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**MUSCLE SHOALS OUTDOOR EDUCATION AND  
RECREATION AREA IMPROVEMENTS  
ENVIRONMENTAL ASSESSMENT**  
Colbert County, Alabama

**Prepared by:**  
TENNESSEE VALLEY AUTHORITY  
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## **The Proposed Action and Need**

As part of the Tennessee Valley Authority's (TVA) Environmental Education Program, TVA is utilizing its existing walking/hiking trail network in Muscle Shoals, Alabama, to create an outdoor education and self-guided interpretive trail network. To support the goals of this program, TVA proposes to improve the existing trail/recreation system on the Muscle Shoals Reservation (MSR), north of Reservation Road. The improvements would include activities in three main trail heads: the Rockpile Recreation Area, Civilian Conservation Corps (CCC) Pavilion Area, and the Native Plant Garden Area (Figure 1).

The existing MSR walking/hiking trail network was developed and maintained opportunistically without an overriding theme or concept. The result has been a conglomerate of trail networks with varying designs and materials for trail infrastructure, signs, benches, picnicking areas, and viewing areas. TVA's goal is to create a premier outdoor education and self-guided interpretive trail network. The proposed action would assist TVA in obtaining this goal.

## **Background**

In 2011, the TVA completed a Natural Resource Plan (NRP) that strategically guides the management of both renewable and nonrenewable resources, underscoring the importance of protecting those resources that will be lost forever if they are not actively protected or improved today. TVA is one piece of the solution and recognizes the need for a coordinated and collaborative effort to meet the near- and long-term resource needs. As such, the NRP is designed to:

- Integrate the objectives of six resource areas (biological, cultural, recreation, water, public engagement and reservoir lands planning)
- Provide optimum public use benefit
- Balance competing and sometimes conflicting resource uses

The NRP represents TVA's high-level strategy for managing its natural resources in the near and long term. The Environmental Education Program is one of the Public Engagement Programs within the NRP. The primary purpose of the Environmental Education Program is to enhance awareness and appreciation of the natural resources within the Tennessee River Valley. Other key aspects of the Program include: increasing stakeholders' awareness of their role in resource protection and encouraging participation in TVA stewardship programs where applicable.

The Animal House is located within the MSR trail network north of Reservation Road, specifically south of the Southport Historical Trail. This structure is potentially eligible for the National Register of Historical Places due to its historic connection to the CCC and previous activities on the MSR. The structure is in need of repairs; however, TVA is not ready to proceed with the environmental review related to this structure. This environmental review does not include the Animal House in its proposed action.

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Environmental Assessment

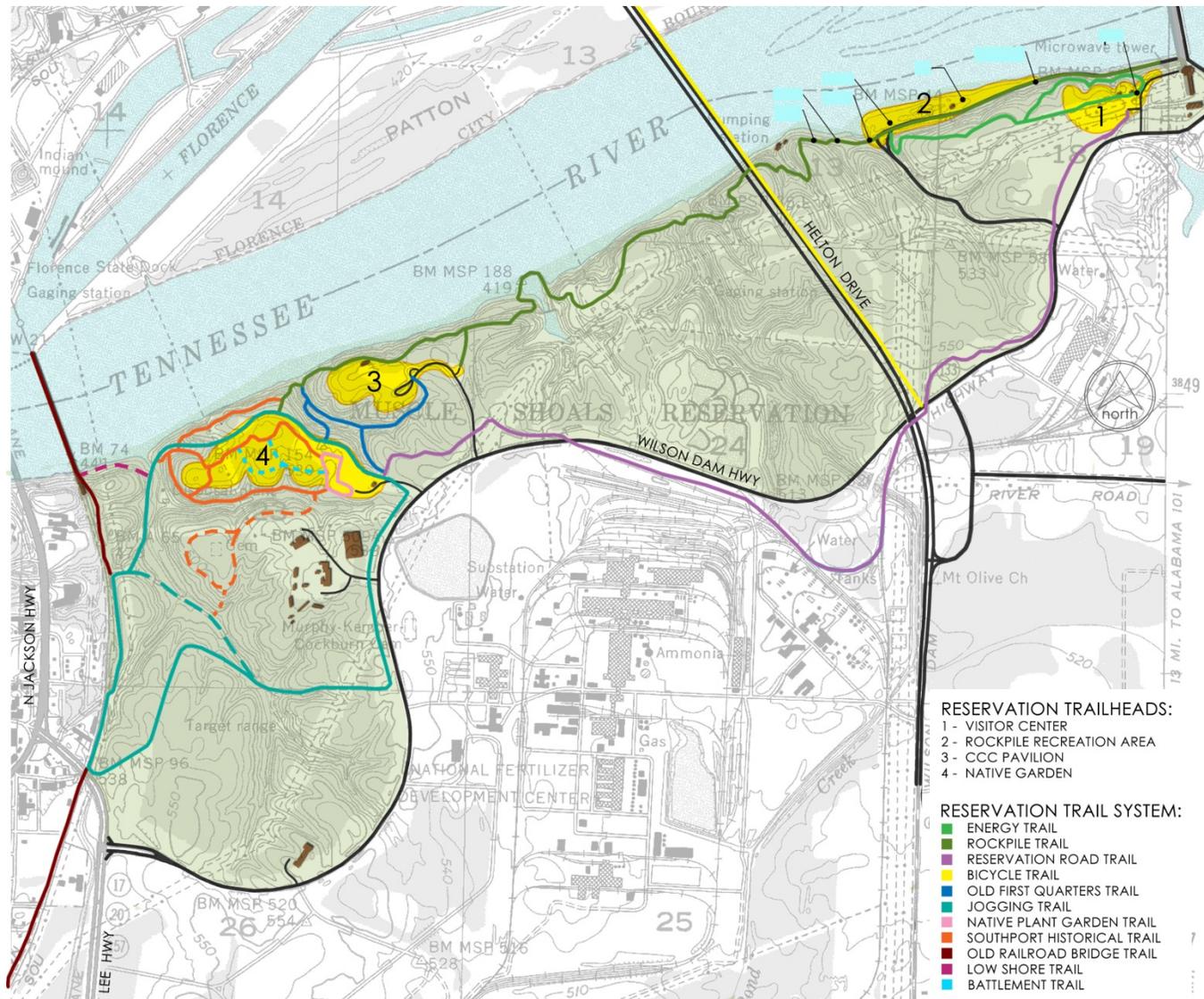


Figure 1 Proposed Improvements Location Map

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## **Alternatives**

Preliminary internal scoping by TVA has determined that from the standpoint of the National Environmental Policy Act (NEPA), there are two alternatives available to TVA: the No Action Alternative and the Proposed Action Alternative.

### **No Action Alternative**

TVA would not proceed with the improvements to the CCC Pavilion area, construction of a pavilion at the Rockpile Recreation area, or improvements to the native plant garden on the MSR, north of Reservation Road. These areas would continue to be used by the public, but would not offer optimal recreational opportunities. Environmental conditions would remain the same within the project area.

### **Proposed Action Alternative**

TVA proposes to complete improvements to the Muscle Shoals Outdoor Education and Recreation Area at three main trail heads: the Rockpile Recreation Area, CCC Pavilion Area, and the Native Plant Garden Area. TVA would revegetate disturbed areas with native non-invasive species and implement best management practices (i.e., silt fences) during construction activities. All ground disturbance associated with the CCC Pavilion improvements would be confined to the plow zone. TVA is proposing the following improvements for each main trail head area:

#### 1) Native Plant Garden Area Improvements (Attachment 1):

- Return some mown areas to native grass and wildflower meadows to increase native habitat and reduce stormwater runoff and maintenance.
- Install circular landscaping of formal native plant garden to demonstrate possible landscaping opportunities with native vegetation.
- Remove large hackberry trees to improve planting success of the native species.
- Establish a Native American domesticates garden within the existing native plant garden.
- Construction of a 30-foot by 30-foot pavilion adjacent to the native plant garden.

#### 2) CCC Pavilion Area Improvements (Attachment 2):

- Installation of a 6-inch reinforced grass paving system surrounding the existing CCC Pavilion to allow for handicap access.
- Repair existing stone steps from trail to CCC Pavilion. The preferred repair methodology would be to locate the original steps and replace to the original location. If the original stones cannot be located, a sandstone step would be used in its place.
- Installation of native stone patio around the existing picnic area. The native stone would consist of sandstone and would complement the stone used for the CCC Pavilion.
- Construction of a 6-foot wide accessible crushed-brick walk from the parking lot to the CCC Pavilion that also connects to the picnic area.
- Construction of a natural play area and sitting area with benches.
- Removal of existing chain link fence and replacement with black vinyl coated chain link fence or a wooden split-rail fence.
- Construction of a new bathroom facility next to the circular parking lot. The new structure would connect to existing water, sewer and electric lines.

3) Rockpile Recreation Area Improvements (Attachment 3):

- Construction of a 30-foot by 30-foot pavilion adjacent to the existing play area. The pavilion would have steel roofing, steel frame construction and would be open on all sides with a 28-inch natural stone base around each corner column.

**Affected Environment and Anticipated Impacts**

**Site Description**

The proposed project is located within the 1,031-acre Muscle Shoals Outdoor Education and Recreation Area (MSR Recreation Complex) on TVA's MSR in Colbert County, Alabama. The Complex is bordered on the north by the Tennessee River, the south and west by Reservation Road (Wilson Dam Highway), and the east by Ashe Boulevard. The proposed project area is located within the MSR Recreation Complex and consists of the CCC Pavilion area, Rockpile Recreation area, and the native plant garden. The proposed action would disturb a total of 1.11 acres within the three trailhead areas. Pond Creek and three unnamed tributaries to the Tennessee River are located within the MSR recreation Complex, but none are located within the project area. The project area has minimal to moderate slopes with steep slopes along the Tennessee River (Rockpile Recreation Area).

No prime or unique farmland or wetlands are located within the project area. No streams listed on the Nationwide Rivers Inventory or any Wild and Scenic Rivers are located within the project area. Two unique aquatic habitat areas (Wilson Dam tail water restricted mussel harvest area and Tennessee River/Wilson Dam non-essential experimental population area) are located within 3 miles of the project area. However, the proposed action would have no effect on the aquatic environment and, therefore, would have no impact on these aquatic habitat areas. The proposed improvements would increase the MSR Recreation Complex's aesthetic quality.

In 2014, TVA completed two Categorical Exclusion Checklists (Attachment 4) within the project area, which provide affected environment information about the project area. Utilizing past reviews and information about the project area, TVA has determined that the proposed action, would have no impact on air quality, natural areas, prime farmland, water quality, aquatic life, aquatic threatened and endangered species, wetlands, socioeconomics and environmental justice, transportation, Nationwide Rivers Inventory streams or Wild and Scenic Rivers. Therefore, potential effects to these resources are not described further in this EA.

Resources that could potentially be affected by the proposed action or that needed additional study included recreation, terrestrial ecology, threatened and endangered terrestrial species, floodplains, and historical and archaeological resources.

Under the No Action Alternative, TVA would not proceed with the proposed improvements and the recreational areas would remain unchanged and would continue to be used by the public. The potential benefits to recreational opportunities would not occur. No impacts to cultural and historical resources, terrestrial ecology, terrestrial threatened and endangered species, and floodplains would occur under the No Action Alternative. Potential impacts from the implementation of the Proposed Action Alternative are discussed in detail below for each resource.

## Recreation

The MSR Recreation Complex is a significant outdoor recreation resource that attracts visitors from within as well as outside the northwest Alabama region. The area supports a wide range of activities including walking, hiking, biking, nature observation, picnicking, boating, and bank fishing. The Rockpile Recreation Area, CCC Pavilion Area, and the Native Plant Garden Area are three of the key developed areas within the Complex. Other recreation areas within approximately 1 mile of the project area include McFarland Park, located on the north bank of the Tennessee River below Wilson Dam, Veteran's Park, and Steenson Hollow Marina located on Wilson Reservoir.

Under the Proposed Action Alternative, recreation opportunities would be enhanced at the Rockpile, CCC pavilion, and Native Plant Garden areas and would further TVA efforts to create a high quality outdoor education and recreation area. Proposed work and construction activities could have some minor temporary impacts on public access and recreational use of these areas, but any such impacts would be minor. Due to the nature of the proposed work and the distance between the project and other recreation areas in the vicinity, no impacts to other recreation areas are expected.

## Historical and Archaeological Resources

In 1933, the year TVA was created, the Wilson Dam was turned over to the agency, becoming its first hydroelectric facility. TVA constructed a variety of facilities around Wilson Dam, including two CCC camps, a nursery, and facilities related to power production. The nursery and the CCC camps were part of TVA's conservation efforts. Some of the CCC constructions are still extant on the MSR, including the overlook and the pavilion, trails and other landscape improvements.

Historic and cultural resources, including archaeological resources, are protected under various federal laws, including: the Archaeological Resources Protection Act, the Native American Graves Protection and Repatriation Act, and the National Historic Preservation Act (NHPA). Section 106 of the NHPA requires federal agencies to consult with the respective State Historic Preservation Officer (SHPO) when proposed federal actions could affect these resources.

TVA has determined that the area of potential effects (APE) is the footprint of all proposed ground disturbance activities. Two Phase I archaeological surveys in this area were previously conducted by the University of Alabama's Office of Archaeological Research (Shaw 1993) and TRC (Pietak et al., 2002). Multiple historic properties were identified on the MSR to the north of reservation road including the CCC trail system and facilities, Civil War earthworks and prehistoric archaeological sites.

The proposed actions are located within these previously surveyed areas. All but one of the proposed activities are located outside the boundaries of any historic or prehistoric site and would have no visual effect to any historic properties. The proposed improvements to the CCC pavilion area are located within the boundaries of site 1CT482. Site 1CT482 is a multicomponent site consisting of a prehistoric and historic artifact scatter and a CCC pavilion. The pavilion is an excellent example of the distinctive architectural style of CCC recreational structures. TVA previously identified the MSR CCC Pavilion eligible for the National Register of Historic Places (NRHP). All ground disturbance would be confined to the plow zone and therefore would not affect archaeological deposits. The design of the CCC Pavilion area improvements and chosen materials were based on recommendations provided to TVA by historic preservation planner Ted Karpynek at Tennessee Valley

Archaeological Research in order to ensure that the visual setting and the CCC Pavilion would not be adversely affected. Based on these conditions, TVA finds that no historic properties would be adversely affected by the proposed actions.

TVA consulted with the Alabama SHPO in letters dated July 2, 2014 and January 21, 2015 regarding TVA's findings of no adverse effect. In a letter dated February 24, 2015, the Alabama SHPO concurred with TVA's finding (Attachment 5). Pursuant to 36 CFR § 800.3(f)(2), TVA also consulted with federally recognized Indian tribes regarding properties that may have religious and cultural significance to their tribe and may be eligible for the NRHP. TVA received responses from The United Keetoowah Band of Cherokee Indians in Oklahoma and the Muscogee (Creek) Nation. Both tribes have no objection to the proposed project.

### **Floodplains**

A floodplain is the relatively level land area along a stream or river that is subjected to periodic flooding. The area subject to a one-percent chance of flooding in any given year is normally called the 100-year floodplain. The proposed improvements cross several floodplain areas associated with the Tennessee River and other streams in Colbert County, Alabama.

As a federal agency, TVA is subject to the requirements of Executive Order (EO) 11988, Floodplain Management. The objective of EO 11988 is "to avoid to the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative." The EO is not intended to prohibit floodplain development in all cases, but rather to create a consistent government policy against such development under most circumstances. The EO requires that agencies avoid the 100-year floodplain unless there is no practicable alternative.

Under the Proposed Action Alternative, the improvements proposed for the CCC Pavilion and the Native Plant Garden areas would be located outside 100-year floodplains, which would be consistent with EO 11988. The pavilion proposed at the Rockpile Recreation area would be located within the 100-year floodplain of the Tennessee River. A pavilion is considered to be a recreational use of the floodplain that is approvable provided flooding impacts are minimized. To minimize adverse impacts on natural and beneficial floodplain values, the following mitigation measures would be implemented for the proposed improvements at the Rockpile Recreation Area:

1. The pavilion in the Rockpile area would remain open to the elements and never be enclosed in the future.
2. Any flood-damageable equipment within the Rockpile pavilion would be elevated above or floodproofed to the TVA Flood Risk Profile elevation 435.8 feet above mean sea level (msl) at this location.
3. For any electrical services permitted, a disconnect would be located at or above the TVA Flood Risk Profile elevation 435.8 feet above msl.

Based upon implementation of the above mitigation measures, the proposed improvements would have only a minor impact on floodplains.

### **Terrestrial Ecology (plants)**

The proposed improvements would occur in the Eastern Highland Rim Level IV ecoregion. Natural vegetation for the region is transitional between the oak-hickory type forest to the west and the mixed mesophytic forests of the Appalachian ecoregions to the east. Much of the original bottomland hardwood forest has been inundated by impoundments. The flatter areas in the east and on both sides of the Tennessee River have deep, well-drained, reddish soils that are farmed intensively (Griffith et al., 2001).

Vegetation throughout the project area is characterized by two main types: herbaceous (40 percent) and forest (60 percent). No forested areas in the proposed project area had structural characteristics indicative of old growth forest (Leverett, 1996).

Herbaceous vegetation is characterized by greater than 75 percent cover of forbs and grasses and less than 25 percent cover of other types of vegetation. Fields and open lawns account for the vast majority herbaceous vegetation in the project area. Most of these areas are dominated by plants indicative of early successional habitats including many non-native species. Common plants in this habitat include annual ragweed, American pokeweed, fescue, Indian grass, Japanese honeysuckle and Queen Anne's lace.

Deciduous forest is the most prevalent vegetation type in the project area. The deciduous forests are comprised of numerous species that can occupy both relatively dry and moist sites. In the proposed project area, common overstory species include American sycamore, black walnut, cherrybark oak, chinkapin oak, sugarberry, sweet gum, and water oak. The understory is comprised mostly of Chinese privet and Carolina laurel cherry with the vine species Japanese honeysuckle and crossvine. Most of the forested habitat is disturbed and does not contain a rich and diverse herbaceous flora.

Executive Order 13112 serves to prevent the introduction of invasive species and provides for their control to minimize the economic, ecological, and human health impacts that those species potentially cause. In this context, invasive species are nonnative species that invade natural areas, displace native species, and degrade ecological communities or ecosystem processes (Miller et al. 2010). No federal-noxious weeds were observed, but multiple species designated by the Alabama Invasive Plant Pest Council as invasive plants were observed in the project area including tree-of-heaven, Chinese privet, Japanese honeysuckle, sacred bamboo, and princess tree.

Adoption of the Proposed Action Alternative would not significantly affect the terrestrial ecology of the region. Less than a quarter of an acre of forest would need to be cleared to accommodate designs for the CCC Pavilion Area, Native Plant Garden Area, and the Rockpile Recreation Area. All forests in the project area have been previously cleared and the plant communities found there are common and well represented throughout the region.

Much of the project area currently has a large component of invasive terrestrial plants, but adoption of the Proposed Action Alternative would not significantly affect the extent or abundance of these species at the local, regional, or state level. Areas revegetated with native species would reduce, to a small extent, infestations of non-native plant species.

### **Terrestrial Ecology (Wildlife)**

In February 2014, TVA conducted a terrestrial habitat survey by systematically walking all the existing trails within the MSR Recreation Complex. Landscape features within and surrounding the project area includes forested habitat, stream crossings, the Tennessee

River/Pickwick Reservoir, rock outcroppings, early successional habitat (i.e., maintained right-of-way corridor, and herbaceous fields) and nearby industrial parcels associated with operations on the MSR.

Many common terrestrial species have been observed in forests on the MSR, including occupation by some species for summer breeding (TVA 2011). The forested areas also provide foraging and roosting habitat for several species of bat. Silver-haired bat, tri-colored bat, hoary bat and evening bat were among species captured on the MSR in 2007. A comprehensive list of terrestrial species is provided in the 2011 Muscle Shoals Reservation Redevelopment environmental impact statement (TVA 2011).

Aquatic habitat, primarily in the form of streams, occurs in the vicinity of the project area. In addition, Rockpile Recreation Area is adjacent to Pickwick Reservoir (Tennessee River). Belted kingfisher, Louisiana waterthrush, and worm-eating warbler are among birds associated with riparian areas and that have been observed on the MSR. Great blue heron and double-crested cormorant have been observed nesting on nearby reservoir islands, and numerous overwintering ducks such as gadwall, blue-winged teal, canvasback and bufflehead have been observed on Pickwick Reservoir. American beaver, muskrat, and river otter are some of the mammals that have been observed in wetland, forested wetland and aquatic communities on the MSR. Red-eared slider, river cooter, eastern garter snake, and midland water snake are reptiles that have been observed at the MSR. Documented amphibians on site include eastern red-spotted newt, spring peeper, dusky salamander, green frog and upland chorus frog (TVA 2011).

Rock outcroppings are scattered throughout the existing trail system. The habitat features provide shelter and nesting for a variety of birds, mammals, reptiles and amphibians. Barn owl, peregrine falcon, spotted skunk, southern zigzag salamander and timber rattlesnake are associates of this habitat type and have been observed on the MSR (TVA 2011).

Early successional habitat occurs in the already open and maintained areas of the Muscle Shoals Outdoor Education and Recreation Area, including parking and picnic areas, and right-of-way corridors. Common inhabitants of this type of early successional habitat include brown-headed cowbird, brown thrasher, common grackle, common yellowthroat, dickcissel, eastern bluebird, eastern kingbird, eastern meadowlark, field sparrow, grasshopper sparrow, house finch and prairie warbler. Coyote, bobcat, eastern cottontail, raccoon, red fox, hispid cotton rat and groundhog are mammals typical of fields and cultivated land. Reptiles including black kingsnake, black racer, five-lined skink and copperhead snake also are known to occur in this habitat type. All of these species have been observed at MSR (TVA 2011).

Developed areas and areas otherwise previously disturbed by human activity are home to a large number of common species. American robin, barred owl, Carolina chickadee, blue jay, European starling, house sparrow, mourning dove, northern cardinal, northern mockingbird, black vulture and turkey vulture are birds commonly found along rights-of-way, road edges and public spaces. Mammals found in this community type include eastern gray squirrel, nine-banded armadillo, northern raccoon and Virginia opossum. Road-side ditches provide potential habitat for amphibians including American toad, upland chorus frog and spring peeper. Reptiles potentially present include black rat snake, gray rat snake and mole kingsnake. All of these species have been observed on the MSR (TVA 2011).

Review of TVA's Regional Natural Heritage Database in December 2014 indicated documented presence of four caves within three miles of the project area. The closest cave record appeared to be mapped directly below the CCC pavilion, in the bluff adjacent to the reservoir. A field survey, by boat, along the bluff line adjacent to Pickwick Reservoir and below Wilson Dam was conducted on December 18, 2014, to determine whether any caves were located in this area. Several rock shelters and rock crevices were noted, but none were determined to be caves (i.e., a minimum of 50 feet deep and humanly accessible). The next closest recorded cave is located approximately 0.2 miles to the west of the project area. No other unique or important terrestrial habitats were identified within the project area.

Any direct impacts to wildlife under the Proposed Action Alternative would be localized to the site of disturbance and may include: 1) collapse of underground tunnels used by small mammals (e.g., voles, shrews, mice) associated with digging, grading, or building construction; 2) flushing of animals to adjacent sites due to human presence and/or noise; and 3) influx in wildlife presence following conversion of mown areas to native habitat as a result of an increase in habitat suitability (e.g., change in vegetative structure leading to better nesting opportunity, change in insect community leading to better foraging opportunity). Impacts to wildlife associated with numbers 1 and 2 above are anticipated to be temporary in nature, such that any wildlife that is displaced by increased levels of disturbance during construction actions would return to the project area upon completion of actions. Impacts associated with number 3 would be beneficial to wildlife. No long-term impacts to local populations of wildlife are expected to occur as a result of proposed actions.

All of the documented caves within 3 miles of the project areas are far enough away such that any impacts to these resources are not expected to occur as a result of proposed actions.

### **Threatened and Endangered Species**

The Endangered Species Act (ESA) requires federal agencies to conserve endangered and threatened species, and to determine the effects of proposed actions on endangered and threatened species and Designated Critical Habitat. Endangered species are those determined to be in danger of extinction through all or a significant portion of their range. Threatened species are those determined to likely become endangered within the foreseeable future. Section 7 of the ESA requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) when proposed actions may affect endangered or threatened species or Designated Critical Habitat.

#### Plant species

A December 2014 review of TVA's Regional Natural Heritage Database indicated that no federally listed and three state-listed plant species have been previously reported within a five-mile vicinity of the project area (Table 1). Two state-listed species have been reported on the MSR and two federally listed plants are known from Colbert County, Alabama, where work would occur. The state-listed species Dutchman's breeches does occur at the base of the rock bluff on the southern boundary of the Rockpile Recreation Area. Hundreds of individuals occur at this location. The occurrence is located between the road and the bluff and is outside of the area where major disturbance would occur. No suitable habitat for leafy prairie-clover and lyre-leaf bladderpod were observed and no Designated Critical Habitat for plant species occurs in the project area.

**Table 1 All plant species of conservation concern previously reported from within 5 miles of the Project Area project area and federally listed plants known from Colbert County, Alabama.<sup>1</sup>**

Common Name	Scientific Name	Federal Status <sup>2</sup>	State Status <sup>2</sup> (Rank <sup>3</sup> )
Yellowwood	<i>Cladrastis kentukea</i>		SLNS (S3)
Leafy Prairie-clover <sup>4</sup>	<i>Dalea foliosa</i>	END	SLNS (S1)
Dutchman's breeches <sup>5</sup>	<i>Dicentra cucullaria</i>		SLNS (S2)
False Rue-anemone	<i>Enemion biternatum</i>		SLNS (S2)
Lyre-leaf Bladderpod <sup>4</sup>	<i>Lesquerella lyrata</i>	THR	SLNS (S1)

<sup>1</sup> Source: TVA Natural Heritage Database, queried on 12/02/2014.

<sup>2</sup> Status Codes: END = Endangered; SLNS = State Listed, no status assigned; THR = Threatened

<sup>3</sup> Rank Codes: S1 = Extremely rare and critically imperiled in the state with 5 or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extirpation; S2 = Very rare and imperiled within the state, 6 to 20 occurrences; S3 = Rare or uncommon with 21 to 100 occurrences.

<sup>4</sup> Federal-listed or candidate species occurring within the county where work would occur, but not within 5 miles of the project area

<sup>5</sup> State-listed species located within the project area.

Adoption of the Proposed Action Alternative would not affect federally listed plant species or Designated Critical Habitat because neither occurs in the project area. Dutchman's breeches occurs on the periphery of areas that would be actively disturbed by adoption of the Proposed Action Alternative; therefore there is some potential to impact the species during project-related work. To reduce potential impacts to the species, TVA biologists would clearly identify areas in the field where the species occurs and the project manager would notify work crews of the presence of the species on site. No grading or other soil disturbance would occur in areas containing Dutchman's breeches. Hand removal of woody species and other non-native plants would be performed next to the occurrence to enhance viewing of the Dutchman's breeches population and other wildflowers and to improve the overall aesthetics on the site. Removal of this competing vegetation may positively affect Dutchman's breeches by increasing the relative availability of light and nutrients for that species.

### Animal Species

A December 2014 review of TVA's Regional Natural Heritage Database indicated that two state-listed, one federally protected, one federally listed species, and one species tracked by the Alabama Natural Heritage Program occur within three-miles of the project area. Two additional federally listed species have been documented, one in Colbert County, Alabama, where the project area is located, and the other in adjacent Lauderdale County, Alabama, located on the north side of the Tennessee River. The USFWS has determined that northern long-eared bat (proposed in October 2013 for listing as federally endangered under the ESA) has the potential to occur in northern Alabama (USFWS 2013). Thus, impacts to this species will be evaluated for this project (Table 2).

**Table 2 Federally listed terrestrial animal species reported from Colbert and Lauderdale Counties, Alabama, and other species of conservation concern documented within three miles of the Project Area<sup>1</sup>**

Common Name	Scientific Name	Federal Status <sup>2</sup>	State Status <sup>2</sup> (Rank <sup>3</sup> )
<b>Birds</b>			
Bald eagle	<i>Haliaeetus leucocephalus</i>	DM	PROT(S3)
Osprey	<i>Pandion haliaetus</i>	--	PROT (S5)
Red-cockaded woodpecker	<i>Picoides borealis</i>	LE	PROT(S2)
Warbling vireo	<i>Vireo gilvus</i>	--	TRKD (S1)
<b>Mammals</b>			
Gray bat	<i>Myotis grisescens</i>	LE	PROT(S2)
Northern long-eared bat <sup>4</sup>	<i>Myotis septentrionalis</i>	PE	TRKD(S2)
Indiana bat	<i>Myotis sodalis</i>	LE	PROT(S2)
<b>Reptiles</b>			
Alligator snapping turtle	<i>Macroclemys temminckii</i>	--	PROT(S3)

<sup>1</sup> Source: TVA Regional Natural Heritage Database, extracted 12/09/2014.

<sup>2</sup> Status Codes: DM = Delisted, recovered, and being monitored; LE = Listed Endangered; PE = Proposed Endangered; PROT = Protected; TRKD = Tracked by the Alabama Natural Heritage Program.

<sup>3</sup> State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S5 = Secure

<sup>4</sup> Federally proposed endangered species that has been determined to have the potential to exist in Colbert County, though the range of this species has not yet been defined at the county-level by USFWS.

Bald eagles are protected under the Bald and Golden Eagle Protection Act of 1940 (USFWS 1999). They are associated with large mature trees capable of supporting their massive nests. These nests are usually found near larger waterways where the eagles forage. The nearest documented bald eagle nest is located approximately 0.9 mile east of the Rockpile Recreation Area, on the north side of Pickwick Reservoir. This nest would not be impacted by the proposed actions (USFWS 2007). No bald eagle nests are known within the project area and none were identified during a February 2014 site visit.

Red-cockaded woodpecker (RCW) is a federally endangered bird species that forages and nests in large old pines located in mature pine forest with open canopy, low densities of hardwood or pine midstory, few to no overstory hardwoods, and abundant native bunchgrass and forb groundcovers. Nest cavities are excavated completely within inactive heartwood, so that the cavity interior remains free from resin that can entrap the birds (USFWS 2003). Any remaining fragments of this habitat are critical to the recovery of this species. Suitable habitat for RCW does not exist within the project area and the occurrence record of this species within Colbert County is historical.

Ospreys are protected by the state of Alabama. Suitable habitat consists of lakes, rivers, and freshwater and saltwater marshes that support good populations of fish, which is the primary food source. Adjacent forested areas provide nesting and perching sites. Nest sites include the top/crown of dead trees, power poles, channel markers, and other suitable manmade structures that will support their large nests. Ospreys are migratory but may winter and breed in the same areas, where good stable habitat abounds (Claybrook 2014). An osprey nest has been documented on the north side of Pickwick Reservoir, along the shoreline, approximately 1.8 miles northwest of the western edge of the Native Garden Trailhead site. No nests were identified within the project sites during February 2014 field surveys.

The gray bat is a federally endangered species that roosts in caves throughout the year, migrating between summer and winter caves and regularly moving among caves within the same season. This species emerges from roost sites at dusk to forage for insects along waterways (Tuttle 1976). Three gray bat records exist on the MSR, the closest of which is approximately 0.3 mile from the western edge of the Native Garden Trailhead. These three records are from 2007 mist-net surveys over a stream corridor and in rights-of-way. Project activities would not impact foraging habitat over streams or other bodies of water. The nearest record of gray bats roosting within a cave is greater than 3 miles from the project site. No known summer or winter roost sites for this species would be impacted by proposed actions.

Indiana bats hibernate in caves during winter and inhabit forested areas around these caves for swarming (mating) in the fall and staging in the spring, prior to migration to summer habitat. During summer, Indiana bats roost under exfoliating bark, and within cracks and crevices of trees, typically located in mature forests with an open understory and a nearby source of water (Pruitt and TeWinkel 2007, Kurta et al. 2002). Indiana bats are known to change roost trees frequently throughout the season, yet still maintain site fidelity, returning to the same summer roosting areas in subsequent years (Dickenson 2001). Foraging occurs along riparian areas and along the tops of trees such as along a forested edge or tree line. Suitable roosting and foraging habitat for Indiana bat is present within the area (USFWS 2014a). Proposed actions would include removal of approximately 60 hackberry trees within the Native Garden area. A site visit conducted December 12, 2014, determined that all of the trees slated for removal were living and that none of these living trees exhibited characteristics suitable for summer roosting by Indiana bat. Summer mist net and acoustic surveys were conducted in 2007 at several sites on the MSR, including two locations within the recreation and trail network. No Indiana bats were captured. There is record of four caves within three miles of the project area. None of these caves are known to be inhabited by bats. No additional caves were observed during the December 2014 field review. The closest documented occurrence of Indiana bat is approximately 21 miles east of the project area in Lauderdale County, and is identified within the database as an extirpated record.

Northern long-eared bat predominantly overwinters in large hibernacula, such as caves and abandoned mines, with high humidity and no air flow. During the fall, and occasionally in spring, this species utilizes entrances of caves and surrounding forested areas for swarming (mating). In the summer, northern long-eared bats roost singly or in colonies beneath exfoliating bark or in crevices of both live and dead trees. They switch roosts approximately every two days and have a high site fidelity to summer roosting areas and winter hibernacula. Roost selection by northern long-eared bat is similar to Indiana bat; however, it is thought that northern long-eared bats are more opportunistic in roost site selection. This species also is known to roost in abandoned buildings and under bridges, though primary summer roosting sites appear to be trees. Northern long-eared bats emerge at dusk to forage below the canopy of mature forests on hillsides and roads, and occasionally over forest clearings and along riparian areas (USFWS 2012, 2014b). Foraging habitat exists within and in the vicinity of the proposed project area in forest stands and over streams and suitable summer roosting habitat exists within forested sections of the project area. Actions would include removal of approximately 60 hackberry trees within the Native Garden Trailhead site. A site visit conducted on December 12, 2014, determined that all of the trees slated for removal were living and that none of these living trees exhibited characteristics suitable for summer roosting by northern long-eared bat. No northern long-eared bats were captured during 2007 summer mist net surveys.

conducted on the MSR and no bats have been documented in any of the four recorded caves located within three miles of the project sites.

Alligator snapping turtle is protected by the state of Alabama. This highly aquatic species is restricted to drainages, floodplains, swamps, and oxbow lakes associated with large rivers, only emerging from water for nesting and basking. The species does not inhabit isolated wetlands and ponds (Buhlmann, Tuberville and Gibbons 2008). Occurrence of alligator snapping turtle has been documented in the Tennessee River/Pickwick Reservoir, in a barge canal approach to the Wilson Dam Lock, located northwest of the project sites. Suitable habitat for this species does not occur within the project area.

Under the Proposed Action Alternative, TVA would continue to improve the trail/recreation system on the MSR. No osprey or bald eagle nests were documented within the project footprint. The closest known occurrence of nests for both species are far enough away from the project area (both are physically separated from the project vicinity by Pickwick Reservoir and forest cover) such that disturbance to these nests as a result of the proposed actions is not expected. Therefore, the proposed actions would not impact either species. Suitable habitat within the project area is lacking for red-cockaded woodpecker and alligator snapping turtle. Thus, no impacts to these species would occur as a result of proposed actions.

Suitable foraging and travel habitat for gray bat is present within and adjacent to the project area in the form of forest corridors and streams. Proposed actions would not involve any work within the water; therefore, no impacts to hydrology or water quality are expected to occur. Proposed actions would not prevent or limit ability by gray bat to use travel pathways. Impacts to gray bats as a result of proposed actions are not expected to occur.

Suitable winter habitat for Indiana bat and northern long-eared bat is lacking within the project area. Foraging opportunities along forest pathways, fence rows and other corridors would still be available for both species, both within the project area and adjacent landscape. With the exception of approximately 60 live hackberry trees identified for removal within the Native Garden Trailhead site, no trees would be removed as part of proposed actions. These hackberry trees do not provide suitable habitat for summer roosting by either species.

Further, the project area does not occur within 10 miles of a known Indiana bat hibernaculum, nor within 5 miles of a documented maternity capture site (i.e., pregnant or lactating female Indiana bat or juvenile Indiana bat), nor within 2.5 miles of a documented maternity roost tree or non-maternity capture site (i.e., non-reproductive adult Indiana bat) (USFWS 2012). Proposed actions would not result in impacts to Indiana bat.

Northern long-eared bat was proposed for listing as federally endangered, with a decision scheduled for April 2015. In the interim, federal action agencies are required to make determinations with respect to whether proposed actions would result in jeopardy to the species based on guidance provided by the USFWS on January 6, 2014. Proposed actions would not jeopardize the continued existence of northern long-eared bat.

### **Long Term and Cumulative Impacts**

There would be long-term beneficial cumulative recreation impacts associated with the proposed action. Project-related effects to wildlife and plant resources would be negligible when compared to the total amount of forest land occurring in the region.

### **Mitigation Measures**

The below mitigation measures were identified to minimize and reduce potentially adverse impacts from the implementation of the Proposed Action Alternative.

- To reduce potential impacts to the Dutchman's breeches, TVA biologists would clearly identify areas in the field where the species occurs and the project manager would notify work crews of the presence of the species on site. No grading or other soil disturbance would occur in areas containing Dutchman's breeches. Hand removal of woody species and other non-native plants would be performed next to the occurrence to enhance viewing of the Dutchman's breeches population and other wildflowers and to improve the overall aesthetics on the site.
- To minimize adverse impacts on natural and beneficial floodplain values, the following mitigation measures would be implemented at the Rockpile Recreation Area:
  1. The pavilion in the Rockpile area would remain open to the elements and never be enclosed in the future.
  2. Any flood-damageable equipment within the Rockpile pavilion would be elevated above or floodproofed to the TVA Flood Risk Profile elevation 435.8 feet above msl at this location.
  3. For any electrical services permitted, a disconnect would be located at or above the TVA Flood Risk Profile elevation 435.8 feet above msl.

### **Preferred Alternative**

TVA's preferred alternative is the Proposed Action Alternative. Under this alternative, TVA would implement the above-described improvements to the Rockpile Recreation Area, CCC Pavilion Area, and the Native Plant Garden Area.

### **TVA Preparers**

Adam J. Dattilo, Botanist, Biological Resources, Terrestrial Ecology and Threatened and Endangered Species

Michaelyn S. Harle, PhD; Archaeologist, Cultural Resources, National Historic Preservation Act Section 106 Compliance

Holly G. LeGrand, Biologist, Biological Resources, Terrestrial Resources

Robert A. Marker, Recreation Specialist, Recreation

Carrie C. Mays PE, CFM; Civil Engineer, Floodplains

Loretta A. McNamee, Contract NEPA Specialist, NEPA Compliance and Document Preparation

Heather L. Montgomery, Natural Resources & Realty Property Services, Project Manager

### **Agencies and Others Consulted**

In preparing this environmental assessment, TVA consulted the Alabama Historical Commission and federally recognized tribes.

## **References**

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## **Attachments**

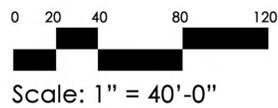
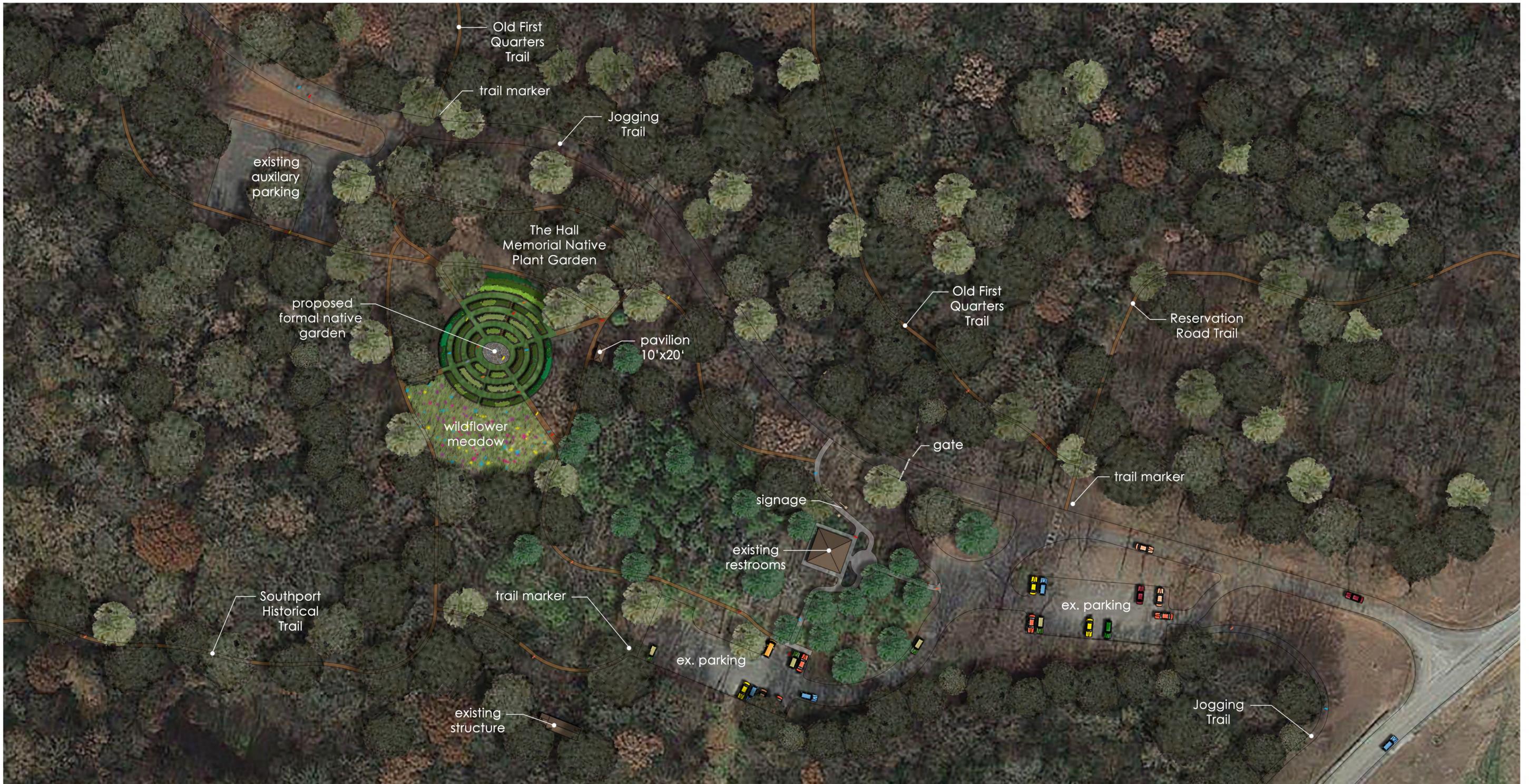
Attachment 1 – Native Plant Garden Area Improvements Conceptual Plan

Attachment 2 – Civilian Conservation Corps Pavilion Area Improvements Conceptual Plan

Attachment 3 – Rockpile Recreation Area Improvements Conceptual Plan

Attachment 4 – Categorical Exclusion Checklists 30616 and 30396

Attachment 5 – Alabama State Historic Preservation Officer Correspondence



# Muscle Shoals Reservation Native Plant Garden Area - Conceptual Site Plan

MacknallyLandDesign



September 24, 2014

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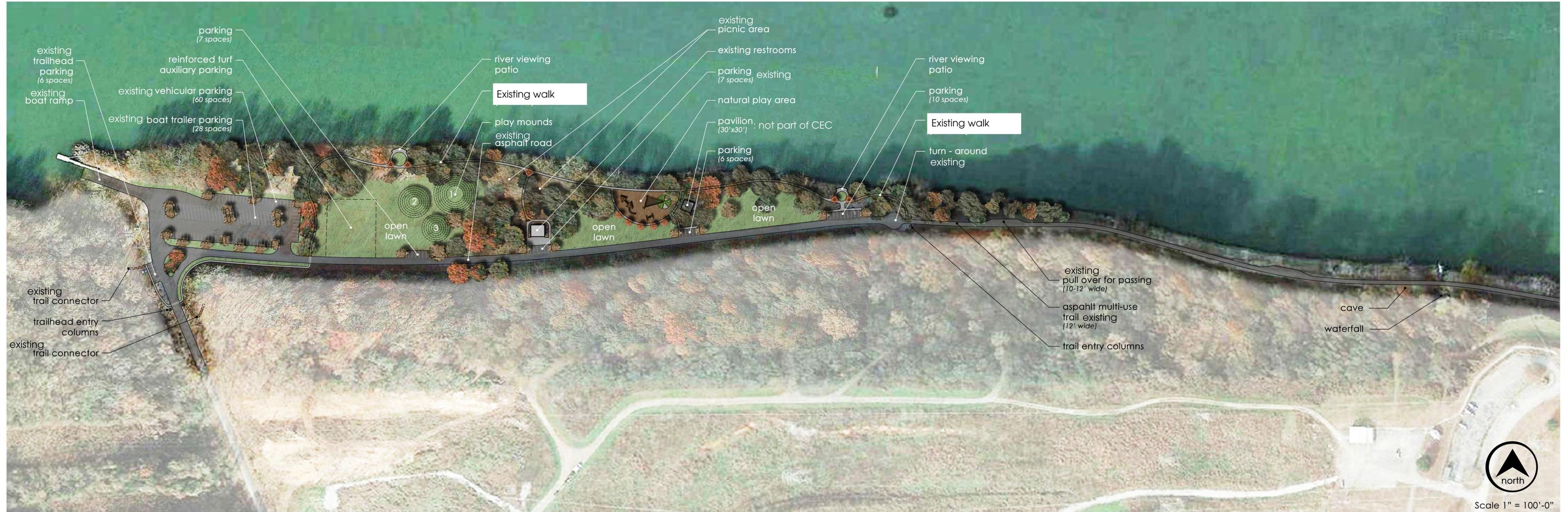
# Muscle Shoals Reservation CCC Pavilion Area - Conceptual Site Plan

MacknallyLandDesign



September 19, 2014

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**PLAY MOUNDS:**

- MOUND #1
  - 10' TALL
  - 3:1 SLOPE
  - 120' WIDE BASE
- MOUND #2
  - 8' TALL
  - 3:1 SLOPE
  - 90' WIDE BASE
- MOUND #3
  - 6' TALL
  - 3:1 SLOPE
  - 80' WIDE BASE

**CAVE / WATERFALL AREAS:**

- PROVIDE 8' X 10' STONE PAVED AREA FOR EACH.
- INCORPORATE 2 BENCHES FOR EACH AREA

**EXISTING RESTROOMS:**

- PAINT BUILDING EXTERIOR SMOKE GRAY AND ADD A 28" HEIGHT NATURAL STONE WATER TABLE AT BASE OF BUILDING TO MATCH PLAY AREA PAVILION.

# Muscle Shoals Reservation

## Rockpile Recreation Area - Conceptual Site Plan

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## Categorical Exclusion Checklist for Proposed TVA Actions

Categorical Exclusion Number Claimed 1	Organization ID Number	Tracking Number (NEPA Administration Use Only) 30616
Form Preparer Heather L Montgomery	Project Initiator/Manager Heather L Montgomery	Business Unit P&NR - Reservoir Property & Resource Mgmt
Project Title Muscle Shoals Reservation Trail Network		Hydrologic Unit Code
Description of Proposed Action (Include Anticipated Dates of Implementation) <input checked="" type="checkbox"/> Continued on Page 3 (if more than one line) For Proposed Action See Attachments and References		
Initiating TVA Facility or Office		TVA Business Units Involved in Project
Location (City, County, State) Colbert, AL, Muscle Shoals/Wilson Dam Reservation. North of Reservation Road		

Parts 1 through 4 verify that there are no extraordinary circumstances associated with this action:

### Part 1. Project Characteristics

Is there evidence that the proposed action...	No	Yes	Information Source for Insignificance
1. Is major in scope?	X		Montgomery, Heather L. 08/11/2014
2. Is part of a larger project proposal involving other TVA actions or other federal agencies?	X		Montgomery, Heather L. 08/11/2014
* 3. Involves non-routine mitigation to avoid adverse impacts?	X		Montgomery, Heather L. 08/11/2014
4. Is opposed by another federal, state, or local government agency?	X		Montgomery, Heather L. 08/11/2014
* 5. Has environmental effects which are controversial?	X		Montgomery, Heather L. 08/11/2014
* 6. Is one of many actions that will affect the same resources?	X		Montgomery, Heather L. 08/11/2014
7. Involves more than minor amount of land?	X		Montgomery, Heather L. 08/11/2014

\*If "yes" is marked for any of the above boxes, consult with NEPA Administration on the suitability of this project for a categorical exclusion.

### Part 2. Natural and Cultural Features Affected

Would the proposed action...	No	Yes	Per-mit	Commitment	Information Source for Insignificance
1. Potentially affect endangered, threatened, or special status species?		X	No	Yes	For comments see attachments
2. Potentially affect historic structures, historic sites, Native American religious or cultural properties, or archaeological sites?	X		No	No	For comments see attachments
3. Potentially take prime or unique farmland out of production?	X		No	No	Montgomery, Heather L. 08/11/2014
4. Potentially affect Wild and Scenic Rivers or their tributaries?	X		No	No	Montgomery, Heather L. 08/11/2014
5. Potentially affect a stream on the Nationwide Rivers Inventory?	X		No	No	Montgomery, Heather L. 08/11/2014
6. Potentially affect wetlands, water flow, or stream channels?	X		No	No	For comments see attachments
7. Potentially affect the 100-year floodplain?		X	No	No	For comments see attachments
8. Potentially affect ecologically critical areas, federal, state, or local park lands, national or state forests, wilderness areas, scenic areas, wildlife management areas, recreational areas, greenways, or trails?		X	No	No	For comments see attachments
9. Contribute to the spread of exotic or invasive species?		X	No	No	For comments see attachments
10. Potentially affect migratory bird populations?	X		No	No	For comments see attachments
11. Involve water withdrawal of a magnitude that may affect aquatic life or involve interbasin transfer of water?	X		No	No	Montgomery, Heather L. 08/11/2014
12. Potentially affect surface water?	X		No	No	Montgomery, Heather L. 08/11/2014
13. Potentially affect drinking water supply?	X		No	No	Montgomery, Heather L. 08/11/2014
14. Potentially affect groundwater?	X		No	No	Montgomery, Heather L. 08/11/2014
15. Potentially affect unique or important terrestrial habitat?	X		No	No	For comments see attachments
16. Potentially affect unique or important aquatic habitat?	X		No	No	For comments see attachments

**Part 3. Potential Pollutant Generation**

Would the proposed action potentially (including accidental or unplanned)...	No	Yes	Per-mit	Commitment	Information Source for Insignificance
1.Release air pollutants?	X		No	No	Montgomery, Heather L. 08/11/2014
2.Generate water pollutants?	X		No	No	Montgomery, Heather L. 08/11/2014
3.Generate wastewater streams?	X		No	No	Montgomery, Heather L. 08/11/2014
4.Cause soil erosion?	X		No	No	Montgomery, Heather L. 08/11/2014
5.Discharge dredged or fill materials?	X		No	No	Montgomery, Heather L. 08/11/2014
6.Generate large amounts of solid waste or waste not ordinarily generated?	X		No	No	Montgomery, Heather L. 08/11/2014
7.Generate or release hazardous waste (RCRA)?	X		No	No	Montgomery, Heather L. 08/11/2014
8.Generate or release universal or special waste, or used oil?	X		No	No	Montgomery, Heather L. 08/11/2014
9.Generate or release toxic substances (CERCLA, TSCA)?	X		No	No	Montgomery, Heather L. 08/11/2014
10.Involve materials such as PCBs, solvents, asbestos, sandblasting material, mercury, lead, or paints?	X		No	No	Montgomery, Heather L. 08/11/2014
11.Involve disturbance of pre-existing contamination?	X		No	No	Montgomery, Heather L. 08/11/2014
12.Generate noise levels with off-site impacts?	X		No	No	Montgomery, Heather L. 08/11/2014
13.Generate odor with off-site impacts?	X		No	No	Montgomery, Heather L. 08/11/2014
14.Produce light which causes disturbance?	X		No	No	Montgomery, Heather L. 08/11/2014
15.Release of radioactive materials?	X		No	No	Montgomery, Heather L. 08/11/2014
16.Involve underground or above-ground storage tanks or bulk storage?	X		No	No	Montgomery, Heather L. 08/11/2014
17.Involve materials that require special handling?	X		No	No	Montgomery, Heather L. 08/11/2014

**Part 4. Social and Economic Effects**

Would the proposed action...	No	Yes	Commitment	Information Source for Insignificance
1.Potentially cause public health effects?	X		No	Montgomery, Heather L. 08/11/2014
2.Increase the potential for accidents affecting the public?	X		No	Montgomery, Heather L. 08/11/2014
3.Cause the displacement or relocation of businesses, residences, cemeteries, or farms?	X		No	Montgomery, Heather L. 08/11/2014
4.Contrast with existing land use, or potentially affect resources described as unique or significant in a federal, state, or local plan?	X		No	Montgomery, Heather L. 08/11/2014
5.Disproportionately affect minority or low-income populations?	X		No	Montgomery, Heather L. 08/11/2014
6.Involve genetically engineered organisms or materials?	X		No	Montgomery, Heather L. 08/11/2014
7.Produce visual contrast or visual discord?	X		No	Montgomery, Heather L. 08/11/2014
8.Potentially interfere with recreational or educational uses?	X		No	Montgomery, Heather L. 08/11/2014
9.Potentially interfere with river or other navigation?	X		No	Montgomery, Heather L. 08/11/2014
10.Potentially generate highway or railroad traffic problems?	X		No	Montgomery, Heather L. 08/11/2014

**Part 5. Other Environmental Compliance/Reporting Issues**

Would the proposed action...	No	Yes	Commitment	Information Source for Insignificance
1.Release or otherwise use substances on the Toxic Release Inventory list?	X		No	Montgomery, Heather L. 08/11/2014
2.Involve a structure taller than 200 feet above ground level?	X		No	Montgomery, Heather L. 08/11/2014
3.Involve site-specific chemical traffic control?	X		No	Montgomery, Heather L. 08/11/2014
4.Require a site-specific emergency notification process?	X		No	Montgomery, Heather L. 08/11/2014
5.Cause a modification to equipment with an environmental permit?	X		No	Montgomery, Heather L. 08/11/2014
6.Potentially impact operation of the river system or require special water elevations or flow conditions??	X		No	Montgomery, Heather L. 08/11/2014
7.Involve construction of a new building or renovation of existing building (i.e., major changes to lighting, HVAC, and/or structural elements of building of 2000 sq. ft or more) on which TVA will pay/pays the utilities??	X		No	Montgomery, Heather L. 08/11/2014

Parts 1 through 4: If "yes" is checked, describe in the discussion section following this form why the effect is insignificant. Attach any conditions or commitments which will ensure insignificant impacts. Use of non-routine commitments to avoid significance is an indication that consultation with NEPA Administration is needed.

An  EA or  EIS Will be prepared.

Based upon my review of environmental impacts, the discussion attached, and/or consultations with NEPA Administration, I have determined that the above action does not have a significant impact on the quality of the human environment and that no extraordinary circumstances exist. Therefore, this proposal qualifies for a categorical exclusion under Section 5.2.1 \_\_\_\_\_ of TVA NEPA Procedures.

Project Initiator/Manager Heather L. Montgomery		Date 08/11/2014
TVA Organization OER	E-mail hlmcgee@tva.gov	Telephone

**Site Environmental Compliance Reviewer**

**Final Review/Closure**

Heather L. Montgomery

08/11/14

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

**Other Review Signatures (as required by your organization)**

Amy L. Brown

08/11/2014

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

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Signature

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Signature

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Signature

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Signature

**Attachments/References**

Description of Proposed Action Continued from Page 1

The Environmental Education Program is one of the Public Engagement Programs within the NRP. The primary purpose of the Environmental Education Program is to enhance awareness and appreciation of the natural resources within the Tennessee River Valley. As part of the Environmental Education Program, TVA is utilizing its existing walking/hiking trail network in Muscle Shoals, Alabama, to create a premier outdoor education and self-guided interpretive trail network. A combination of trail improvements, parking improvements, play equipment, interpretative signs and kiosks, mobile applications, and online modules highlighting natural and cultural resources is desired. The result is to provide an enriched self-guided experience for visitors to public lands managed by TVA. The proposed maintenance and improvements are attached to this CEC.

**CEC General Comment Listing**

- |    |   |                          |                |
|----|---|--------------------------|----------------|
| 1. | General Site Improvements<br>By: Heather L. Montgomery<br>Files: 14_0610 MSR Comprehensive Site Improvements.pdf      | 06/10/2014<br>06/10/2014 | 39.29 Bytes    |
| 2. | Rockpile Concept Plan<br>By: Heather L. Montgomery<br>Files: 14_0429 Rockpile Concept Plan_CEC.pdf                    | 06/10/2014<br>06/10/2014 | 1,539.42 Bytes |
| 3. | Sample Native Plant Garden Signage<br>By: Heather L. Montgomery<br>Files: 14_0513 Native Plant Garden Signage_CEC.pdf | 06/10/2014<br>06/10/2014 | 2,015.37 Bytes |
| 4. | Wayfinding Plan<br>By: Heather L. Montgomery<br>Files: 14_0513 Wayfinding Plan_CEC.pdf                                | 06/10/2014<br>06/10/2014 | 1,097.78 Bytes |

5.	Site Improvement Plan A		
	By: Heather L Montgomery	06/10/2014	
	Files: 14_0609 Site Improve Map A_CEC.pdf	06/10/2014	2,271.23 Bytes
6.	Site Improvement Plan B		
	By: Heather L Montgomery	06/10/2014	
	Files: 14_0609 Site Improve Map B_CEC.pdf	06/10/2014	1,497.60 Bytes
7.	Draft Rockpile Implementation Plan: Chapter 1		
	By: Heather L Montgomery	06/10/2014	
	Files: DRAFT_Rockpile_Implementation_06092014_CEC_Chapter1.pdf	06/10/2014	2,729.92 Bytes
8.	Draft Rockpile Implementation Plan: Chapter 2		
	By: Heather L Montgomery	06/10/2014	
	Files: DRAFT_Rockpile_Implementation_06092014_CEC_Chapter2.pdf	06/10/2014	1,020.31 Bytes
9.	Draft Rockpile Implementation Plan: Chapter 3		
	By: Heather L Montgomery	06/10/2014	
	Files: DRAFT_Rockpile_Implementation_06092014_CEC_Chapter3.pdf	06/10/2014	1,007.02 Bytes
10.	Draft Rockpile Implementation Plan: Chapters 4-7		
	By: Heather L Montgomery	06/10/2014	
	Files: DRAFT_Rockpile_Implementation_06092014_CEC_Chapter4thru7.pdf	06/10/2014	717.37 Bytes

CEC Comment Listing

Part 2 Comments

1.	A July 14, 2014 query of the TVA Heritage database indicates that no federal-listed plant species and four state rare plant species are known from within five miles of the proposed project (Table 1). Two federal-listed plants are known from Colbert County, Alabama, where work would occur. No habitat for the federally-list plant species leafy prairie-clover and lyre-leaf bladderpod occurs on the Muscle Shoals Reservation and those species would not be affected by the proposed work. However, Dutchman's breeches occurs in close proximity to where exotic species would be removed and trail maintenance would be conducted. While the removal of Chinese privet may have a beneficial long-term effect on populations of Dutchman's breeches, there is the potential that the species could be adversely affected by the application of herbicide. With the implementation of the stated commitment, the proposed project would not significantly affect state-listed species.		
	By: Adam J Dattilo	07/14/2014	
	Files: 22511_botany_MSTrail-Network_SPPList.docx	07/14/2014	28.92 Bytes
1.	A total of thirty-three federally listed and fifty state listed aquatic species have been found within 10 miles of the proposed actions. Most populations of state and federally listed aquatic species were extirpated after the completion of Wilson and Pickwick Dams. Twelve federally listed and thirty-one state listed species are known from extant populations in the vicinity. Extant populations are known from the main river channel of the Tennessee River channel downstream of the proposed actions. All proposed work is land-based and will have no direct impact on the aquatic environment. Installation and maintenance of standard BMP's will be adequate to prevent significant run-off into surface waters during construction activities. The proposed actions will have no effect on any protected aquatic species.		
	Two federally listed and two state listed terrestrial animal species have been found within 3 miles of the proposed actions. Habitat at the proposed site varies, consisting of mowed lawn, paved parking and roads and forested areas. Habitat for listed terrestrial species is marginal in these areas due to excessive privet ( <i>Ligustrum sinense</i> ) populations. Removal of this species may improve habitat for many terrestrial animals. Species found in the immediate area, however, would not likely use the mixed habitat areas of the proposed sites. Populations of these species will not be adversely impacted. No extant populations of <i>M. sodalis</i> are known from within 10 miles of the proposed actions. Since the proposed actions will not involve any disturbances to area trees or caves, no impacts to <i>M. sodalis</i> or <i>M. grisescens</i> will occur. Vegetation greater than 3" diameter may only be removed between November 15 and March 1.		
	By: Damien J Simbeck	07/28/2014	
	Files: Heritage Review_CEC30616_DJS_072814.pdf	07/28/2014	123.91 Bytes
1.	Please see attached for TZ input		
	By: Elizabeth C Burton	06/24/2014	
	Files: 30616_Part2Que1_TZinput.docx	06/24/2014	18.92 Bytes

2. TVA determined the Area of Potential Effects (APE) to be the area where all work would be performed. A Phase I archaeological survey was previously conducted within the APE by TRC (Pietak 2002) and by OAR (Shaw 1993) . Multiple historic properties were identified in and adjacent to the APE including portions of the CCC trail system. The majority of the proposed maintenance work will take place outside the boundaries of the eligible, contributing, and potentially eligible resources. For proposed work located within the boundaries of these resources, the majority of the proposed activities (e.g., herbicide treatment, bench removal) would require minimal to no ground disturbance and would enhance the interpretative value of these historic features by making the historic sites more visible and restoring planned historic views and vistas. The herbicide treatment within areas of the sites will be hand cleared to minimize ground disturbance and would be conducted in winter so as to only target invasive, exotic species and not impact native species or species historically planted by the CCC. The proposed additional facilities are located outside the footprint and visual line of site of all eligible, contributing, or potentially eligible resources and therefore, would have no direct or visual effect on these historic properties. TVA finds that no historic properties would be adversely affected by the proposed activities and that improving accessibility and safety would enhance the use and interpretative value of these historic properties. In a letter dated July 2, 2014, TVA sought concurrence with the AL SHPO regarding the no adverse effect finding. The AL SHPO failed to respond within 30 days of receipt of a request for review of TVA's findings. TVA also consulted with federally recognized tribes. On one tribe, The Muscogee (Creek) Nation, responded with no objection.  
By: Michaelyn S Harle 08/08/2014
6. No significant impacts are anticipated since only minor amounts of wetlands occur at the site. Actions will not affect water flow or existing condition of the stream channel or stream bank.  
By: Damien J Simbeck 07/28/2014
7. Please see attached.  
By: Carrie C Mays 07/03/2014  
Files: CEC 30616 Muscle Shoals Reservation trail network.docx 07/03/2014 23.55 Bytes
8. Nine Managed Areas (MABR) and two Heritage Sites (SBR) are located in the vicinity. The proposed actions will occur within two of the Managed Area locations (Muscle Shoals Reservation and Old First Quarters Small Wild Area. These actions will improve these sites for public use, wildlife habitat and native species diversity.  
By: Damien J Simbeck 07/28/2014
9. The proposed project would not significantly contribute to the spread of exotic or invasive species because the project area currently contains a sizable proportion of non-native, invasive species. These non-native, invasive species are distributed widely throughout the region and implementation of the proposed project would not change this situation. However, removal of Chinese privet is a part of the proposed work and areas where that species is removed may experience a net increase in native species richness and cover. The project would not contribute to the spread of exotic or invasive species.  
By: Adam J Dattilo 07/14/2014
9. Based on review of the actions and site location information, the proposed project would not contribute to the spread of exotic or invasive terrestrial animal species.  
By: Elizabeth C Burton 06/24/2014
10. There is one recorded heronry within 3.0 miles of the project area. It is across the reservoir and approximately 0.32 miles from the project area. This heronry would not be impacted by the proposed actions. No other aggregations of birds are known from the project area. Activities associated with the proposed project would not impact wading bird colonies or other aggregations of migratory birds.  
By: Elizabeth C Burton 06/24/2014
10. There are two osprey and one bald eagle nests known from the vicinity. The nearest nest is more than 660 feet from the proposed actions; therefore the actions will have no effect on these nests.  
By: Damien J Simbeck 07/28/2014
15. There are four recorded caves within three miles of the project area. Two of these are within the project area and are referred to as "cave falls" in the DRAFT\_Rockpile\_Implementation\_06092014\_CEC\_Chapter2.pdf. There is also a larger waterfall within the project area. Vegetation around these cave falls would be maintained (vegetation smaller than 3 inches dbh would be removed) and sitting areas placed nearby. The actions would not impact the caves themselves nor impede the flow of water flowing from them. No other habitats unique or important to terrestrial animals are known from within three miles of the proposed project. Activities associated with the proposed project would not impact unique or important terrestrial habitats.  
By: Elizabeth C Burton 06/24/2014
15. No uncommon plant communities are known from the vicinity and no rare plant communities occur in the project area. Implementation of the proposed project would not potentially affect unique or important terrestrial habitat.  
By: Adam J Dattilo 07/14/2014
16. Two unique aquatic habitat areas (Wilson Dam tail water restricted mussel harvest area and Tennessee River/Wilson Dam non-essential experimental population area) are located within 3 miles of the proposed actions. The proposed actions will have no effect on the aquatic environment and will, therefore, have no impact on these sites.  
By: Damien J Simbeck 07/28/2014

CEC Commitment Listing

Part 2 Commitments

1. User Defined: Facilities and Maintenance personnel should coordinate with Damien Simbeck (256-386-2543) at least two weeks in advance of conducting exotic plant eradication or trail construction covered under this environmental review. Based on his knowledge of rare plants, Mr. Simbeck will perform field surveys of the proposed work area as needed to determine if the proposed work would affect Dutchman's breeches or other listed plant species. If the project would likely impact a state-listed plant, Mr. Simbeck will offer guidance to reduce impacts to the extent practicable.  
By: Adam J Dattilo 07/14/2014

# Categorical Exclusion Checklist for Proposed TVA Actions

Categorical Exclusion Number Claimed 1	Organization ID Number	Tracking Number (NEPA Administration Use Only) 30396
Form Preparer Amy L Brown	Project Initiator/Manager Heather L Montgomery	Business Unit P&NR - Reservoir Land Use & Permitting
Project Title Muscle Shoals Reservation - Trail Network Vegetation Management		Hydrologic Unit Code
Description of Proposed Action (Include Anticipated Dates of Implementation) <input checked="" type="checkbox"/> Continued on Page 3 (if more than one line) For Proposed Action See Attachments and References		
Initiating TVA Facility or Office		TVA Business Units Involved in Project For Business Unit Listing See Attachments and References
Location (City, County, State) For Project Location see Attachments and References		

Parts 1 through 4 verify that there are no extraordinary circumstances associated with this action:

## Part 1. Project Characteristics

Is there evidence that the proposed action...	No	Yes	Information Source for Insignificance
1. Is major in scope?	X		Brown, Amy L. 04/30/2014
2. Is part of a larger project proposal involving other TVA actions or other federal agencies?	X		Brown, Amy L. 04/30/2014
* 3. Involves non-routine mitigation to avoid adverse impacts?	X		Brown, Amy L. 04/30/2014
4. Is opposed by another federal, state, or local government agency?	X		Brown, Amy L. 04/30/2014
* 5. Has environmental effects which are controversial?	X		Brown, Amy L. 04/30/2014
* 6. Is one of many actions that will affect the same resources?	X		Brown, Amy L. 04/30/2014
7. Involves more than minor amount of land?		X	For comments see attachments

\*If "yes" is marked for any of the above boxes, consult with NEPA Administration on the suitability of this project for a categorical exclusion.

## Part 2. Natural and Cultural Features Affected

Would the proposed action...	No	Yes	Per-mit	Commitment	Information Source for Insignificance
1. Potentially affect endangered, threatened, or special status species?	X		No	No	For comments see attachments
2. Potentially affect historic structures, historic sites, Native American religious or cultural properties, or archaeological sites?	X		No	No	For comments see attachments
3. Potentially take prime or unique farmland out of production?	X		No	No	Brown, Amy L. 04/30/2014
4. Potentially affect Wild and Scenic Rivers or their tributaries?	X		No	No	For comments see attachments
5. Potentially affect a stream on the Nationwide Rivers Inventory?	X		No	No	For comments see attachments
6. Potentially affect wetlands, water flow, or stream channels?	X		No	No	Brown, Amy L. 04/30/2014
7. Potentially affect the 100-year floodplain?	X		No	No	Brown, Amy L. 04/30/2014
8. Potentially affect ecologically critical areas, federal, state, or local park lands, national or state forests, wilderness areas, scenic areas, wildlife management areas, recreational areas, greenways, or trails?		X	No	No	For comments see attachments
9. Contribute to the spread of exotic or invasive species?	X		No	No	For comments see attachments
10. Potentially affect migratory bird populations?	X		No	No	Brown, Amy L. 04/30/2014
11. Involve water withdrawal of a magnitude that may affect aquatic life or involve interbasin transfer of water?	X		No	No	Brown, Amy L. 04/30/2014
12. Potentially affect surface water?	X		No	No	For comments see attachments
13. Potentially affect drinking water supply?	X		No	No	Brown, Amy L. 04/30/2014
14. Potentially affect groundwater?	X		No	No	Brown, Amy L. 04/30/2014
15. Potentially affect unique or important terrestrial habitat?	X		No	No	For comments see attachments
16. Potentially affect unique or important aquatic habitat?	X		No	No	Brown, Amy L. 04/30/2014

**Part 3. Potential Pollutant Generation**

Would the proposed action potentially (including accidental or unplanned)...	No	Yes	Per-mit	Commitment	Information Source for Insignificance
1.Release air pollutants?		X	No	No	For comments see attachments
2.Generate water pollutants?	X		No	No	Brown, Amy L. 04/30/2014
3.Generate wastewater streams?	X		No	No	Brown, Amy L. 04/30/2014
4.Cause soil erosion?	X		No	No	Brown, Amy L. 04/30/2014
5.Discharge dredged or fill materials?	X		No	No	Brown, Amy L. 04/30/2014
6.Generate large amounts of solid waste or waste not ordinarily generated?	X		No	No	Brown, Amy L. 04/30/2014
7.Generate or release hazardous waste (RCRA)?	X		No	No	Brown, Amy L. 04/30/2014
8.Generate or release universal or special waste, or used oil?	X		No	No	Brown, Amy L. 04/30/2014
9.Generate or release toxic substances (CERCLA, TSCA)?	X		No	No	Brown, Amy L. 04/30/2014
10.Involve materials such as PCBs, solvents, asbestos, sandblasting material, mercury, lead, or paints?	X		No	No	Brown, Amy L. 04/30/2014
11.Involve disturbance of pre-existing contamination?	X		No	No	Brown, Amy L. 04/30/2014
12.Generate noise levels with off-site impacts?	X		No	No	Brown, Amy L. 04/30/2014
13.Generate odor with off-site impacts?	X		No	No	Brown, Amy L. 04/30/2014
14.Produce light which causes disturbance?	X		No	No	Brown, Amy L. 04/30/2014
15.Release of radioactive materials?	X		No	No	Brown, Amy L. 04/30/2014
16.Involve underground or above-ground storage tanks or bulk storage?	X		No	No	Brown, Amy L. 04/30/2014
17.Involve materials that require special handling?	X		No	No	Brown, Amy L. 04/30/2014

**Part 4. Social and Economic Effects**

Would the proposed action...	No	Yes	Commitment	Information Source for Insignificance
1.Potentially cause public health effects?	X		No	Brown, Amy L. 04/30/2014
2.Increase the potential for accidents affecting the public?	X		No	Brown, Amy L. 04/30/2014
3.Cause the displacement or relocation of businesses, residences, cemeteries, or farms?	X		No	Brown, Amy L. 04/30/2014
4.Contrast with existing land use, or potentially affect resources described as unique or significant in a federal, state, or local plan?	X		No	Brown, Amy L. 04/30/2014
5.Disproportionately affect minority or low-income populations?	X		No	Brown, Amy L. 04/30/2014
6.Involve genetically engineered organisms or materials?	X		No	Brown, Amy L. 04/30/2014
7.Produce visual contrast or visual discord?	X		No	Brown, Amy L. 04/30/2014
8.Potentially interfere with recreational or educational uses?	X		No	For comments see attachments
9.Potentially interfere with river or other navigation?	X		No	Brown, Amy L. 04/30/2014
10.Potentially generate highway or railroad traffic problems?	X		No	Brown, Amy L. 04/30/2014

**Part 5. Other Environmental Compliance/Reporting Issues**

Would the proposed action...	No	Yes	Commitment	Information Source for Insignificance
1.Release or otherwise use substances on the Toxic Release Inventory list?	X		No	Brown, Amy L. 04/30/2014
2.Involve a structure taller than 200 feet above ground level?	X		No	Brown, Amy L. 04/30/2014
3.Involve site-specific chemical traffic control?	X		No	Brown, Amy L. 04/30/2014
4.Require a site-specific emergency notification process?	X		No	Brown, Amy L. 04/30/2014
5.Cause a modification to equipment with an environmental permit?	X		No	Brown, Amy L. 04/30/2014
6.Potentially impact operation of the river system or require special water elevations or flow conditions??	X		No	Brown, Amy L. 04/30/2014
7.Involve construction of a new building or renovation of existing building (i.e., major changes to lighting, HVAC, and/or structural elements of building of 2000 sq. ft or more) on which TVA will pay/pays the utilities??	X		No	Brown, Amy L. 04/30/2014

Parts 1 through 4: If "yes" is checked, describe in the discussion section following this form why the effect is insignificant. Attach any conditions or commitments which will ensure insignificant impacts. Use of non-routine commitments to avoid significance is an indication that consultation with NEPA Administration is needed.

An  EA or  EIS Will be prepared.

Based upon my review of environmental impacts, the discussion attached, and/or consultations with NEPA Administration, I have determined that the above action does not have a significant impact on the quality of the human environment and that no extraordinary circumstances exist. Therefore, this proposal qualifies for a categorical exclusion under Section 5.2.1 \_\_\_\_\_ of TVA NEPA Procedures.

Project Initiator/Manager Heather L. Montgomery		Date 05/29/2014
TVA Organization OER	E-mail hlmcgee@tva.gov	Telephone

**Site Environmental Compliance Reviewer**

**Final Review/Closure**

Amy L Brown

05/29/14

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

**Other Review Signatures (as required by your organization)**

Amy L Brown 05/29/2014

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Signature

**Attachments/References**

Description of Proposed Action Continued from Page 1

Visitors to the Muscle Shoals Reservation Trail Network should have a scenic experience of Wilson Dam, Tennessee River, and the contrasting limestone bluffs. Currently, the trails are overtaken with non-native invasive plants, and some primitive trails have been impacted to such an extent resulting in an approximately one-foot wide footpath. Non-native invasive plants and other small vegetation with a diameter of three inches or less would be removed by mechanical means and treated with a herbicide as described in TVA's Natural Resource Plan. The geographic scope includes all TVA Muscle Shoals Reservation property located north of Reservation Road and bounded by the Tennessee River. All sensitive plants located within the Old First Quarters Small Wild Area would be avoided (see attached map). Ground disturbance would be avoided to the extent practicable, and all known cultural resources would be avoided.

Project Location Continued from Page 1

Colbert, AL, The geographic scope includes all TVA Muscle Shoals Reservation property located north of Reservation Road and bounded by the Tennessee River.

TVA Business Units Involved in Project Continued from Page 1

P&NR - Facilities Management, P&NR - Reservoir Land Use & Permitting

CEC General Comment Listing

CEC Comment Listing

Part 1 Comments

- 7. The acreage where the vegetation clearing will be done will involve several hundred acres but no ground disturbance will be done.  
By: Amy L Brown 04/30/2014

Part 2 Comments

- 1. Map of areas to avoid at Old First Quarters where endangered plant species are located.  
By: Amy L Brown 04/30/2014  
Files: Old First Quarters SWA areas to avoid.pdf 04/30/2014 413.74 Bytes

1. The attached map indicates areas where endangered plant species have been identified. Personnel performing ground clearing will be informed to use care in these areas and will be trained/supplied with pictures to identify the endangered plants.  
By: Amy L Brown 04/30/2014
1. A May 8, 2014 query of the TVA Heritage database indicates that no federal-listed plant species and three state rare plant species are known from within five miles of the proposed project (Table 1). One federally-listed plant species is known from Colbert County, Alabama, where the project resides. Habitat for lyrate-leaf bladderpod does not occur in the project area; therefore, the species will not be affected. Two of the state-listed species, Dutchman's breeches (*Dicentra cucullaria*) and yellowwood (*Cladrastis kentukea*) are located in the project area.  
  
Since Chinese privet is the main invasive shrub being treated, privet stands will be cut and treated with a non-foliar herbicide. Cutting and application of the herbicide will be done in three stages: later this spring followed by the fall of this year and spring of the following year (2015). With the treatment to remove Chinese privet, positive impacts to potential rare plants are to be expected. Since any rare plants found will not be spayed with a foliar herbicide, the proposed action would not affect federal or state-listed plant species.  
  
By: David T Nestor 05/12/2014  
Files: Table 1.docx 05/12/2014 14.98 Bytes
2. Areas to be cleared are currently in use for walking trails but have become overgrown. Clearing to remove vegetation should not affect historic structures, historic sites, Native American religious or cultural properties, or archaeological sites.  
By: Amy L Brown 04/30/2014
4. Since no such designated waters occur at or adjacent to the project site, the proposed action is not anticipated to impact Wild and Scenic Rivers or their tributaries.  
By: David T Nestor 05/09/2014
5. Since no such designated waters occur at or adjacent to the project site, the proposed action is not anticipated to impact streams listed on the Nationwide Rivers Inventory.  
By: David T Nestor 05/09/2014
8. Clearing of vegetative undergrowth will have a positive affect on scenic areas, wildlife management areas, recreational areas, and trails on the Muscle Shoals Reservation.  
By: Amy L Brown 04/30/2014
8. Commitment: Prior to the removal of exotic, invasive plant species (consisting mostly of Chinese privet), Heather Hart (865)-632-6362, a senior scientist of Tennessee Valley Authority (TVA), should be notified about activities associated with the proposed project.  
Comments: A review of the TVA Natural Heritage Database indicates there are nine natural areas within 3.0 miles of the proposed project. The proposed project area is within the Old First Quarters TVA Small Wild Area.  
  
Even though the proposed project is within the Old First Quarters TVA Small Wild Area, the proposed project would not negatively impact this area. During removal efforts, the scenic and recreational values associated with the area will temporarily decrease; however, the scenic and recreational impairment will be minimal and short term. Over time, the gradual removal of the invasive species will make the area more accessible to recreational and scenic use. Impacts to the management area will be beneficial in the long term. Since BMPs will be implemented to minimize ground disturbance and to prevent sediment and debris from entering the river, no impacts are anticipated for these areas.  
  
Natural areas that are less than .1 miles of the proposed activities site include the Muscle Shoals National Recreation Trail, Wilson Dam Reservation, and Wilson Dam Tailwater Restricted Mussel Harvest Area. Other Natural Areas between .2 and 3.0 miles include Seven Mile Island State Wildlife Management Area, Wildwood Park, Veterans Park, McFarland Park, and Florence Municipal Park.  
  
As a courtesy, Heather Hart, a TVA biologist, should be notified prior to exotic, invasive plant eradication activities. Since Heather Hart has been consulted with and agrees with the project and proper BMPs will be implemented during the proposed activities, no impacts are anticipated to the natural areas.  
  
By: David T Nestor 05/09/2014
9. Chinese privet is an invasive species that has spread across much of the Muscle Shoals Reservation. Clearing the undergrowth of Chinese privet and other invasive species that have grown into walking trails, along with herbicide application, will help to prevent further spreading.  
By: Amy L Brown 04/30/2014
9. Non-native plant species, especially Chinese privet, are found in great abundance within the project area. Since project activities will result in exotic invasive vegetation removal, impacts would be beneficial to the native flora present. The project would not contribute to the spread of exotic or invasive species.  
By: David T Nestor 05/12/2014
12. Many of the walking trails are beside the Tennessee River. Personnel who apply herbicides should follow the guidance in TVA's Natural Resource Plan.  
By: Amy L Brown 04/30/2014
12. Guidance from TVA's Natural Resource Plan for herbicide application to nonnative invasive species.  
By: Amy L Brown 04/30/2014  
Files: NonnativePlantGuidance\_nrp\_feis\_chapter\_2.pdf 04/30/2014 25.29 Bytes

15. No uncommon plant communities are known from the vicinity of the project area and no rare plant communities occur there. Implementation of the proposed project would not potentially affect unique or important terrestrial habitat.  
By: David T Nestor 05/12/2014

Part 3 Comments

1. Use of gasoline or diesel equipment for vegetation clearing will release minimal amounts of air pollutants that will be of no significance.  
By: Amy L Brown 04/30/2014

Part 4 Comments

8. Vegetation clearing should enhance and improve recreational and educational uses of the Muscle Shoals Reservation walking trails.  
By: Amy L Brown 04/30/2014

CEC Permit Listing

CEC Commitment Listing

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STATE OF ALABAMA  
ALABAMA HISTORICAL COMMISSION  
468 SOUTH PERRY STREET  
MONTGOMERY, ALABAMA 36130-0900

FRANK W. WHITE  
EXECUTIVE DIRECTOR

February 24, 2015

TEL: 334-242-3184  
FAX: 334-240-3477

Clinton E. Jones  
TVA  
400 West Summit Hill Drive  
Knoxville, TN 37902

Re: AHC 14-1210  
Proposal to develop a self-guided interpretative area at Muscle Shoals Reservation  
Colbert County

Dear Mr. Jones:

Upon review of the above referenced project, we have determined that project activities will have no effect on any cultural resources listed on or eligible for the National Register of Historic Places. Therefore, we concur with the proposed project activities.

However, should artifacts or archaeological features be encountered during project activities, work shall cease and our office shall be consulted immediately. Artifacts are objects made, used or modified by humans. They include but are not excluded to arrowheads, broken pieces of pottery or glass, stone implements, metal fasteners or tools, etc. Archaeological features are stains in the soil that indicate disturbance by human activity. Some examples are post holes, building foundations, trash pits and even human burials. **This stipulation shall be placed on the construction plans to insure contractors are aware of it.**

We appreciate your commitment to helping us preserve Alabama's historic archaeological and architectural resources. Should you have any questions, please contact Amanda McBride at 334.230.2692 or [Amanda.McBride@preserveala.org](mailto:Amanda.McBride@preserveala.org). Have the AHC tracking number referenced above available and include it with any future correspondence.

Sincerely,

Lee Anne Wofford  
Deputy State Historic Preservation Officer

LAW/AMH/amh

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