels in the immediate vicinity of construction of the fleet barge mooring facility and riprap.

(2) Effects on Chemical and Physical Properties of the Water Column. No long term, significant, adverse effects are expected to occur.

(a) Light Penetration. Light penetration into the waters of Luxapalila Creek would be temporarily affected during construction and O&M activities due to temporary increases in turbidity.

(b) Dissolved Oxygen. Dissolved oxygen will not be significantly affected.

(c) Toxic Metals and Organics. No significant increases in toxic metals and organics are expected to occur as a dredging and disposal activities.

(d) Pathogens. No pathogens are known in vicinity of the construction and O&M sites.

(e) Aesthetics. The placement of the excavated material in the upland disposal sites will improve the aesthetics of the area and will allow unproductive areas to again become productive for wildlife habitat and other uses. A temporary and localized increase in turbidity will occur during excavation and placement of riprap in Luxapalila Creek; however, these impacts will be minimal and insignificant.

(3) Effects on biota.

(a) Primary Production, Photosynthesis. The placement of fill material in the upland disposal sites may destroy the existing plant communities at these sites and improve the less vegetated areas. However, the fill sites will be allowed to revegetate over time; therefore, the overall effect on primary productivity and photosynthesis will be insignificant. Also, the habitat provided by the riprap will have a positive benefit for algae growth.

(b) Suspension/Filter Feeders. Suspension/filter feeders will not be significantly affected.

(c) Sight Feeders. Sight feeders would be temporarily affected by any changes in turbidity.

(4) Contaminant Determination. No contaminants harmful to the environment are known to exist in the proposed barge mooring area as determined by the environmental site assessment investigation where the proposed fill material would be placed during construction and O&M activities.

e. Aquatic Ecosystem and Organism Determinations.

(1) Effects on Plankton. Only short-term, localized impacts are expected upon the plankton communities.

(2) Effects on Benthos. While short term adverse impacts will occur to the benthos in the area to be filled, long-term beneficial impacts are expected.

(3) Effects on Nekton. Nektonic species are expected to temporarily be destroyed in the area during dredging and disposal operations, and return to the area once turbidity levels return to ambient conditions. No significant impacts are expected.

(4) Effects on Aquatic Food Web. No significant impact is expected.

(5) Effects on Special Aquatic Sites.

(a) Sanctuaries and Refuges. The proposed disposal of dredged material will not affect any sanctuaries or refuges.

(b) Wetlands. Approximately 1.63 acres of wetlands will be affected by excavation. To mitigate for the loss of wetlands, the Corps proposes to utilize White Slough which was purchased in 2004 under the Water Resources Development Act (WRDA) 2000 for wildlife mitigation off the Cut-off of the TTW and is part of the reserve land and available for mitigation needs on the TTW. White Slough consists of 76 acres of prime bald cypress and tupelo gum habitat and is in close proximity to the proposed project. The Corps office in Columbus would work with Regulatory Division personnel to assure that the wetlands are mitigated in accordance with established policies.

(c) Mud Flats. Not applicable.

(d) Vegetated Shallows. Not applicable.

(e) Coral Reefs. Not applicable.

(f) Riffle and Pool Complexes. The excavation and placement of fill material into Luxapalila Creek will increase the amount of pool habitat at the project site. No riffle areas are found on the project site.

(6) Threatened and Endangered Species. The U.S. Fish and Wildlife Services review of the proposed activities and the U.S. Department of Interior List of Endangered and Threatened Wildlife and Plants, indicates that the following species potentially have habitat in the project vicinity:

T - Orange-nacre mucket mussel (*Lampsilis perovalis*)

T - Alabama moccasinshell mussel (*Medionidus acutissimus*)

E - Southern combshell mussel (*Epioblasma penita*)

- E - Ovate clubshell mussel (*Pleurobema perovatum*)
- E - Heavy pigtoe mussel (*Pleurobema taitianum*)
- E - Stirrup shell mussel (*Quadrula stapes*)
- E - Black clubshell (*Pleurobema curtum*)
- E - Southern clubshell mussel (*Pleurobma decisum*)

(7) Other Wildlife. During construction, it is expected that wildlife within the immediate vicinity of the work area would be displaced as a result of increased noise and human activity and the loss of approximately 12 acres to wildlife mitigation lands. However, the Water Resources Development Act (WRDA) of 2000 (Public Law 106-541) authorized the removal of land from the TTW Wildlife Mitigation Program as necessary for the operation of the project provided that at least an equal acreage of replacement lands has already been acquired.

Section 301 of WRDA 2000 authorizes the purchase of lands to be used to replace those removed from the TTW Wildlife Mitigation Program. Appendix D of the Standard Operating Procedure specifies that the Corps would aim to avoid reducing the reserve of replacement lands by more than 25%. Removing 12 acres by clearing and grubbing would not reduce the reserve by more than 25%. According to the Corps Columbus Office, there is currently 267.31 acres that have been removed from the mitigation lands and 508.21 acres have been added to the reserve of replacement lands.

(8) Actions to Minimize Impacts. Excavation and placement of dredged material could be done in the fall, winter or early spring when most biota is well dispersed and/or activity is at a minimum, and when water temperatures are cooler.

g. Proposed Fill Site Determination.

(1) Mixing Zone Determination. State water quality requirements will be utilized for this project; therefore, turbidity outside the limits of the mixing zone shall not exceed the ambient turbidity by more than 50 Nephelometric Turbidity Units.

(2) Determination of Compliance with Applicable Water Quality Standards. Due to the nature of excavated material and the use of primarily upland disposal sites, will be in compliance with applicable Federal and state standards.

(3) Potential Effects on Human Use Characteristics.

(a) Municipal and Private Water Supply. No municipal or public water supply intakes are located in the vicinity of the proposed disposal areas for the dredged material or riprap placement areas.

(b) Recreation and Commercial Fisheries. Fishing activities will be temporarily disrupted at the disposal sites due to slight turbidity increases during the disposal of dredged material. Access to the Luxapalila Creek Park will temporarily be disrupted during construction, but will not be affected during operation of the barge mooring facility.

(c) Water Related Recreation. Fishing and boating activities will be temporarily disrupted during the disposal activities at the disposal sites.

(d) Aesthetics. Aesthetics will be temporarily impacted during the dredging and disposal activities, but will return to existing conditions following completion of the dredging activities.

(e) Parks, National and Historic Monuments, National Seashores, Wilderness Areas Research Sites, and Similar Preserves. The Water Resources Development Act (WRDA) of 2000 (Public Law 106-541) authorized the removal of land from the TTW Wildlife Mitigation Program as necessary for the operation of the project provided that at least an equal acreage of replacement lands has already been acquired.

(4) Determination of Cumulative Effects on the Aquatic Ecosystem. The impacts of the proposed creek banks and upland disposal at the site will be minor and temporary and, therefore, will not contribute to adverse cumulative impacts.

(5) Determination of Secondary Effects on the Aquatic Ecosystem. The loss of benthic organisms and habitat on the disposal site would have an insignificant effect on the fishery resources in Luxapalila Creek. Also, the temporary and localized increase in turbidity will insignificantly reduce primary productivity. Grade control structures located upstream of the construction site at mile 6 provide additional protection from head cutting. Dredging records for the Tennessee-Tombigbee River indicate shoaling and deposition routinely occur within the reach.

### III. Findings of Compliance or Noncompliance with the Restrictions on Discharge.

a. Adaptation of Section 404(b) (1) Guidelines to the Evaluations. No significant adaptations of the guidelines were made relative to this evaluation.

b. Consideration of the Availability of Practicable Alternatives to the Proposed Discharge Site Which Would Have Less Adverse Impacts on the Aquatic Ecosystem. The proposed discharge represents the least environmentally damaging practicable alternative that would accomplish the project objectives.

c. Compliance with State Water Quality Standards. Based on the nature of the fill material, the placement of the riprap will be in compliance with state water quality standards.

d. Compliance with Applicable Toxic Effluent Standard or Prohibition Under Section 307 of the Clean Water Act. The fill material will not violate the toxic standards of Section 307 of the Clean Water Act.

e. Compliance with Endangered Species Act. The placement of fill and riprap material will be in compliance with the Endangered Species Act of 1973, as amended. The Corps has concluded that the proposed action would not adversely affect federally protected mussel species because the proposed area consists of impounded and channelized waters, and therefore suitable habitat is not present for these species. In a letter dated August 14, 2007, the FWS concurs that the proposed barge mooring facility is not likely to adversely affect federally listed species.

f. Compliance with Specific Protection Measures for Marine Sanctuaries Designated by the Marine Protection, Research, and Sanctuaries Act. Not applicable.

g. Evaluation of Extent of Degradation of the Waters of the United States. The proposed fill plan is specified as complying with the requirements of these guidelines.

h. Appropriate and Practicable Steps Taken to Minimize Potential Adverse Impacts of the Discharge on the Aquatic Ecosystem. The proposed fill plan is specified as complying with the requirements of these guidelines. To mitigate for the loss of wetlands, the Corps proposes to utilize White Slough which was purchased in 2004 under the Water Resources Development Act (WRDA) 2000 for wildlife mitigation off the Cut-off of the TTW and is part of the reserve land and available for mitigation needs on the TTW. White Slough consists of 76 acres of prime bald cypress and tupelo gum habitat and is in close proximity to the proposed project. The Corps office in Columbus would work with Regulatory Division personnel to assure that the wetlands are mitigated in accordance with established policies.

i. On the Basis of the Guidelines, the proposed Disposal Site for the Discharge of Dredged Material. Specified as complying with the requirements of these guidelines, with the inclusion of appropriate and practical conditions to minimize pollution or adverse effects on the aquatic ecosystem.

DATE: \_\_\_\_\_

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Byron G. Jorns  
Colonel, Corps of Engineers  
District Commander

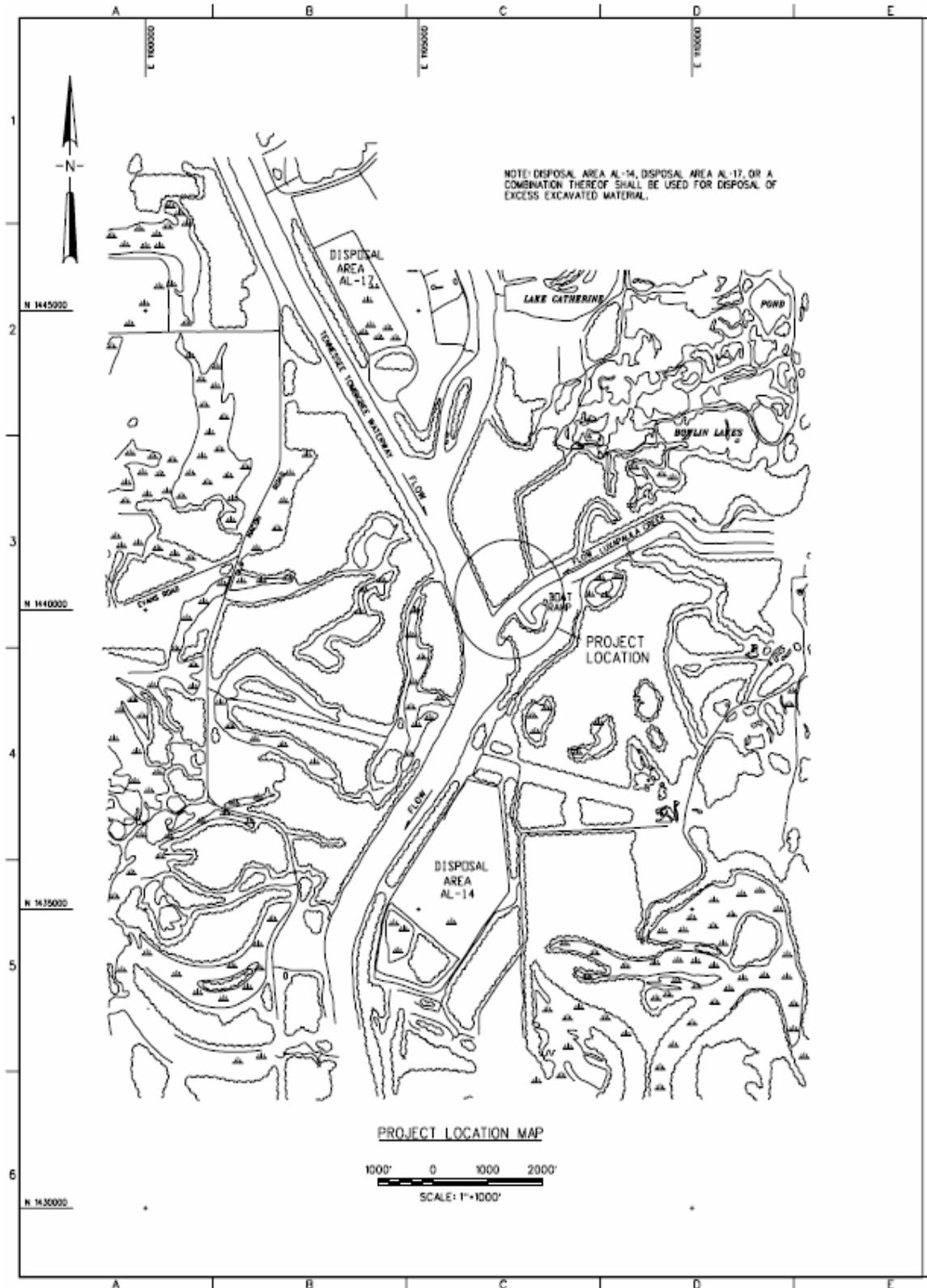


Figure 1: Project Location Map



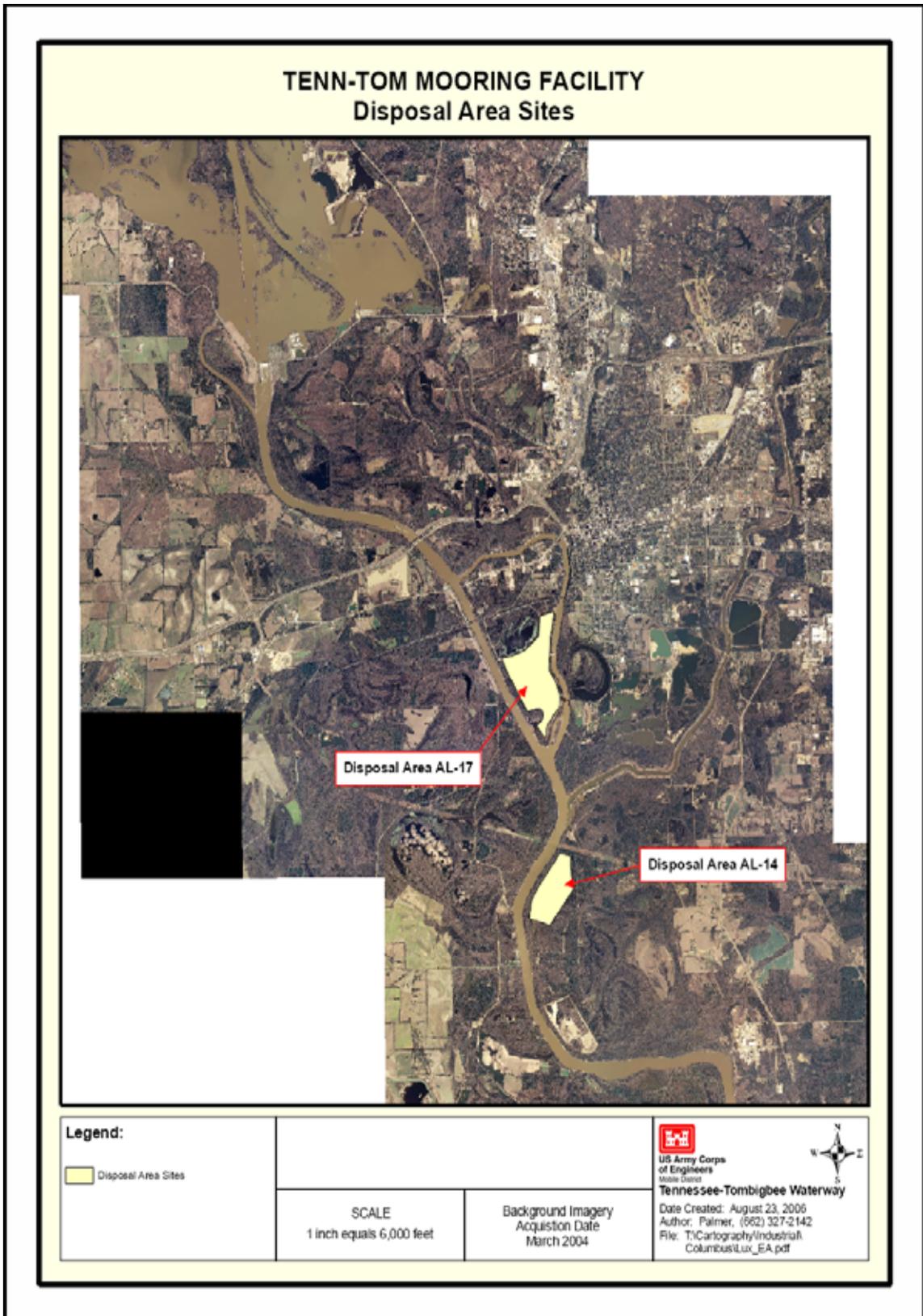


Figure 3: Disposal Area Sites Map