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SAULPAW MILL DAM REMOVAL
FINAL ENVIRONMENTAL ASSESSMENT
McMinn County, Tennessee

Prepared by:
TENNESSEE VALLEY AUTHORITY
Knoxville, Tennessee

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To request further information, contact:
Erica McLamb
NEPA Compliance
Tennessee Valley Authority
Chattanooga, Tennessee
Phone: 423-751-8022
E-mail: esmclamb@tva.gov

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Symbols, Acronyms, and Abbreviations

Acronym	Description
AADT	Average annual daily traffic
AASHTO	American Association of State Highway and Transportation Officials
ACS	American Community Survey
AQCR	Air Quality Control Region
ARAP	Aquatic Resource Alteration Permit
BMP	Best management practice
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CEQ	Council On Environmental Quality
CO	Carbon monoxide
CR	County Road
CWA	Clean Water Act
dB	Decibel
dBA	A-weighted decibel
EA	Environmental assessment
ECHO	Enforcement and Compliance History Online
EO	Executive Order
EJ	Environmental justice
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FPPA	Farmland Protection Policy Act
FRA	Federal Railroad Administration
FSLG	Flood Storage Loss Guideline
FSZ	Flood storage zone
FTA	Federal Transit Administration
GHG	Greenhouse gas
HDR	HDR Engineering, Inc.
HUC	Hydrologic Unit Code
HUD	U.S. Department of Housing and Urban Development
in/sec	Inches per second
L_{dn}	Day-night sound level
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NLCD	National Landcover Dataset
NO_2	Nitrogen dioxide
NPDES	National Pollutant and Discharge Elimination System
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyls
PM	Particulate matter
PPV	Peak particle velocity
RCRA	Resource Conservation and Recovery Act
RFFA	Reasonably foreseeable future action
RM	River mile
SAIPE	Small Area Income and Poverty Estimates
SHPO	State Historic Preservation Office
SO_2	Sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasures Plan

SR	State Route
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
THC	Tennessee Historic Commission
TNC	The Nature Conservancy
TSCA	Toxic Substances Control Act
TVA	Tennessee Valley Authority
TVAR	Tennessee Valley Archaeological Research
TWRA	Tennessee Wildlife Resource Agency
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USDOI	US Department of The Interior
USEPA	U.S. Environmental Protection Agency
USFWS	US Fish and Wildlife Service
VOC	Volatile organic compounds

CHAPTER 1 – PURPOSE AND NEED FOR ACTION

1.1 Background

The Project Site (also referred to as "Site") is the Tennessee Valley Authority's (TVA) Saulpaw Mill Dam in Calhoun, McMinn County, Tennessee. Saulpaw Mill Dam is a run-of-river low head dam and is located within TVA property at confluence of Oostanaula Creek and the Hiwassee River at Hiwassee River Mile (HiRM) 19.8, on the right descending bank of Chickamauga Reservoir (Figure 1-1). Constructed in 1869, the dam is eligible for listing on the National Register of Historic Places (NRHP) and is associated with an old flour mill that was removed by TVA in 1940 for construction of Chickamauga Reservoir. The dam is a masonry gravity structure constructed from large-cut limestone blocks quarried from rock bluffs nearby. The length of the dam is approximately 60 feet, and the total height is approximately 16 feet. The dam ties into retaining walls at both abutments, which are constructed of similar quarried block masonry as the dam. Adjacent to the right (west) abutment is a 9-foot wide steel liftgate, separated from the remainder of the dam by a 4.5-foot wide quarried block pier extending about 28 feet upstream from the dam. A CSX railroad crossing, supported by an in-stream pier, and the County Road 950 (Hiwassee Road) crossing of Oostanaula Creek are located approximately 30 feet and 80 feet upstream (north) of the dam, respectively (Figure 1-2).

The Saulpaw Mill Dam is no longer being used for its intended purpose (operation of the flour mill) and serves no other practical purpose. The Saulpaw Mill Dam presents a potential hazard to recreational users at the Site. Although TVA is not aware of any fatalities associated with the Saulpaw Mill Dam, according to the Brigham Young University Department of Civil and Environmental Engineering, more than 440 deaths have occurred as a result of the currents created by small dams since the 1950s (Brigham Young University 2015). Additionally, TVA staff, in collaboration with the U.S. Fish and Wildlife Service (USFWS), The Nature Conservancy (TNC), and Tennessee Wildlife Resources Agency (TWRA), hereafter "Partners", are identifying stream barriers in the Tennessee Valley watershed that impede the movement of fish and other aquatic organisms. Saulpaw Mill Dam was identified as a barrier; therefore, TVA is evaluating the feasibility of removal of the dam.

1.2 Purpose and Need

The purpose of the proposed project is to provide safer conditions for the recreating public and improve aquatic habitat and habitat connectivity for stream fishes. The project is needed because Saulpaw Mill Dam creates potentially hazardous conditions by acting as an uncontrolled spillway capable of producing dangerous recirculating currents, large hydraulic forces, and other potentially hazardous conditions sufficient to trap and drown victims immediately downstream from the continuously flowing water over the crest of the dam. Additionally, the project is needed because Saulpaw Mill Dam is presently acting as a barrier to aquatic life passage upstream.

1.3 Decision to be Made

This environmental assessment (EA) has been prepared to inform TVA decision makers and the public about the environmental consequences of the Proposed Action. TVA must decide whether to take no action and leave Saulpaw Mill Dam in place or to remove Saulpaw Mill Dam.

TVA will use this EA to support the decision-making process and to determine whether an Environmental Impact Statement should be prepared or whether a Finding of No Significant Impact may be issued.

1.4 Related Environmental Reviews and Consultation Requirements

Available environmental documents and materials were reviewed related to this assessment. These include studies performed in support of the Saulpaw Mill Dam Removal Project (Project). The contents of these documents help describe the Project Site and are incorporated by reference as appropriate. Documents reviewed are listed below and, in the references, provided in Section 5.

- NRHP Assessment and Assessment of Effects for the Saulpaw Mill Dam, McMinn County, Tennessee (Karpynec and Weaver 2017). This report details the methods and results of a NRHP evaluation of the Saulpaw Mill Dam and the conclusions of an assessment of potential effects. The report concludes with a recommendation that Saulpaw Mill Dam is eligible for the NRHP under Criterion A for local significance in industry and commerce associated with the mid-to-late nineteenth-century mill complex. The report also recommended TVA consult with the Tennessee Historical Commission (THC) to explore mitigation alternatives for the proposed undertaking to minimize the adverse effect to the resource.
- Saulpaw Mill Dam Removal CSX Railroad Bridge Pier Impact Analysis Report – Condensed (Geosyntec Consultants 2021). This report documents the results of a hydraulic model and scour analyses performed by Geosyntec Consultants for TVA. The report summarizes the results and implications of the modeling and scour analyses performed on proposed dam removal scenarios, including potential immediate and permanent risks to the CSX pier that could occur if the dam were removed without implementation of mitigation measures. This report presents recommendations of pier scour mitigation strategies based on a comparison between existing conditions and proposed conditions in Oostanaula Creek.

The description of the affected environment and the assessment of impacts contained in the documents listed above were used in support of this analysis, and are incorporated, as appropriate, into analyses for each environmental resource in Chapter 3.

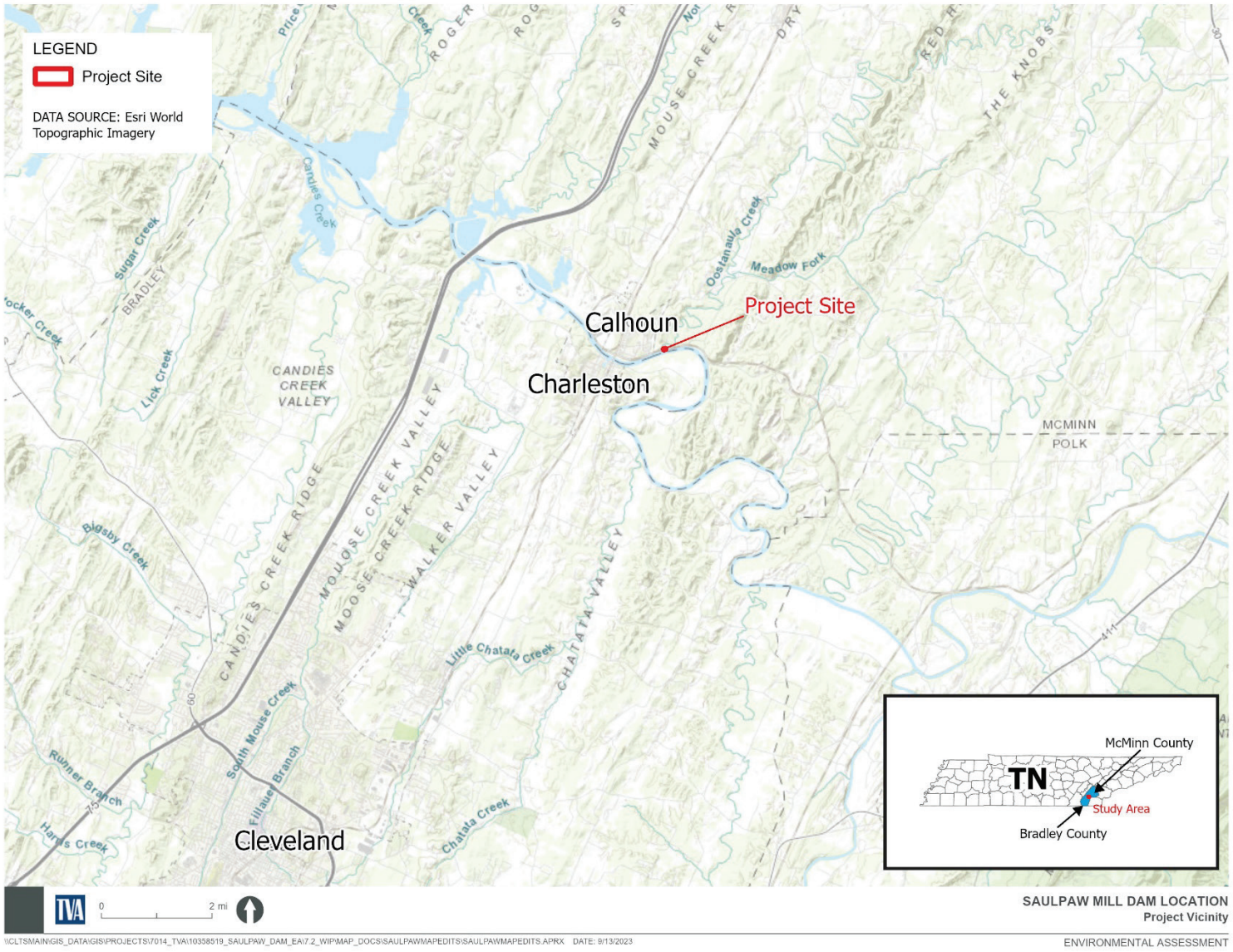

Figure 1-1. Saulpaw Mill Dam Location Map

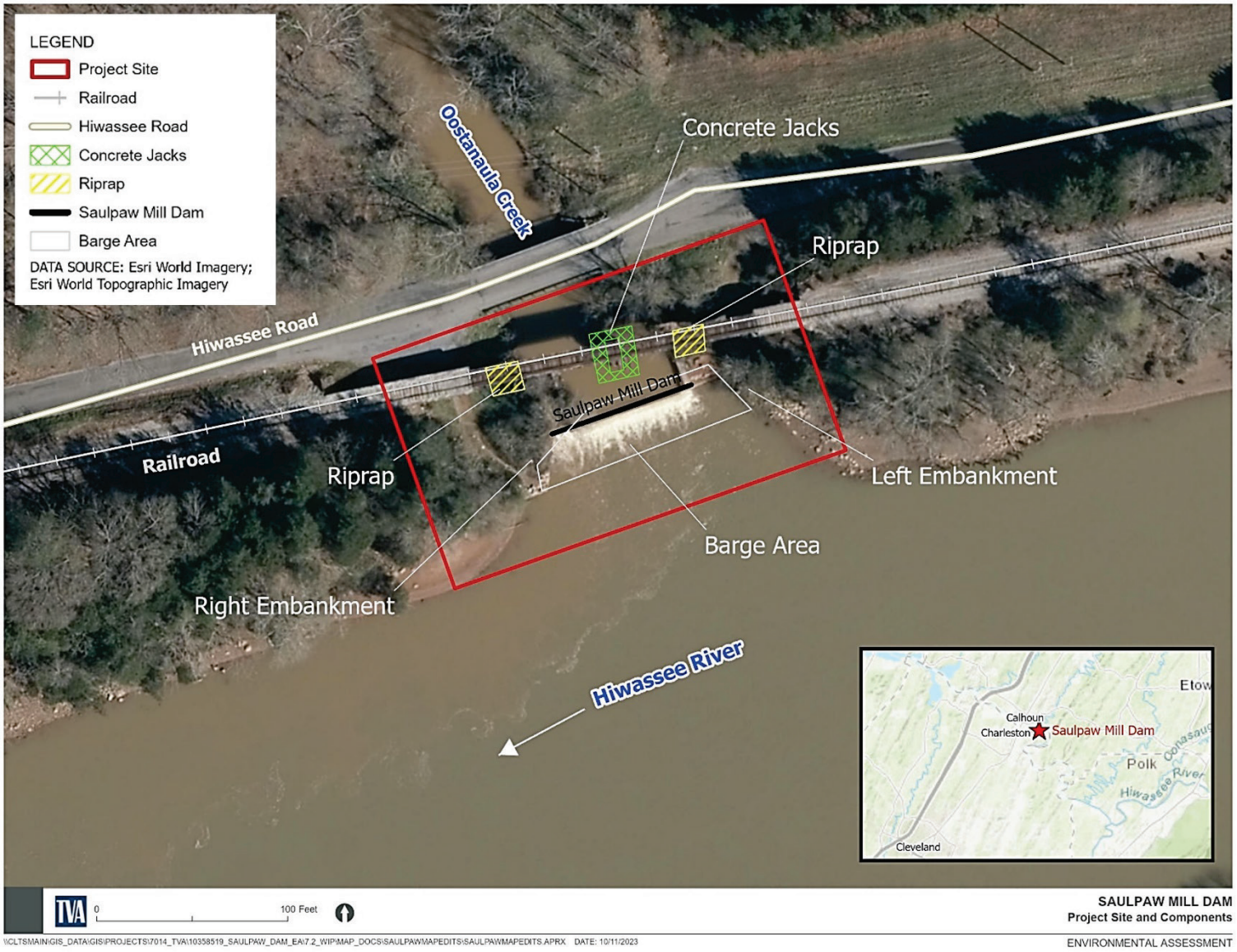

Figure 1-2. Saulpaw Mill Dam Project Site and Components

1.5 Scope of the Environmental Assessment

TVA has prepared this EA to comply with the National Environmental Policy Act (NEPA) and associated implementing regulations. TVA considered the possible environmental effects of the proposed action and determined that potential effects to the environmental resources listed below were relevant to the decision to be made. Thus, potential effects to the following environmental resources are addressed in detail in this EA:

- Land Use
- Soils and Prime Farmland
- Geology and Groundwater
- Surface Water and Water Quality
- Floodplains
- Wetlands
- Vegetation
- Wildlife
- Aquatic Ecology
- Threatened and Endangered Species
- Natural Areas, Parks, and Recreation
- Air Quality
- Greenhouse Gases and Climate Change
- Noise and Vibration
- Transportation
- Cultural Resources
- Visual Resources
- Solid and Hazardous Waste
- Socioeconomics and Environmental Justice
- Safety

1.6 Public and Agency Involvement

A draft of this environmental assessment (EA) was issued for public comment on November 15, 2023. The comment period closed on December 18, 2023. The Draft EA was transmitted to state, federal, and local agencies. It also was posted on TVA's public NEPA website. Notice of availability of the draft and the request for comments was published in newspapers serving the Saulpaw Mill Dam Removal project area. TVA accepted comments through an electronic comment form on the project website, by mail, and by email.

TVA held a second public comment period from February 20 through March 18, 2024. During this comment period, TVA held an in-person open house on March 7 at Calhoun Elementary School to discuss the proposed dam removal. This public comment period and open house were advertised in the same manner as the previous public comment period. About 40 people attended the open house.

TVA received 39 comments, including a petition with 105 signatures, during the first comment period and an additional 16 comments during the second comment period. TVA also received an online petition opposing the dam removal that received over 600 signatures between late November and late March. The issues raised during the two comment periods were similar, with about three-quarters of all commenters opposed to the removal of the dam. The most frequently mentioned reason for opposing removal was the historical significance of the dam. Other reasons for opposing removal included the effects on recreational use of the dam site and on the scenic attractiveness of the dam. About a quarter of the commenters supported removal of the dam, mostly because of the predicted improvement in the size and diversity of the aquatic community in Oostanaula Creek. TVA also received a copy of a resolution passed by the City of Calhoun Commission in December 2023 opposing removal of the dam because of its historical significance, Cherokee heritage, and scenic beauty. TVA has carefully reviewed all comments and the comments and TVA's responses to them are in Appendix A. TVA has also revised parts of this EA in response to the comments.

As a part of the National Historic Preservation Act (NHPA) Section 106 process, TVA Cultural Compliance staff consulted with the Tennessee State Historic Preservation Office (TN SHPO) and all federally recognized Tribes (Tribes) with an interest in McMinn County. The TN SHPO concurred that the Saulpaw Mill Dam was eligible for the National Register of Historic Places (NRHP) and agreed to enter into a Memorandum of Agreement (MOA) with TVA to develop mitigation measures to address the adverse effects to the resource. The Tribes declined to participate in the MOA process.

During the in-person open house, TVA Cultural Compliance staff met with the Charleston-Calhoun-Hiwassee Historical Society (Historical Society) to discuss the Section 106 process. As a result of the meeting, TVA invited the Historical Society to be a consulting party for the development of MOA. TVA Cultural Compliance staff communicated with the Historical Society on acceptable mitigation measures via email and phone calls as well as an in-person meeting at the Calhoun City Hall with Historical Society president Joe Bryan. TVA has also discussed potential recreational development, such as a greenway, with the Calhoun City Manager. These discussions are ongoing and no decisions have been made.

1.7 Necessary Permits or Licenses

The environmental permits to be obtained for the activities related to TVA's action include:

- Coverage under Tennessee General National Pollutant and Discharge Elimination System (NPDES) Permit for discharges of stormwater associated with construction activities
- Coverage under a Division of Solid Waste Management Special Waste Determination Letter authorizing the disposal of special waste at a Tennessee permitted disposal facility
- Coverage under Tennessee Department of Environment and Conservation (TDEC) Aquatic Resource Alteration Permit (ARAP) and Clean Water Act (CWA) Section 401 Certification for temporary and permanent impacts to the Oostanaula Creek and/or Hiwassee River
- Coverage under an U.S. Army Corps of Engineers (USACE) CWA Section 404 Permit for permanent impacts to the Oostanaula Creek and/or Hiwassee River

TVA would be responsible for ensuring necessary permits are obtained and implemented, manifests completed, and hazardous waste disposal (if generated or identified) properly reported.

CHAPTER 2 – ALTERNATIVES

Descriptions of the no action and action alternatives, a brief comparison of their environmental effects, and TVA's preferred alternative are presented in this chapter.

2.1 Description of Alternatives

TVA has determined that there are two potential alternatives: an Action Alternative and a No Action Alternative. These alternatives were evaluated in this EA and are described below.

2.1.1 Alternative A – No Action Alternative

Under the No Action Alternative, TVA would not perform any modification of the Saulpaw Mill Dam and would continue to maintain the dam as needed. This alternative would not eliminate potentially unsafe conditions created by the Saulpaw Mill Dam or remove barriers to aquatic life movement. This alternative would not meet the purpose and need of the proposed action; however, it is included in this evaluation as it represents current conditions against which the action alternative will be compared.

2.1.2 Alternative B – Removal of the Saulpaw Mill Dam

Under Alternative B, TVA would remove Saulpaw Mill Dam. Alternative B would utilize an approximately 0.7-acre area encompassing Saulpaw Mill Dam, the adjacent riverbanks on both sides of the dam, the CSX railroad crossing, and the confluence of Oostanaula Creek and the Hiwassee River (Figure 1-2). The Project Site would be accessed using the adjacent Hiwassee Road for trucks and the Hiwassee River for barges. Dam removal would consist of three phases over two weeks, subject to weather, as described below.

Phase I would consist of establishing temporary equipment staging, material storage, and construction access areas on the Project Site. Materials and equipment would also be staged on the work barge. Oil spill containment booms would be deployed around the work barge and anchored to the abutments to minimize risk from spills and to restrict recreational boat access to the work area. Minor grading and vegetation removal would be performed as required to establish these areas. For the purposes of this EA, it is assumed that construction would require vegetation removal and/or disturbance of the whole Project Site. Sediment and erosion control measures would be installed in accordance with Tennessee Stormwater Best Management Practices (BMPs; TDEC 2012).

To stabilize the streambanks at the CSX railroad abutments, approximately 35 cubic yards (CY) of riprap would be installed along approximately 15 linear feet of the right and left streambanks and 15 feet back towards each railroad abutment (approximately 225 square feet on each bank). The upper portion of the right quarry block abutment of the dam would also be rebuilt as three terraces, reducing the height of the current vertical abutment wall.

To prevent potential head cutting and scour around the CSX railroad pier, approximately 30 CY of stone and 200 concrete jacks (riprap, articulated concrete blocks, or other equivalent protection measures may be utilized) would be installed along approximately 30 linear feet (an area of up to 540 square feet) of creek bed around the railroad pier. Approximately 8 truckloads would be required to bring construction materials on site. A cofferdam may be required for in-water work, dewatering approximately 1,500 square feet (0.03 acres) of Oostanaula Creek. The in-water work may also be performed in the wet using divers and airlift dredging procedures. Airlift dredging utilizes a pipe and short injections of air to create

a vacuum that pulls the water and sediment through the pipe. To install the protection measures, approximately 130 CY of silt would be excavated and may be placed in the stream channel to disperse naturally, placed on the right abutment to be graded to drain and stabilized with vegetation, or disposed offsite at a TVA-approved permitted landfill in accordance with state and Federal solid waste procedures. This equates to 10 truckloads if the material is disposed offsite.

Once the CSX railroad pier and streambanks around the railroad abutment are stabilized, the steel liftgate portion of the dam would be removed. This will lower the water level in the creek upstream of the dam to approximately the same elevation as Chickamauga Reservoir.

Phase 2 would consist of removal of about half the blocks from the pier and main portions of the dam. The blocks would be removed utilizing a crane or excavator located on a work barge and temporarily placed in the adjacent dam abutment area.

Phase 3 would consist of removing the remaining pier and dam blocks to an elevation of approximately 672 feet, 16 feet below the current height of the dam and level with the creek bottom downstream of the dam, utilizing the crane or excavator on a work barge. The existing right and left abutments would be the only above water dam structures remaining after deconstruction. Pier and dam blocks extending below the creek bed would be left in place. Minor silt removal near the confluence of the Hiwassee River, using a crane or excavator a work barge, may be required to access all the blocks to be removed.

Once unloaded from the barge, a sample of blocks would be provided to the City of Calhoun for used for educational purposes alongside the traveling display. The blocks would be temporarily stockpiled on a portion of the Hiwassee Meadowland Park in Calhoun (Figure 2-1). Any blocks that are too large or too damaged to be used by the City would be disposed offsite at a TVA-approved permitted landfill in accordance with state and Federal solid waste procedures. The blocks would be moved by truck from the dam to the stockpile area where they would occupy about 1,000 square feet.

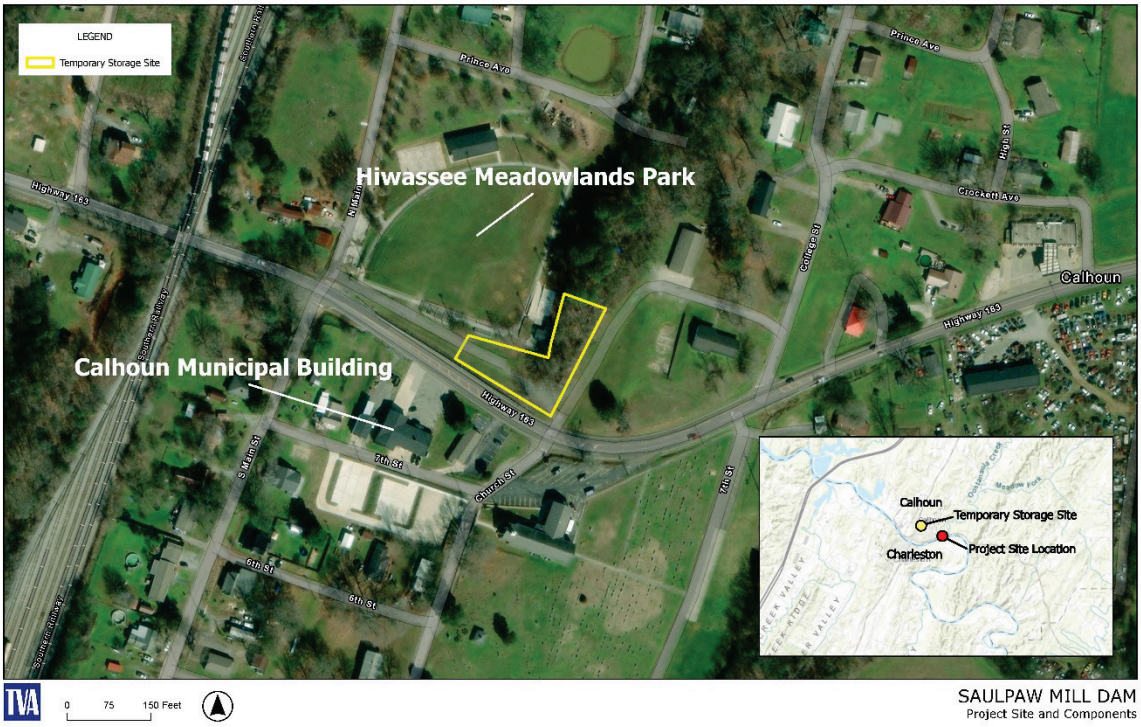

Figure 2-1. Dam Block Temporary Stockpile Area

Based on a sediment survey conducted in May 2022 (TVA 2022a), 83 CY of sediment has accumulated behind the dam. Following removal of the dam and cofferdam, the accumulated sediments would be allowed to naturally disperse.

Following construction, the Project Site would be re-vegetated with a mixture of native and non-invasive species.

2.1.3 Alternatives Considered but Eliminated from Further Discussion

TVA considered partial removal of the dam; however, after discussion with the project Partners it was decided that removing the entire dam would be the best option to allow for full stream connectivity, support free movement of aquatic organisms, and ensure the remains of the dam would not pose a public safety risk.

2.2 Comparison of Alternatives

The potential environmental effects that could result from the No Action Alternative (Alternative A) and Removal of Saulpaw Mill Dam (Alternative B) are evaluated in this EA. Impacts evaluated may be beneficial or adverse and may apply to the full range of natural, aesthetic, historic, cultural, and socioeconomic resources within the Project Site and within the surrounding area. Impact severity is dependent upon their relative magnitude and intensity and resource sensitivity. In this document, four descriptors are used to characterize the level of impacts in a manner that is consistent with TVA's current practice.

In order of degree of impact, the descriptors are as follows:

- No Impact (or “absent”) – Resource not present or, if present, not affected by project alternatives under consideration.
- Minor – Environmental effects are not detectable or are so minor that they would not noticeably alter any important attribute of the resource.
- Moderate – Environmental effects are sufficient to alter noticeably, but not to destabilize, important attributes of the resource.
- Large – Environmental effects are clearly noticeable and are sufficient to destabilize important attributes of the resource.

A comparison of the environmental consequences associated with each alternative is presented in Table 2-1.

Table 2-1. Summary and Comparison of Alternatives by Resource Area

Resource Area	Impacts From No Action - Alternative A	Impacts From Proposed Action - Alternative B
Land Use	No impacts.	Minor permanent impacts. No cumulative impacts.
Soils and Prime Farmland	No impacts.	Minor, temporary impacts to soils due to site preparation (i.e., grading) and minor, permanent impacts due to placement of gravel and/or riprap. No impact to prime farmlands. Minor, temporary cumulative effects during the period of construction if overlapping with RFFAs. No cumulative impacts to prime farmland.
Geology and Groundwater	No impacts.	No impacts to geological or groundwater resources. No cumulative impacts to geological or groundwater resources.
Surface Water and Water Quality	No impacts.	Minor temporary impacts due to in-stream disturbance and sediment passage downstream; large permanent benefit due to restoration of natural hydraulics. Potential minor to moderate, temporary cumulative impacts due to in-stream disturbance and water quality impacts with proximity to RFFAs on Oostanaula Creek or Hiwassee River.
Floodplains	No impacts.	Minor, temporary adverse impact due to staging and construction access areas within the 100-year floodplain. Minor, permanent impacts due to grading and construction within 500- and 100-year floodplains with implementation of proper BMPs and mitigation efforts. Minor, permanent benefit to capacity of 100-year floodplain of Oostanaula Creek and the Hiwassee River. No cumulative impacts.
Wetlands	No impacts.	No impacts. No cumulative impacts.

Resource Area	Impacts From No Action - Alternative A	Impacts From Proposed Action - Alternative B
Vegetation	No impacts.	Minor, temporary impacts due to herbaceous vegetation clearing and minor, permanent impacts due to the removal of woody vegetation. Minor beneficial effect from revegetation with native and non-invasive species across the Project Site. Minor, temporary cumulative impacts if site clearing overlaps with development of nearby RFFAs.
Wildlife	No impacts.	Minor temporary and permanent impacts to common species during construction due to disturbance and/or loss of habitat. Minor, temporary cumulative impacts if Project activities or the site restoration period overlaps with nearby RFFAs.
Aquatic Ecology	Moderate adverse impacts due to the continued accumulation of sediments and the presence of a barrier to aquatic life movement. Minor cumulative impacts with consideration of other aquatic life barriers in the watershed.	Minor, temporary effects due to disturbance of aquatic habitat and impacts to water quality; large beneficial, permanent effects of dam removal and increased access to aquatic habitat in Oostanaula Creek. Minor, temporary cumulative impacts during the period of construction due to proximity to potential RFFAs on Oostanaula Creek and Hiwassee River.
Threatened and Endangered Species	No impacts.	Project may affect but is not likely to adversely affect the gray bat, Indiana bat, and northern long-eared bat due to winter removal of potential summer roosting habitat and construction noise disturbance. Project would not jeopardize the continued existence of tricolored bat. No effects to other state- and federally listed species. No cumulative impacts.
Natural Areas, Parks and Recreation	Minor adverse impact due to the unresolved risk of potentially hazardous conditions at the Saulpaw Mill Dam.	Minor, temporary impacts due to restrictions on recreation during construction. Minor, beneficial effects due to enhanced local sport fishery. No impacts to natural or managed areas. Minor, temporary cumulative impacts due to proximity to potential RFFAs on Oostanaula Creek and Hiwassee River.
Air Quality	No impacts.	Minor, temporary impacts due to fugitive dust and combustion-relation emissions during construction expected to be contained on site. No cumulative impacts due to the limited geographic extent of fugitive dust emissions (primarily remaining on site) and no new operational air emission sources.

Resource Area	Impacts From No Action - Alternative A	Impacts From Proposed Action - Alternative B
Greenhouse Gases (GHG) and Climate Change	No impacts.	Minor, temporary impacts due to the operation of construction equipment/vehicles. No cumulative impacts.
Noise and Vibration	No impacts.	Minor, temporary impacts to the ambient noise environment during construction. No vibration impacts to nearby structures. Minor, temporary cumulative impacts due to noise if construction period overlaps with RFFAs in the area.
Transportation	No impacts.	Minor, temporary impacts to traffic during construction that would be mitigated through traffic controls if necessary. Minor, temporary cumulative impacts if overlapping construction periods with a nearby RFFA.
Cultural Resources	No impacts.	Large, permanent adverse impact due to the removal of the historic dam but mitigated in accordance with NHPA Section 106 requirements and adherence to the mitigation requirements in the MOA. No cumulative impacts.
Visual Resources	No impacts.	Minor, temporary impacts during construction due to equipment onsite. Moderate permanent impact due to the changed appearance of the former dam site. Minor cumulative effects if overlapping during the construction period with a nearby RFFA.
Solid and Hazardous Waste	No impacts.	No impacts during construction due to BMPs and implementation of a Waste Management Plan. Minor impacts from disposal of unusable blocks and other debris in permitted landfill. No cumulative effects.
Socioeconomics and Environmental Justice	Minor adverse impact due to the unresolved risk of potentially hazardous conditions at the Saulpaw Mill Dam.	Permanent beneficial impact to safety and recreation which could benefit local socioeconomic conditions and EJ communities. Minor, temporary beneficial impacts during construction due to workers spending money locally. Negligible temporary adverse impacts due to traffic during construction within areas identified as EJ populations along US 11. Minor, temporary cumulative effects to EJ communities due to increased traffic if overlapping with nearby RFFAs.

Resource Area	Impacts From No Action - Alternative A	Impacts From Proposed Action - Alternative B
Safety	Minor, adverse impact due to the unresolved risk of potentially hazardous conditions at the Saulpaw Mill Dam.	Minor, temporary impacts to public and occupational health and safety from potentially increasing restrictive access areas and increased traffic. Permanent beneficial effects from the improved safety for recreational users and improved fish passage opportunities. Minor, temporary impact to safety due to increased traffic if overlapping during the same time period as nearby RFFAs.

2.3 Summary of Commitments and Proposed Mitigation Measures

TVA would acquire all applicable permits prior to the start of Project construction (see Section 1.6). Therefore, TVA would implement all permit-related mitigation measures and BMPs during Project construction to minimize impacts to the environment. TVA would also implement the following best management practices and mitigation measures to ensure that adverse impacts to environmental resources listed above are avoided, minimized, or mitigated.

2.3.1 Best Management Practices and Routine Measures

2.3.1.1 Soils

- TVA would install BMPs for sediment and erosion control prior to implementation of any land disturbance activities. These controls would remain in place until the site is permanently stabilized. Erosion and sediment controls would be installed or implemented in accordance with the provisions of the Tennessee Erosion & Sediment Control Handbook (TDEC 2012).
- TVA would develop a Stormwater Pollution Prevention Plan that identifies mitigation measures and BMPs that would be implemented during construction to reduce stormwater runoff if greater than one acre of ground disturbance is expected.
- Fugitive air and dust emission from construction activities would be reduced and controlled through the implementation of construction BMPs, including the following:
    - wetting demolition areas, covering waste or debris piles, using covered containers to haul waste and debris as appropriate; and
    - maintaining engines and equipment in good working order to improve fuel efficiency and reduce potential carbon monoxide (CO) emissions from poorly operating engines and equipment.

2.3.1.2 Water Resources

- TVA would comply with the terms of the TDEC General National Pollutant and Discharge Elimination System Permit, TDEC Aquatic Resource Alteration Permit, and for USCOE Clean Water Act Section 404 permit.

2.3.1.3 Waste Management

- TVA would comply with TDEC regulations regarding the proper management of hazardous materials (not expected to be encountered) and disposal of waste materials.

- Any reportable spills and subsequent cleanup related to the Project would be addressed in accordance with the requirements outlined in the Project Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) and Waste Management Plan. Fill materials would be clean and free of contaminants.

2.3.1.4 Transportation/Navigation

- Construction activities would primarily occur during daylight hours. A traffic plan would be established if needed including measures such as posting a flag person during heavy commute periods to manage traffic flow and prioritizing access for local residents to minimize potential adverse impacts to traffic and transportation.
- All work on, over, or adjacent to the CSX right-of-way would be done in accordance with the CSX special provisions found within the CSX public projects manual (CSX 2022).
- Barges/equipment would be lit or have reflective tape for nighttime visibility.
- Flagging protection would be required whenever construction personnel or equipment are within or likely to be within 50 feet of the live track or other track clearances specified by CSX or over tracks.

2.3.1.5 Biological Resources

- TVA would return areas of temporary disturbance within the Project Site to pre-construction conditions and would stabilize these areas with native or non-invasive plant species vegetation upon construction completion.
- Only the minimum quantity of riprap and jacks would be used that would still meet project objectives.

2.3.1.6 Floodplains

- An evacuation plan would be developed for removal of flood-damageable equipment and materials from the floodplain in the event of a flood or high-flow event.
- All excavated or removed material would be spoiled on land outside the 500-year floodplain and above the 500-year flood elevation of the Hiwassee River.

2.3.2 Minimization and Mitigation Measures

2.3.2.1 Threatened and Endangered Species

- Tree removal would occur in winter (November 15 to March 30) when listed bat species are not expected to be on the landscape. Removal of suitable habitat in winter would avoid direct impacts to bat species as bats are roosting in caves at that time. Conservation measures would be implemented, as identified in TVA's 2018 programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with Endangered Species Act (ESA) Section 7(a)(2) and updated in May 2023. The Bat Strategy Project Screening Form is provided in Appendix B.

2.3.2.2 Natural Areas, Parks, and Recreation

- Adjacent recreational areas would be notified of construction commencement and duration.

2.3.2.3 Transportation

- CSX would be notified a minimum of 30 days prior to construction to allow for scheduling of the railroad flagman.

- Oil booms would be deployed around the work barge and anchored to the abutments for spill protection and restriction of recreational boat access.
- TVA would notify the USACE and USCG so that a Notice to Navigation and a Broadcast Notice to Mariners can be issued to the commercial navigation industry.

2.3.2.4 Cultural Resources

- TVA would implement the terms of the MOA developed in consultation with the TN SHPO and the Historical Society. This includes the development of a traveling educational display on the historical significance of the Saulpaw Mill Dam to be given to the Historical Society and the providing a sample of the removed dam blocks to the City of Calhoun to use in education displays.

2.4 The Preferred Alternative

TVA's preferred alternative is Alternative B (Removal of Saulpaw Mill Dam). The No Action Alternative (Alternative A) would not meet the purpose and need for action. Alternative B would meet the purpose and need by returning the currently impounded portion of Oostanaula Creek to a free-flowing stream and allowing safer recreational use of the area.

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CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This chapter describes the affected environment (existing conditions) of environmental resources in the Project Site identified during project scoping (see Section 1.5) as having potential for effects to occur from adoption of the alternatives. The information contained in this chapter establishes the baseline conditions against which TVA and the public can compare the potential effects of the alternatives under consideration, as provided in Chapter 2. The affected environment descriptions below are based on surveys conducted from 2018 (TVA 2018b) to 2023 (New South Associates, Inc. [NSA] 2023), published and unpublished reports, and personal communications with resource experts.

3.1 Land Use

3.1.1 Affected Environment

Land use is defined as the way people use and develop land, including leaving land undeveloped and using land for agricultural, residential, commercial, and industrial purposes. The TVA Saulpaw Mill Dam is located on a reach of Oostanaula Creek in the Town of Calhoun, Tennessee in McMinn County (see Figure 1-1 and Figure 1-2). The dam includes earthen embankments on both the left (west) and right (east) sides of Oostanaula Creek. Oostanaula Creek is popular for informal recreational use, including bank fishing and swimming. Saulpaw Mill Dam has also become a common area for recreational users as an informal access point for kayaking, paddling, and canoeing (Hiwassee River Blueway 2023). No relevant land use or zoning plans were identified from McMinn County or the Town of Calhoun. The Project Site is part of a 51-acre, narrow shoreline tract zoned by TVA for industrial use under TVA's reservoir lands zoning scheme (TVA 2017). Aside from the CSX railroad, there are no industrial activities on the tract in the vicinity of the dam.

The 0.7-acre Project Site consists of flat terrain with elevation of approximately 700 feet above mean sea level with a minor drop in elevation to 680 ft on the open water portion of the site. Topography surrounding the Project Site is low and flat where there is open water and increases to 796 feet above sea level to the northwest of the Project Site. See Section 3.7.1 for a description of vegetation on the site.

Forested land to the northeast, agricultural land to the south of Hiwassee River, and developed areas (Town of Calhoun) to the west make up a majority of the land within two miles of the Project Site. There are two boat ramps to the west of the Site along the Hiwassee River and Calhoun Elementary School is located 0.4 mi west on Sherwood Avenue within a residential area.

3.1.2 Environmental Consequences

3.1.2.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. Existing land uses in the area surrounding the dam would likely remain unchanged, residential, and rural. Therefore, implementation of the No Action Alternative would have no project-related impacts on land use.

3.1.2.2 Alternative B

The proposed dam removal is compatible with TVA's current zoning of the Project Site and there is no applicable municipal or county zoning of the area. About 0.3 acres of mixed forest would be cleared to prepare the Project Site for the dam removal and the site would be closed to public access during dam removal activities. Following restoration of the Project Site, the area would again be open to public access. Land use would not change and the proposed dam removal would have neither adverse or beneficial effects on land use.

3.2 Soils and Prime Farmland

3.2.1 Affected Environment

3.2.1.1 Soils

Based on a review of the U.S. Department of Agriculture (USDA) Web Soil Survey (USDA 2019a), Hamblen silt loam, clayey substratum, zero to three percent slopes, occasionally flooded, comprises all of the land area of the Project Site. The Hamblin silt loam soil has a hydric rating of five percent. Hydric rating is an indicator of the percentage of a map unit that meets the criteria for hydric soils (USDA 2019b). Hydric soils are formed under conditions of saturation, flooding, or ponding, during the growing season, for a sufficient duration to develop anaerobic conditions in the upper soil layer. The Hamblen series soils consist of very deep, moderately well drained soils that formed in loamy alluvium from watersheds dominated by limestone, shale, and sandstone. These soils are on floodplains and are used for crops, hay, and pasture (USDA 2022).

3.2.1.2 Prime Farmland

The term "prime farmland" is assigned by the USDA to land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for such uses. The Farmland Protection Policy Act (FPPA; 7 U.S.C. § 4201 et seq.), requires federal agencies to consider the adverse effects of their actions on prime or unique farmland. Farmland subject to FPPA requirements does not have to be currently used for cropland. The land can be forested land, pastureland, cropland, or other land, but it cannot be in or committed to urban development. The purpose of the FPPA is "to minimize the extent to which federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses." Hamblen silt loam soil, (clayey substratum, zero to three percent slopes, occasionally flooded) is classified as prime farmland (USDA 2019a) and comprises all of the land area of the Project Site.

3.2.2 Environmental Consequences

3.2.2.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. Therefore, no project-related impacts on soils or prime farmlands would result from implementation of the No Action Alternative.

3.2.2.2 Alternative B

3.2.2.2.1 Soils

Under Alternative B, the Saulpaw Mill Dam would be removed. During construction, 0.4 acre of soils would be temporarily impacted during site preparation and construction activities. Approximately 225 square feet of soils would be permanently impacted on each streambank (approximately 15 linear feet of the right and left streambanks and 15 feet back

towards each railroad abutment) due to placement of fill material (riprap) for stabilization. Fill material would be selected based on its ability to provide adequate drainage as well as stabilize soils; thus, permanent impacts would be minor.

Temporary soil impacts would be mitigated through the installation of BMPs for sediment and erosion control prior to mobilization to the Project Site and any land disturbance activities. These controls would remain in place until the site is permanently stabilized. Erosion and sediment controls would be installed or implemented in accordance with the provisions of the Tennessee Erosion and Sediment Control Handbook (TDEC 2012) and TVA's NPDES permit. Areas of temporary impact would be stabilized and/or revegetated with native or non-invasive species upon completion of the dam removal activities.

The reasonably foreseeable future actions (RFFAs) discussed in Table 3-14, when combined with potential Project impacts, may result in minor cumulative permanent and temporary impacts to soils.

3.2.2.2.2 Prime Farmland

Under Alternative B, the Saulpaw Mill Dam would be removed. Based on soils data obtained from the USDA Web Soil Survey (USDA 2019a), there are 0.4 acre of soils classified as prime farmland within the Project Site. The proposed dam removal, including the post-construction revegetation of the site, would have no long-term effects, including cumulative effects, on prime farmland.

3.3 Geology and Groundwater

3.3.1 Affected Environment

The Project Site is in the Valley and Ridge physiographic province (Fenneman 1938, Miller 1974) which is characterized by northeast-trending ridges underlain by resistant rock separated by valleys underlain by less resistant rock. The rock formations are steeply tilted and crop out in long, narrow belts parallel to the trend of ridges and valleys; some belts are bounded by faults (Zurawski 1978).

The Project Site is underlain by the Longview Dolomite on the east side of Oostanaula Creek and the Chepultepec Dolomite on the west side of the creek. These dolomites are of Ordovician age and approximately 800 feet thick. The Longview and Chepultepec dolomites make up the lower portion of the Newala Formation, which is part of the Lower Chickamauga Group. The area is heavily faulted, and the Saulpaw Mill Dam site is approximately one mile east of the Knoxville Fault, a major thrust fault (Rodgers 1993).

Principal aquifers in the Valley and Ridge Physiographic Province are carbonate rocks of Cambrian and Ordovician age. The Knox Dolomite, which underlies about 60 percent of the province, is the most significant water-bearing formation (Zurawski 1978). Geology and topography across the valley suggest that groundwater in the surficial water table likely flows into Oostanaula Creek from the surrounding ridges and ultimately discharges into the Hiwassee River via the Saulpaw Mill Dam. A review of water wells within 0.5 mi of the Project Site identified one water well (Number 3079) across the Hiwassee River from the site (Figure 3-1).

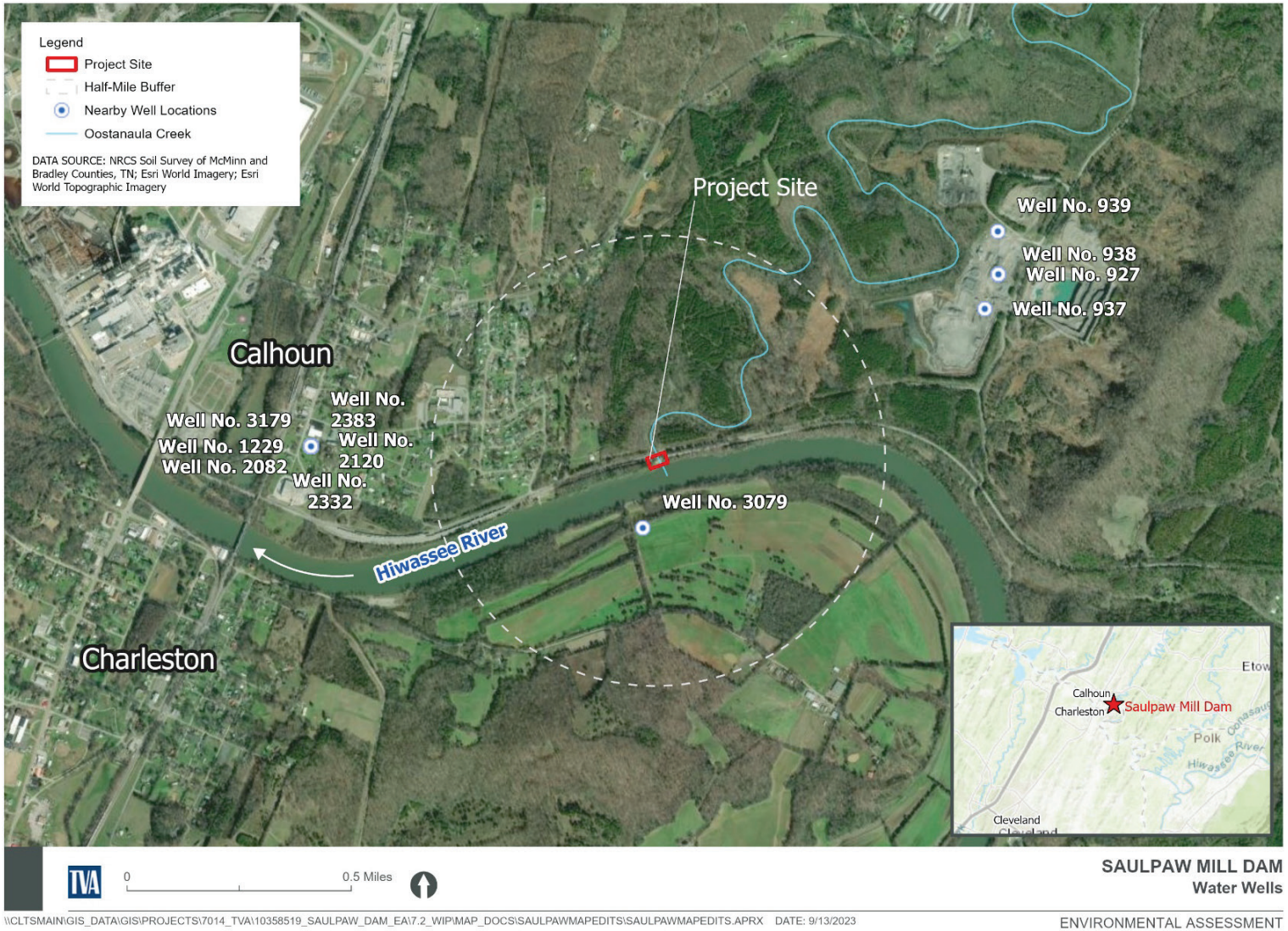

Figure 3-1. Water Wells within 0.5 mile of the Saulpaw Mill Dam

3.3.2 Environmental Consequences

3.3.2.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. There would be no adverse effects or adverse cumulative effects to the geology and groundwater at the site associated with implementation of the No Action Alternative.

3.3.2.2 Alternative B

Under Alternative B, approximately 200 concrete jacks would be installed on 30 linear feet (540 square feet) of creek bed around the railroad pier to prevent potential head cutting and scour around the CSX railroad pier. To stabilize the streambanks at the CSX railroad abutments, approximately 35 cubic yards of riprap would be installed along approximately 15 linear feet of the right and left streambanks and 15 feet back towards each railroad abutment (approximately 225 square feet on each bank). The aggregate used in the concrete and the riprap would be sourced from existing area quarries. Neither of these actions would cause impacts to the underlying geology of the Project Site and would not result in cumulative effects to geological resources.

Demolition of the dam and addition of fill (e.g., gravel or riprap) for bank stabilization would not create impervious surfaces that would limit groundwater infiltration. Removal of Saulpaw Mill Dam and associated work would not require the use of groundwater resources and these activities would not result in the generation of contaminants that could affect groundwater resources. No impacts to groundwater resources are anticipated. As such, there would be no cumulative effects to groundwater resources.

3.4 Surface Water and Water Quality

3.4.1 Affected Environment

Surface water is any water that flows above ground and includes, but is not limited to, streams, ponds, lakes, and wetlands. Streams can be further classified as perennial, intermittent, or ephemeral (or wet weather conveyance) based on the occurrence of surface flow. Wetlands are discussed in Section 3.6.

The CWA regulates discharges of pollutants into waters of the United States and establishes standards for the protection of water quality of surface waters. Section 404 of the CWA prohibits the discharge of dredge and fill material to waters of the United States, which includes wetlands, unless authorized by a permit issued by USACE. Section 401 of the CWA gives states the authority to grant, deny, or waive certification of proposed federal licenses or permits that may discharge into waters of the United States. Tennessee accomplishes the Section 401 Certification through its ARAP program and ensures that the proposed activities comply with the state's applicable effluent limitations, antidegradation, and water quality standards.

Under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403), permits issued by the USACE are required for structures or work in navigable waters of the United States, which include waters subject to the ebb and flow of the tide and waters that are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce. Oostanaula Creek is not considered a navigable water however the Hiwassee River is subject to Section 10. Based on a 1985 Memorandum of Understanding between TVA and the USACE, TVA projects within the Tennessee River basin are exempt from Section 10 permitting pursuant to Section 26a of the TVA Act.

In the state of Tennessee, water quality standards are established by the regulations set forth in the TN Water Quality Control Act and the CWA. These standards are then approved by the U.S. Environmental Protection Agency (USEPA); as part of this implementation of water quality standards, the state classifies water bodies according to their uses and establishes water quality criteria specific to these uses as directed by Section 303(c) of the CWA. Each state also issues an antidegradation statement containing specific conditions for regulated actions and designed to maintain and protect current uses and water quality conditions.

The proposed Saulpaw Mill Dam removal Project Site is in McMinn County, Tennessee, and is located at the confluence of Oostanaula Creek and the Hiwassee River at Hiwassee River Mile (HiRM) 19.8, on the right descending bank of the Chickamauga Reservoir (Figure 1-2). The project area falls within the Oostanaula Creek (0602000211) and Chickamauga Lake-Hiwassee River (0602000214) HUC-10 watersheds, in the Southern Limestone/Dolomite Valleys and Low Rolling Hills level IV sub-ecoregion of the greater Ridge and Valley III ecoregion (Griffith et al. 2009). The dam is associated with a flour mill that was removed by TVA in 1940 during the construction of Chickamauga Reservoir. During an October 2022 field survey, certified hydrologic professionals for TVA observed that the Project Site encompasses approximately 0.2 acres of the Hiwassee River and 0.1 acres of the Oostanaula Creek.

The Saulpaw Mill Dam, with a crest elevation of 683.5 feet, impounds a pool with an elevation of about 684.5 feet that extends a few thousand feet upstream of the dam. The surface elevation is relatively stable throughout the year. The adjacent Hiwassee River section of Chickamauga Reservoir immediately downstream of the dam has a normal summer pool elevation of 682.5 feet and a normal winter pool elevation of 675.0 feet.

3.4.1.1 Water Supply

Based on review of the USEPA Enforcement and Compliance History Online database search for the town of Calhoun (USEPA 2023a) and aerial imagery, two surface water intakes exist within five river miles of the Project Site. One intake is part of a paper mill owned by Resolute Forest Products, which is permitted (TN0002356) to withdraw up to 34.98 million gallons per day (MGD) (USEPA 2023b), with additional permitted withdrawals for drinking water (TN0004313) (TDEC 2023). The other surface water intake, for up to 5.63 MGD, is owned by Olin Corp for chlor alkali production, (USEPA 2023c). Both facilities are located downstream of the Project Site on the Hiwassee River. No surface water intakes were listed within five river miles of Saulpaw Mill Dam on Oostanaula Creek (USEPA 2023a).

3.4.1.2 Water Quality

Pursuant to Section 303(c) of the CWA, the Hiwassee River from RM 0.0 to RM 23.9 (4 miles upstream of the Project Site) is classified for domestic and industrial water supply, fish and aquatic life, recreation, livestock watering and wildlife, irrigation, and navigation uses (TDEC 2019a). Oostanaula Creek from RM 0.0 to RM 26.0 is classified for domestic and industrial water supply, fish and aquatic life, recreation, livestock watering and wildlife, and irrigation.

The CWA requires all states to identify waters where required pollution controls are not sufficient to attain or maintain applicable water quality standards and to establish priorities for the development of limits based on the severity of the pollution and the sensitivity of the established uses of those waters. States are required to submit reports to USEPA with

these data. The term “303(d) list” refers to the list of impaired and threatened streams and water bodies identified by the state. The Hiwassee River in the vicinity of Saulpaw Mill Dam (listed as the “Hiwassee River Embayment of Chickamauga Reservoir” on Tennessee’s Final 2022 List of Impaired and Threatened Waters) is listed as impaired for mercury and *Escherichia coli* (TDEC 2022). Potential impairment sources of mercury include industrial point-source discharges and atmospheric deposition; the source of *E. coli* is unknown. Oostanaula Creek in McMinn County is also listed as impaired on the 303(d) final list for 2022, with causes of impairment including sedimentation, nutrients (historically, phosphorus), *E. coli*, and alteration of streamside vegetative cover. Potential sources of these impairments may include livestock grazing in riparian zones, sanitary sewer overflows (collection system failures), municipal point-source discharges, and non-irrigated crop production.

Water quality data was compiled for the nearest monitoring location to Saulpaw Mill Dam (location HIWAS018.6MM at HiRM 18.6, 1.2 miles downstream of the dam) from the USEPA’s Water Quality Data Portal (USEPA 2022b). While this monitoring location is downstream of the Project Site and upstream from several major industrial discharges, water quality assessments show that the Hiwassee River fails to meet designated use criteria beginning at its confluence with Oostanaula Creek, which is also shown as not supporting its designated uses. There is one additional (unnamed) tributary which discharges to the Hiwassee River between the confluence of Oostanaula Creek and the water quality monitoring location; this stream is also listed as not supporting its designated uses. Due to the limited distance from Saulpaw Mill Dam and likelihood that Oostanaula Creek is contributing to water quality conditions based on locale of listed impairments, it is likely that this monitoring location reasonably represents water quality of the Hiwassee River at Saulpaw Mill Dam. The water quality parameters summarized in Table 3-1 represent those most regularly monitored at this location since 2016. No monitoring was completed between 2001 and 2015, when *E. coli* was monitored. Therefore, water temperature, dissolved oxygen, pH, conductivity, turbidity, and *E. coli* monitoring data are provided below.

As stated above, the Hiwassee River in the vicinity of Saulpaw Mill Dam is listed as impaired for mercury and *E. coli*. Mercury readings are not available for the HiRM 18.6 monitoring location, but according to Rule 0400-40-03-.03 Criteria for Water Uses, mercury in this area may exceed concentration thresholds set for the applicable designated use classifications, which range from 0.05 micrograms per liter (µg/l) to 2.0 µg/l (TDEC 2019b). The most recent mercury data for this sampling location was collected in 2001, with a result of 0.2 µg/l, exceeding requirements for recreational uses (USEPA 2022b). *E. coli* thresholds for applicable use classifications range from 126 to 630 colony forming units (cfu) per 100 milliliters (ml) (TDEC 2019b) and were exceeded in 2018 and 2022 (Table 3.4-1). The remaining water quality parameters listed in Table 3-1 fall within the ranges for the applicable use classifications.

Table 3-1. Summary of Water Quality Data Collected in the Hiwassee River 1.2 River Miles Downstream of Saulpaw Mill Dam

Water Quality Parameter	2016			2017			2018			2022		
	Min	**Max**	**Avg***	**Min**	**Max**	**Avg**	**Min**	**Max**	**Avg**	**Min**	**Max**	**Avg**
Temperature (°C)	24.8	24.8	24.8	9.4	23.4	18.6	3.4	20.7	11.5	18.8	23.4	22.2
Dissolved Oxygen (mg/l)	7.61	7.61	7.6	8.5	11.46	9.3	9.02	13.42	11.0	8.31	9.37	8.7
pH	7.46	7.46	7.5	7	7.9	7.4	7.11	7.6	7.4	7.51	7.8	7.6
Conductivity (µmhos/cm)	62.7	62.7	62.7	54.3	102.7	66.9	54.7	95.9	72.5	55.5	79.1	67.3
Turbidity	--	--	--	--	--	--	--	--	--	4.2	4.2	4.2
E. coli (cfu/100 ml)	--	--	--	19.5	52.9	38.8	17.5	**1,046**	**178.5**	13.0	**128**	87.3

Source: USEPA 2022b
Bold numbers indicate exceedance of water quality criteria for one of the Hiwassee River's designated uses.
*Avg: average.

Based on a sediment survey conducted in May 2022 (TVA 2022a), 83 cubic yards of sediment have accumulated behind the dam. A screening level survey of sediment contaminants in Oostanaula Creek was conducted in January 2018 (TVA 2018a). Samples were collected from five random locations in Oostanaula Creek, extending from Saulpaw Mill Dam upstream approximately 0.2 miles. Samples were analyzed for selected metals, organochlorine pesticides, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), total organic carbons, and percent moisture.

Results of the study indicated minimal contamination of Oostanaula Creek sediments. Organochlorine pesticides, PAHs, and PCBs concentrations were below method detection limits in all samples except at the first sampling location upstream of the Oostanaula-Hiwassee confluence (site 44C), where technical chlordane was detected at a concentration below the practical quantitation limit (TVA 2018a). Of the 14 metals analyzed, only cadmium and selenium concentration were less than detection limits in some samples. The highest concentrations of arsenic, chromium, iron, lead, manganese, nickel, and selenium were detected at the sampling location just a few feet upstream of Saulpaw Mill Dam (site 45C).

Concentrations of arsenic, chromium, and lead were below probable effect concentrations (PECs); thus, effects to benthic biota would be unlikely. PECs were not derived for iron and manganese, but the concentrations of these metals in the Oostanaula sediments were within the expected range for TVA reservoirs. Similarly, the concentrations of all metals were within naturally occurring background levels for soils in the State of Tennessee.

3.4.2 Environmental Consequences

3.4.2.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state As such, surface waters and water quantity and quality would not change as a result of the continued presence of the dam and any adverse effects of the dam on water quality would continue.

3.4.2.2 Alternative B

Alternative B would consist of the removal of the Saulpaw Mill Dam in three phases, as described in Section 2.1. Removal of the dam would require permanent fill in an area of approximately 540 square feet in Oostanaula Creek associated with the installation of concrete jacks and riprap required to stabilize the railroad pier. Minor temporary impacts would occur to Oostanaula Creek and the Hiwassee River due to streambed disturbance during installation of the concrete jacks and riprap and the release of sediments from behind Saulpaw Mill Dam resulting in a temporary increase in turbidity downstream. Sampling of the sediments behind the dam showed minimal contamination, with metals within naturally occurring background levels for soils in Tennessee; therefore, the release of these sediments is not likely to cause substantial impacts to downstream waters. The use of a cofferdam, if necessary, would result in a minor, temporary impact due to dewatering of approximately 1,500 square feet (0.03 acre) of Oostanaula Creek. The in-water work may alternatively be performed in the wet using divers and airlift dredging procedures.

Permanent impacts in the lower reach of Oostanaula Creek from Saulpaw Mill Dam removal would occur from a lowering of the water surface elevation upstream of the dam site of about 2 feet during normal Chickamauga reservoir summer pool levels and 8 feet during the winter. This would restore a stretch of Oostanaula Creek of undetermined length currently impounded by the dam to free-flowing conditions during summer. During the

winter, due to the drawdown of Chickamauga Reservoir, almost all of Oostanaula Creek would be restored to free-flowing conditions. These changes would ultimately result in a permanent benefit of restoring Oostanaula Creek's hydrologic connectivity with the rest of the Hiwassee River watershed. Appropriate BMPs would be installed for sediment and erosion control prior to mobilization to the Project Site and any land disturbance activities to prevent in-stream sedimentation from upland areas. These controls would remain in place until the site is permanently stabilized. Erosion and sediment controls would be installed or implemented in accordance with the provisions of the Tennessee Erosion and Sediment Control Handbook and TVA's NPDES Construction General Permit, Section 404 permit, and Section 401 permit. Areas of temporary impact would be stabilized and/or revegetated with native or non-invasive species upon completion of the dam removal activities. The temporary stockpile of the dam blocks at Hiwassee Meadowlands Park would not affect surface waters or water quality.

Overall, impacts to surface waters and water quality from the project would be minor through the use of BMPs and prior testing of released materials. Ultimately, riverine habitat at the confluence of Oostanaula Creek and the Hiwassee River would experience large, permanent, beneficial effects by the removal of the dam and pier by naturalizing the creek hydraulics and removing an aquatic organism passage barrier. Associated subsequent beneficial impacts from the dam removal could include improvements to water quality through enhanced watershed connectivity, aquatic animal habitat and plant communities, and recreational activities.

The Saulpaw Mill Dam removal would result in an overall net-positive effect to Oostanaula Creek and Hiwassee River, however disturbance to surface waters during dam removal and the passage of sediments downstream resulting in elevated turbidity would contribute to minor cumulative impacts to water quality if the periods of deconstruction of Saulpaw Mill Dam overlaps with construction of projects listed in Table 3-14 (and if the RFFAs also cause impacts to surface waters and water quality); particularly the Tarver Site or Molpus Site (TVA 2022b,c). The Tarver Site encompasses approximately 2.5 miles of Oostanaula Creek upstream of County Road 950 (Hiwassee Road), and the Molpus site abuts the Hiwassee River approximately 0.9 mile upstream of the Project Site. Impacts to Oostanaula Creek or Hiwassee River as a result of these projects would result in minor to moderate incremental cumulative impacts in combination with the Saulpaw Mill Dam removal.

3.5 Floodplains

3.5.1 Affected Environment

A floodplain is the relatively level land area along a stream or river that is subject 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 area subject to a 0.2-percent chance of flooding in any given year is normally called the 500-year floodplain. Executive Order (EO) 11988, Floodplain Management requires that federal agencies evaluate the effects of their proposed actions on floodplains. Many communities also have ordinances addressing development in floodplains.

Saulpaw Mill Dam is located at the confluence of Oostanaula Creek and the Hiwassee River at RM 19.8, on the right descending bank of Chickamauga Reservoir, in McMinn County. The Hiwassee River forms the county boundary between McMinn County to the north and Bradley County to the south. At this location and based on floodway data tables and flood profiles in the Federal Emergency Management Agency (FEMA) flood insurance

studies (FEMA 2007; FEMA 2009), the 100- and 500-year flood elevations of Oostanaula Creek and the Hiwassee River at the Project Site are 698.1 and 701.8 feet, respectively, referenced to North American Vertical Datum 1988, as illustrated in Figure 3-2. The drainage area of the Hiwassee River at the Oostanaula Creek confluence is about 2,227 square miles; the drainage area of Oostanaula Creek at its mouth is about 69 square miles (TVA 1970).

TVA reservoirs have either power storage or flood storage or both. Power storage is allocated to a range of elevations and water occupying space in that range is used to generate electric power through a dam's hydroturbines. Flood storage is allocated to a range of elevations and water occupying space within that range is used to store flood water during a flood or high-flow rain event. The power storage zone (PSZ) on Chickamauga Reservoir at this location extends from 674.8 to 682.3 feet, and the flood storage zone (FSZ) extends from 674.8 to 701.8 feet.

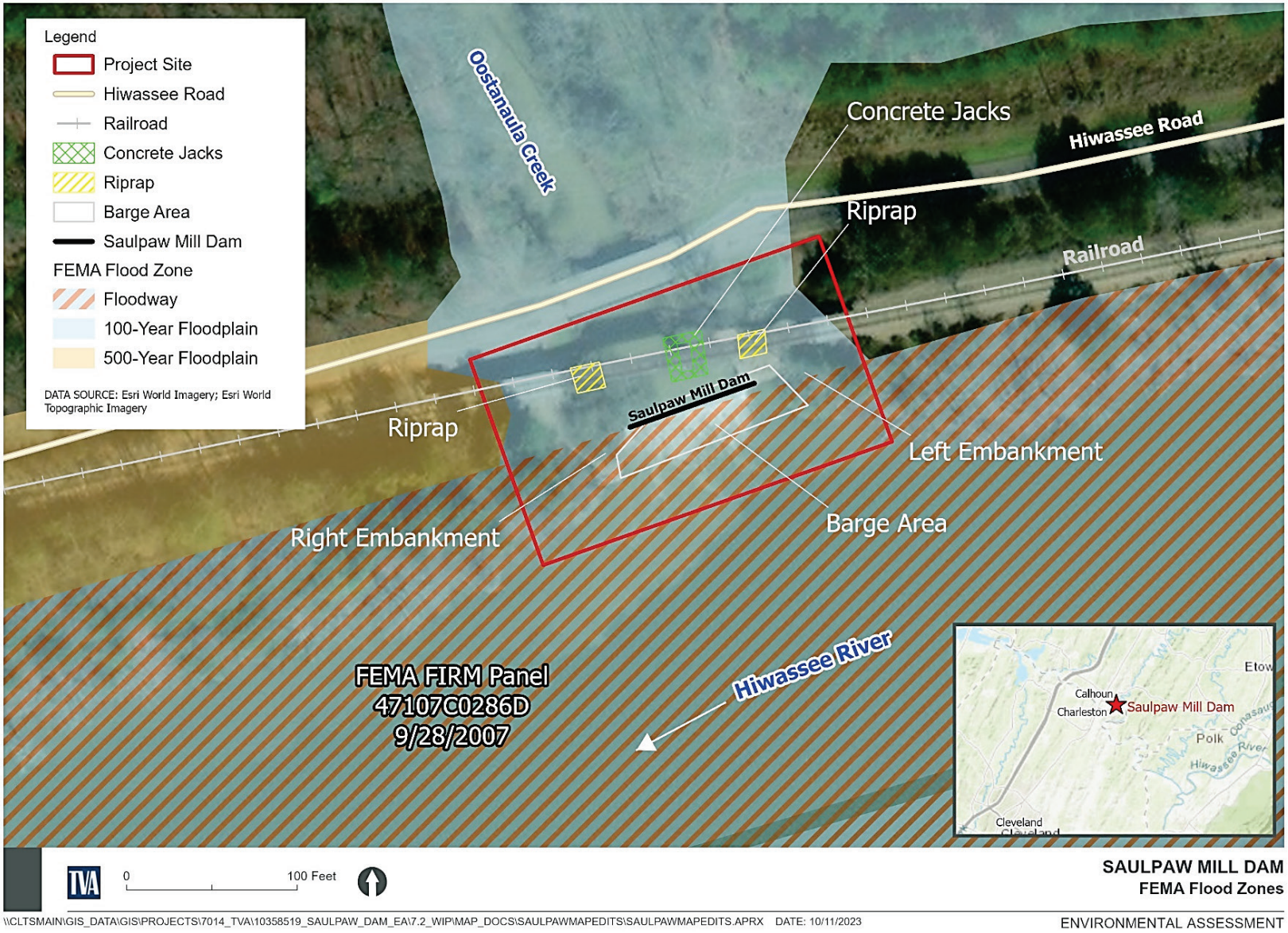

Figure 3-2. FEMA 100-Year and 500-Year Floodplains at the Saulpaw Mill Dam Project Site

As shown in Figure 3-2, Saulpaw Mill Dam is located within the 100-year floodplain and just outside the Hiwassee River floodway, on McMinn County Flood Insurance Rate Map panel 47107C0286D, effective September 28, 2007. The floodplain on Oostanaula Creek is labeled as Zone AE (areas of the 100-year floodplain where base flood elevations or flood depths have been determined) up to about Oostanaula Creek Mile 1.0, whereupon the flood zone changes to approximate Zone A (areas of the 100-year floodplain where no base flood elevations or flood depths have been determined). The Project Site is also located within the Chickamauga Reservoir FSZ. A temporary stockpile area for the dam blocks would be located in a corner of Hiwassee Meadowlands Park off Etowah Road, about one mile northwest of the Project Site and well upland of Chickamauga Reservoir in McMinn County.

The elevation of the base of Saulpaw Mill Dam is 667.7 feet, about 4 feet below the creek bed, and the top of the dam and steel lift gate are both at 683.5 feet. The elevation of the right abutment of the dam is 690.2 feet. The dam currently functions as a weir because the lift gate is not used and the elevation of the pool impounded by Saulpaw Mill Dam is approximately 684.5 feet. All of the dam components, as well as the impounded pool, are within the 100-year floodplain. The in-stream railroad bridge pier and the bridge abutments are also located within the Oostanaula Creek 100-year floodplain.

3.5.2 Environmental Consequences

As a federal agency, TVA adheres to the requirements of EO 11988, Floodplain Management. The objective of EO 11988 is "…to avoid to the extent possible the long- and short-term adverse effects associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative" (EO 11988, Floodplain Management). 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 (U.S. Water Resources Council 1978). The EO requires that agencies avoid the 100-year floodplain unless there is no practicable alternative.

Additionally, TVA evaluates project activities, facilities, and structures that would be located in the 100-year floodplain in accordance with its 1981 class review of repetitive actions in the 100-year floodplain (TVA 1981). Repetitive actions usually occur adjacent to streams or TVA reservoirs that TVA has evaluated as a class to determine their impacts on natural and beneficial floodplain values.

3.5.2.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. As such, no change would occur to current conditions found within the local floodplains, consistent with EO 11988. Flood elevations would remain unchanged.

3.5.2.2 Alternative B

Under Alternative B, the Saulpaw Mill Dam would be removed as described in Section 2.1.2. The Saulpaw Mill Dam Project Site is located within the 100-year floodplain of Oostanaula Creek and the Hiwassee River. Removing the dam would return part of the currently impounded portion of Oostanaula Creek to a free-flowing stream. This free-flowing segment would be fairly short at the normal summer pool level of Chickamauga Reservoir which is about 2 feet lower than the impounded pool elevation. Most of lower Oostanaula Creek would be free-flowing during the winter (see Section 3.4.2.2). This would improve its

flood-carrying capacity and would have an overall slight beneficial impact on floodplains and flood elevations, and thus be consistent with EO 11988. The upstream extent of the 100- and 500-year floodplains along Oostanaula Creek would not change.

TVA would place concrete stabilization around the base of the railroad bridge pier just upstream of Saulpaw Mill Dam, as well as replace riprap on the railroad bridge abutments, over an area of approximately 540 square feet. A negligible amount of the fill would be placed within the Chickamauga Reservoir PSZ. As stated previously, the Project Site is located within the Chickamauga Reservoir FSZ, which ranges from 674.8 to 701.8 feet. Concrete stabilization in the shape of “jacks” would be placed at the base of the railroad bridge pier. Consistent with EO 11988 and the TVA Flood Storage Loss Guideline (FSLG), less that one acre-foot of stabilization of bridge piers and bridge abutments is considered to be a repetitive action in the 100-year floodplain and FSZ that should result in only minor impacts. To minimize adverse impacts, only the minimum quantity of riprap and jacks would be used that would still meet project objectives. Based on topographic maps and the FEMA National Flood Hazard Layer, the dam blocks temporary stockpile site is located outside both identified and unmapped 100-year floodplains, which would be consistent with EO 11988.

Temporary staging and construction access areas are proposed on the Project Site and would be located within 100-year floodplain. Material storage areas are not considered to be repetitive actions in the floodplain or FSZ. There is no practicable alternative to locating the staging areas in the floodplain and FSZ because other placement options outside of the floodplain would require cutting of trees, or the land is not suitable due to ground saturation, terrain, or topography challenges and constraints. To minimize adverse impacts, an evacuation plan would be prepared for removal of flood-damageable equipment and materials from the floodplain in the event of a flood or high-flow event. Additionally, upon completion of the project, the temporary areas would be stabilized with vegetation.

Minor grading of the site after vegetation clearing is considered a repetitive action within the 100-year floodplain under EO 11988 and the FSLG, which would result in minor impacts. To minimize adverse impacts, only the minimum amount of grading would be done, and excavated material would be spoiled on land lying outside the 500-year floodplain and above the 500-year flood elevation of the Hiwassee River.

The right abutment of Saulpaw Mill Dam is within the Hiwassee River floodway. McMinn County participates in the National Flood Insurance Program (NFIP), and any development must be consistent with its floodplain regulations. The removal of the dam and right abutment from the floodway and the subsequent grading of the right abutment would be so minor as to not create an encroachment into the Hiwassee River floodway; therefore, the project would comply with the NFIP. The removal of the dam would have a slight beneficial impact on the FSZ because the part of the stream would be returned to unobstructed conditions, allowing the Hiwassee River to flow into Oostanaula Creek during high-flow or flood events.

With implementation of BMPs and minimization and mitigation efforts described in Section 2.3, Alternative B would result in temporary, minor adverse impacts on floodplains. Overall Alternative B would have minor, long term, beneficial effects on floodplains by returning part of the stream channel to unobstructed conditions and partially restoring the original ground contours of the Oostanaula Creek streambank.

The removal of Saulpaw Mill Dam would not be likely to cause cumulative positive or negative impacts to floodplains and their natural and beneficial values in relation to the RFFAs discussed in Table 3-14 because impacts due to Alternative B would be limited to Oostanaula Creek within the Project Site. Floods on the Hiwassee River would control flood elevations on Oostanaula Creek up to at least mile 0.9; therefore, the removal of the dam would likely result in no changes in the 100-year or 500-year floodplains or flood elevations along lower Oostanaula Creek.

3.6 Wetlands

3.6.1 Affected Environment

Wetlands are those areas inundated or saturated by surface or groundwater such that vegetation adapted to saturated soil conditions are prevalent. Examples include bottomland forests, swamps, wet meadows, isolated depressions, and fringe wetland along the edges of watercourses and impoundments. Wetlands provide many societal benefits such as toxin absorption and sediment retention for improved downstream water quality, storm water impediment and attenuation for flood control, shoreline buffering for erosion protection, and provision of fish and wildlife habitat for commercial, recreational, and conservation purposes.

Activities in wetlands are regulated by state and federal agencies to ensure no net loss of wetland resources. Under CWA §404, activities resulting in the discharge of dredge or fill material to waters of the U.S., including wetlands, must be authorized by the USACE under a Nationwide, Regional, or Individual Permit to ensure no more than minimal impacts to the aquatic environment. Section §401 of the Clean Water Act requires state water quality certification for projects in need of USACE approval. In Tennessee, TDEC is responsible for issuance of water quality certifications pursuant to Section 401. Lastly, Executive Order 11990 requires federal agencies to avoid construction in wetlands and minimize wetland degradation to the extent practicable.

A wetland assessment was performed to ascertain wetland presence, condition, and extent to which wetland functions are provided within the proposed Project Site. Field surveys were conducted on October 11, 2022, to delineate wetland areas potentially affected by the proposed Action Alternative. The review footprint included the area immediately surrounding the proposed dam removal and the riparian areas upstream and downstream from the dam.

Wetland field determinations were performed according to the USACE standards, which require documentation of hydrophytic vegetation (wetland adapted vegetation), hydric soil, and wetland hydrology (Environmental Laboratory 1987; Lichvar et al. 2016; USACE 2012). No hydric soil, wetland hydrology, or hydrophytic vegetation were identified in combination during the field survey. Therefore, no wetlands are present.

3.6.2 Environmental Consequences

3.6.2.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. No wetlands were identified within the Alternative A footprint, therefore there would be no effects to wetlands.

3.6.2.2 Alternative B

No wetlands were identified within the Alternative B footprint; therefore, there are no direct impacts anticipated to wetlands. The proposed action would comply with EO 11990 requirements to avoid wetlands to the greatest extent possible and avoid degradation of wetlands. No adverse cumulative effects to wetlands are anticipated.

3.7 Vegetation

3.7.1 Affected Environment

The Saulpaw Mill Dam Project Site is located within the Southern Limestone/Dolomite Valleys and Low Rolling Hills level IV sub-ecoregion of the greater Ridge and Valley III ecoregion (Griffith et al. 2009). Soils in this ecoregion vary in productivity, with land cover including oak-hickory and oak-pine forests, pastures, intensive agriculture, and urban and industrial areas.

The Project Site has been heavily disturbed by its prior land use as a mill and dam. The site is dominated by early successional vegetation including non-native and native herbaceous plants, shrubs, and a few trees. These areas possess little conservation value and the plant communities that occur there are common and well represented throughout the region.

A desktop survey was performed using historical and recent aerial imagery from Google Earth (Google LLC 2022) to describe vegetation communities within the Project Site (Figure 3-3). Vegetation in the 0.7-acre Project Site consists primarily of woody vegetation consisting of shrubs (0.12 acre), and trees (0.02 acre), and 0.03 acre of herbaceous plants. The remaining areas comprise surface waters (0.3 acre) and unvegetated or developed areas (0.23 acre).

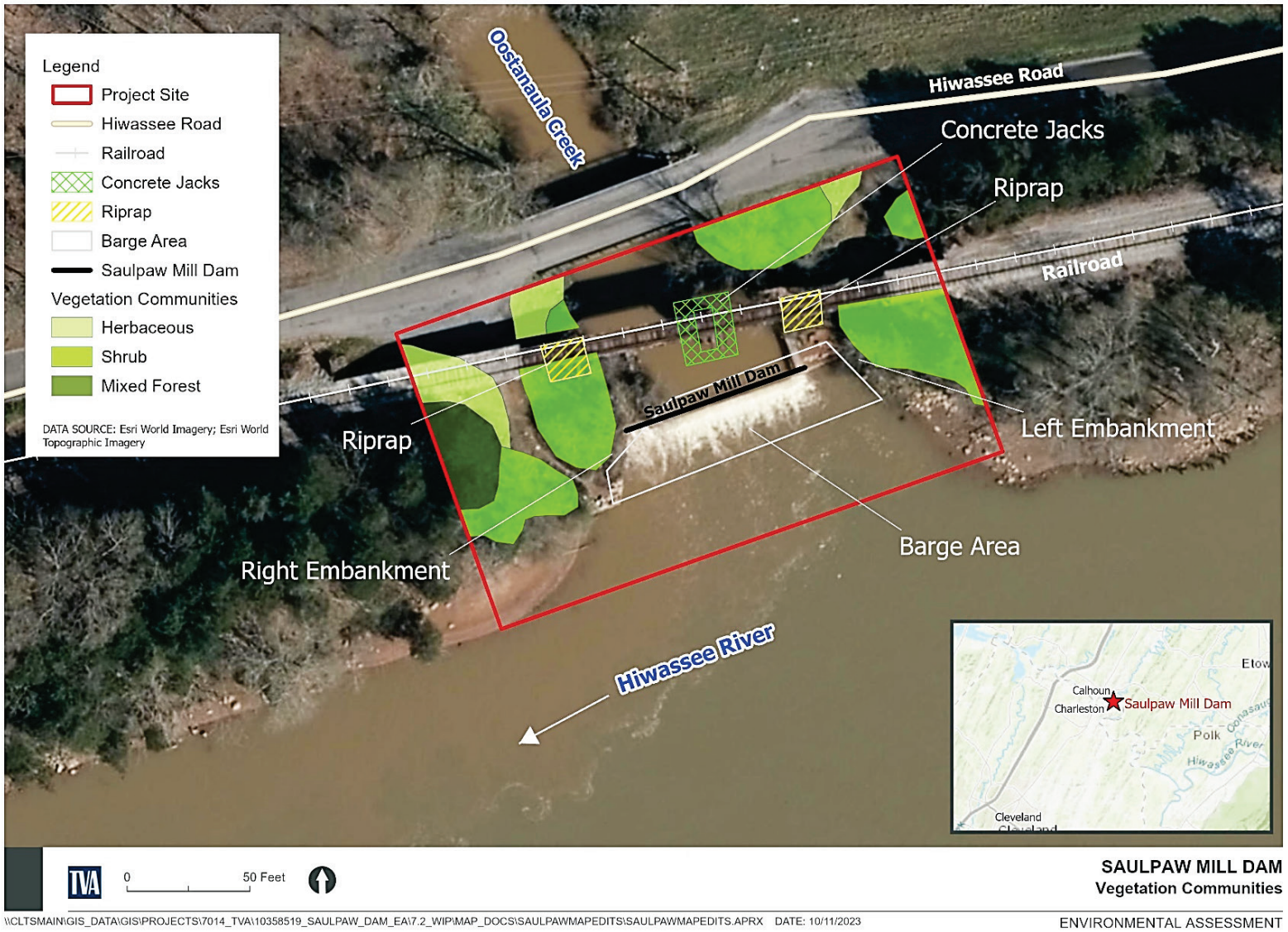

Figure 3-3. Vegetation Communities within the Saulpaw Mill Dam Removal Project Site

3.7.2 Environmental Consequences

3.7.2.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state and no impacts to the vegetation of the site would occur. Any changes occurring in the vegetation on-site would be the result of other natural or anthropogenic factors and would not be the result of the No Action Alternative.

3.7.2.2 Alternative B

Under Alternative B, all vegetation would be cleared from the Project Site, resulting in minor impacts due to the removal of 0.12 acre of shrubs, 0.02 acre of trees, and 0.03 acre of herbaceous vegetation. None of these areas support unique natural plant communities. Although clearing and grading activities would remove some vegetation, the site would be stabilized as directed by the project-specific Erosion and Sediment Control Plan (ESC&P). At project completion, cleared and graded areas would be planted with native and non-invasive grasses and herbs. Over time, shrubs and trees would likely become established on some of the site.

This alternative would result in temporary cumulative impacts to vegetation with consideration of the RFFAs presented in Table 3-14 that may require vegetation removal, particularly the Tarver Site which is located along the Oostanaula Creek upstream of the Project Site (TVA 2022c). The Tarver Site consists of former agricultural land which has regenerated to exhibit all vegetation strata including herbaceous plant communities, scrub/shrub, and forested areas (Google LLC 2022). Although the limited existing vegetation present on the Project Site would be cleared for project activities, the site would be revegetated following completion of the dam removal and associated stabilization measures.

3.8 Wildlife

3.8.1 Affected Environment

The action area includes the Saulpaw Mill Dam and the shorelines immediately adjacent to the dam at the confluence of the Oostanaula Creek and Hiawassee River in McMinn County.

As described in Section 3.7.1, the plants along the shoreline are comprised of early successional vegetation dominated by non-native and native weeds and small stands of deciduous trees close to the dam and scrub vegetation (including non-native species). The landscape in the surrounding area is a mixture of farmland, pine plantations, mixed deciduous forest, industrial sites, a small municipality, and riverine habitat including riparian forest.

Terrestrial habitats within the action area are restricted to shoreline herbaceous and scrub vegetation with a few deciduous trees. Disturbed riparian habitats along roadways such as these provide habitat for common birds such as Carolina chickadee, Carolina wren, downy woodpecker, northern cardinal, northern flicker, northern mockingbird, tufted titmouse, and yellow-breasted chat. Mammals such as bobcat, coyote, ground hog, and white-tailed deer also are likely to utilize habitat like this in this region (Whitaker 1996). Amphibians likely to use the area include American bullfrog, Cope’s gray tree frog, northern cricket frog, southern leopard frog, and upland chorus frog. Reptiles utilizing these wet areas and the

surrounding habitat include garter, northern water, rat and ring-necked snakes (Powell et al. 2016, Gibbons and Dorcas 2005).

No cave records were identified within three miles of the project during a review of the TVA Regional Natural Heritage Database in September 2022.

3.8.1.1 Migratory Birds

No records of heronries or aggregations of other migratory birds have been documented within three miles of the project. Review of the USFWS Information for Planning and Consultation (IPaC) tool in June 2024 (USFWS 2024) identified seven migratory bird species of conservation concern that could occur within the Project Site: bald eagle, bobolink, chimney swift, prairie warbler, red-headed woodpecker, rusty blackbird, and wood thrush. The Project Site could provide a small amount of habitat for the prairie warbler and the rusty blackbird, a winter resident. Foraging habitat for bald eagle is also present in the Creek and Hiwassee River; however, no bald eagle nests are known within three miles of the action area or in McMinn County. No bald eagle nests or migratory birds of conservation concern were observed by TVA Terrestrial Zoologists during the October 2022 field survey of the Project Site.

3.8.2 Environmental Consequences

3.8.2.1 Alternative A

Under Alternative A (No Action Alternative), the dam would not be removed. Soil, vegetation, and stone blocks would remain in their current state, and tree clearing and earth moving would not occur in association with this project. Terrestrial animals and their habitats would not be affected under Alternative A.

3.8.2.2 Alternative B

Under Alternative B (Action Alternative) the dam would be removed, and the Project Site would be cleared for deconstruction activities and material storage areas. Some areas would be graded, and other areas would receive erosion control and stabilization measures. Approximately 0.02 acre of trees, 0.12 acre of shrubs, and 0.03 acre of herbaceous habitat would be cleared resulting in displacement of wildlife currently using the area. Direct effects to some individuals are possible if those individuals are immobile during the time of habitat removal (e.g., during breeding/nesting seasons). Habitat removal would likely disperse mobile wildlife into surrounding areas in attempts to find new food resources, shelter, and to reestablish territories; thus, the effects would be considered minor. Overall, due to the small amount of already disturbed habitat being impacted, and the amount of similarly suitable habitat in areas immediately adjacent to the Project Site, common wildlife would experience minor, temporary impacts due to the disturbance and loss of herbaceous habitat, and minor, permanent impacts due to the loss of woody vegetated habitat. Long term impacts to common wildlife populations are not expected. Federally and state-listed threatened and endangered species are addressed in Section 3.10.

USFWS (2024) identified seven migratory birds of conservation concern that could occur within the Project Site. Rusty blackbirds would not be present in the action area during the breeding season. A small amount of nesting habitat exists in the Project Site for the prairie warbler. The Project Site receives regular disturbance due to the road, railroad, and frequently used trails on either side of the dam. Trash and fire rings were also visible during field surveys as evidence of the frequency with which humans visit this site. Due to the regular disturbance at the site, it is less likely that birds would select this site for successful nesting. Furthermore, vegetation clearing would occur during winter outside of the nesting

season. Due to the temporary and short nature of the disturbance, relatively small area of impact, and quality of habitat impacted, with implementation of BMPs, the proposed action would not be expected to impact populations of migratory birds.

No bald eagle nests would be impacted as none are known within three miles. Activities under Alternative B would be performed in compliance with the National Bald Eagle Management Guidelines (USFWS 2007a); thus, effects to bald eagles would be minor.

Based on a review of the RFFAs presented in Table 3-14, activities from RFFA in conjunction with Alternative B could result in minor, temporary cumulative impacts to wildlife if the projects include wildlife habitat impacts (e.g., vegetation removal) and if construction periods overlap with the Saulpaw Mill Dam removal. This would be particularly true if the project overlaps with activities associated with the Tarver Site, which is upstream of the Project Site along the Oostanaula Creek (TVA 2022c).

3.9 Aquatic Ecology

3.9.1 Affected Environment

Oostanaula Creek may have historically supported a diverse aquatic community, but generations of poor land use practices have led to elevated levels of sedimentation and phosphorus pollution which greatly impacts the stream's ecological health. As stated in Section 3.4.1.2, Oostanaula Creek is listed as 303(d)-listed as impaired for sedimentation, nutrients (historically, phosphorus), *E. coli*, and alteration of streamside vegetative cover; many of these impairments are the result of grazing in streamside zones and/or crop production, among other contributing sources. The aquatic community of Oostanaula Creek has been surveyed seven times since the mid-1990s under TVA's Index of Biotic Integrity watershed health program and has scored either "poor" or "very poor." These scores characterize a stream of low diversity, in this case only 10 fish species, and dominated by pollution-tolerant species and very few specialized species with hybridization, parasites, and diseases being common. The high proportion of tolerant species in Oostanaula Creek such as redbreast sunfish, green sunfish, central stonerollers, and striped shiners is also indicative of a stream imperiled by land use practices (Johnson and Treece 1998). The poor health of the aquatic community currently present in Oostanaula Creek is consistent with numerous other creeks impounded by small mill dams in the southeast, where stream impoundments reduce aquatic connectivity and constrain aquatic ecology (Helms et al. 2011.).

The affected reach of the Hiwassee River is impounded by the effects of Chickamauga Dam. The aquatic community consists of tolerant lake-dwelling species such as sunfish, black bass, and suckers. Absent are more sensitive darter and minnow species that would have been historically present in the free-flowing Hiwassee River and still exist in some capacity further upstream. The presence of the Saulpaw Mill Dam presents a barrier to upstream fish and mussel dispersal and to spawning areas for lake-dwelling species such as smallmouth and black buffalo.

3.9.2 Environmental Consequences

3.9.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. The dam would remain in place and continue to function as a barrier to aquatic organism passage. Sediments would continue to accumulate behind the dam, potentially increasing in contaminants. No direct effects would

occur to aquatic organisms under Alternative A; however, the continued presence of the dam would result in moderate effects to aquatic organisms that could otherwise access abundant habitat in Oostanaula Creek.

3.9.2.2 Alternative B

Alternative B would result in the removal of the Saulpaw Mill Dam as described in Section 2.1.2. As discussed in Section 3.4, sediments containing arsenic, chromium, iron, lead, manganese, nickel, and selenium were detected at levels that would not affect benthic biota, within the range of those expected for TVA reservoirs, and within the naturally occurring background levels for soils in the State of Tennessee. Following removal of the dam, the 83 cubic yards of accumulated sediments would be allowed to naturally disperse. The removal of the dam and associated construction activities would temporarily increase the sediment load downstream of the confluence with the Hiwassee River. However, the Hiwassee River typically carries a high sediment load; as such, effects to aquatic ecology from anticipated temporary increases to sediment load would be minor. However, improvements to land use practices could improve water quality enough to allow Oostanaula Creek to be recolonized by organisms from the mainstem Hiwassee River once barriers to dispersal such as Saulpaw Mill Dam are removed.

Following removal of the dam, the water levels in the currently impounded stretch of Oostanaula Creek would be reduced by about 2 feet during the summer and 8 feet during the winter. This would eliminate a small amount of lentic habitat created by the impoundment. However, the impounding of the adjacent section of the Hiwassee River by Chickamauga Dam has created slow moving, back water habitat that likely sustains lentic species. Up to 540 square feet of Oostanaula Creek bottom surrounding the railroad pier would be altered by the installation of stabilization structures (concrete jacks). This introduction of new complex habitat could result in a positive ecological benefit for aquatic organisms.

Overall, the removal of the Saulpaw Mill Dam would result in large beneficial effects to aquatic life in the Hiwassee River by providing improved access to up to 116.5 miles of perennial stream habitat within the Oostanaula Creek watershed (assuming no other barriers) (Hagen and Walker 2007).

TVA would adhere to state and federal permit requirements and would commit to implementing provisions and other measures, as identified in Section 2.3, required to mitigate adverse effects anticipated from modifications made to the Project Site. Although dam removals may lead to temporary increases in suspended sediments downstream of the dam, dam removals also provide broad ecological benefits such as increasing watershed connectivity, improved water quality, and the restoration of habitat diversity (Sherman 2013). Additionally, a permanent impact in the lower reach of Oostanaula Creek from Saulpaw Mill Dam removal would occur from a lowering of the water surface elevation due to the removal of the impoundment. Associated beneficial impacts from the dam removal could include improvements to water quality, improved stream habitat quality for plant and animal communities, increased fish density or diversity, or a shift in species composition; these changes could also enhance recreational activities. Like small dam removal efforts on other streams, the removal of Saulpaw Mill Dam would enhance stream connectivity and would be expected to result in overall minor ecological benefits in Oostanaula Creek (Sherman 2013).

The removal of Saulpaw Mill Dam would result in temporary impacts due to disturbance of aquatic habitat and passage of sediments downstream. Removal of silty sediment via airlift dredging and downstream dispersal would only cause temporary impacts due to increases in suspended sediment. Affects to the ecology of the Hiwassee River portion of Chickamauga Lake would be insignificant due to the high bedload already present in this watershed. This would result in temporary, minor cumulative impacts to aquatic ecology if activities related to RFFAs presented in Table 3-14 with potential effects to aquatic ecological resources overlap with the Saulpaw Mill Dam project.

3.10 Threatened and Endangered Species

3.10.1 Affected Environment

Some species of plants and animals are protected under the Endangered Species Act (ESA) and related state laws. The ESA was implemented to provide a framework to conserve and protect threatened and endangered species and their habitats. This act authorized the determination and listing of species as endangered and threatened; prohibited unauthorized taking, possession, sale, and transport of endangered species, provided authority to acquire land for the conservation of listed species, and authorized civil and criminal penalties for violating the ESA (among other authorizations). An endangered species is defined by the ESA as any species in danger of extinction throughout all or a sizable portion of its range. Likewise, a threatened species is likely to become endangered within the foreseeable future throughout all or a significant part of its range. Critical habitats, essential to the conservation of listed species, also can be designated under the ESA. The ESA establishes programs to conserve and recover endangered and threatened species and makes their conservation a priority for federal agencies. Under Section 7 of the ESA, federal agencies are required to consider the potential effects of their proposed action on endangered and threatened species and critical habitats. If the proposed action has the potential to affect these resources, the federal agency is required to consult with the USFWS. Fish and game species are also protected by the hunting, fish, and trapping regulations enforced by the TWRA and the USFWS.

The TVA Regional Natural Heritage Database and USFWS IPaC list (USFWS 2024) were reviewed in September 2023 and June 2024, respectively, to identify federally and state-protected species that could potentially occur on the Project Site.

3.10.1.1 Plants

Two state-protected species and one federally listed plant species were reported on the species lists from within five miles of the Project Site (Table 3-2). None of the protected species are likely to occur on the Project Site as no suitable habitat is present, such as limestone bluffs (spreading false-foxglove), wetland bogs (white fringeless orchid), or low, moist open pinelands, savannas, or prairies (Maryland milkwort) (Nature Serve 2023; USGS 2023). No designated critical habitat for plants occurs on or in the vicinity of the Project Site.

Table 3-2. Plant species of conservation concern previously reported from within five miles of the Project Site.[1]

Common Name	Scientific Name	Federal Status[2]	State Status[2]	State Rank[3]
Plants				
Spreading false-foxglove	*Aureolaria patula*	–	SPCO	S3
White fringeless orchid	*Platanthera integrilabia*	THR	END	S2S3
Maryland milkwort	*Polygala mariana*	–	SPCO	S1

[1] Source: TVA and Tennessee Natural Heritage Database, queried September 2022, and USFWS (2024).
[2] Status Codes: END = Listed as Endangered; SPCO = Listed Special Concern; THR = Listed Threatened
[3] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain.

3.10.1.2 Terrestrial Animals

The databases mentioned above indicate the potential presence in the vicinity of the Project Site of seven federally listed terrestrial animals and an additional species, the osprey, considered vulnerable in Tennessee (Table 3-3) The osprey is the only one of these species reported within three miles of the Project Site.

Table 3-3. Federally listed terrestrial animal species reported from McMinn County and other species of conservation concern documented within three miles of the Project Site.[1]

Common Name	Scientific Name	Status[2]	
		Federal	State[3] (Rank[3])
Insects			
Monarch butterfly[4]	*Danaus plexippus*	C	-(S1)
Rusty-patched bumble bee[5]	*Bombus affinis*	E	-(S1)
Birds			
Osprey	*Pandion haliaetus*	-	-(S3)
Whooping crane[6,7]	*Grus americana*	E	EXPN (SX)
Mammals			
Gray bat[7]	*Myotis grisescens*	E	E(S2)
Indiana bat[8]	*Myotis sodalis*	E	E(S1)
Northern long-eared bat[7]	*Myotis septentrionalis*	E	T(S1S2)
Tricolored bat[7]	*Perimyotis subflavus*	PE	T(S2S3)

[1]Source: TVA Regional Natural Heritage Database, extracted 9/21/2023, re-extracted June 28, 2024, and USFWS (2024).
[2]Status Codes: C = Candidate species; E = Endangered; EXPN = Experimental population; PE = Proposed Endangered.
[3]State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; SX = Presumed Extirpated.
[4]Historically this species has not been tracked by state or federal heritage programs.
[5]Species known from McMinn County but not from within three miles of the Project footprint.
[6]Rare migrant and winter resident in middle and east Tennessee (TWRA 2023).
[7]Species that has not been documented within three miles of the project footprint or within McMinn County; USFWS (2024) indicates this species could occur within the Project Site.
[8]Species listed under ESA whose range includes the project footprint and thus has the potential to occur in the area.

3.10.1.2.1 Insects

The monarch butterfly is a highly migratory species, with eastern U.S. populations overwintering in Mexico. Monarch populations typically return to the eastern U.S. in April (Davis and Howard 2005). Summer breeding habitat requires milkweed plant species, on which adults exclusively lay eggs for larvae to develop and feed on. Adults drink nectar from other blooming wildflowers when milkweeds are not in bloom (Nature Serve 2022). The early successional herbaceous plants in the Project Site may contain some flowering plants that could provide a small amount of suitable foraging habitat for adult monarchs. Milkweed plants were not observed here during terrestrial zoology field reviews on October 19, 2022. Though this species has not been historically tracked by state or federal heritage programs, USFWS (2024) indicates its potential occurrence in the project area.

The rusty-patched bumblebee inhabits grasslands, prairies, woodlands, marshes, agricultural landscapes, and residential parks and gardens. It requires both diverse, abundant flowers from April to September and undisturbed nesting sites nearby to have sufficient food and overwintering sites for queens. It often builds nests in abandoned, underground rodent cavities or large clumps of grass (USFWS 2016). The only report of the rusty-patched bumblebee in McMinn County is approximately 14 miles from the Project Site. This 1966 record is possibly historical due to its age. Suitable habitat for this species is not present on the Project Site.

3.10.1.2.2 Birds

Ospreys occupy riparian habitat alongside bodies of water, such as rivers, lakes, and reservoirs. They build nests of sticks on a variety of man-made structures (e.g., transmission line structures, lighting towers) near water (Nicholson 1997). The closest known record of the osprey is approximately 2.9 miles from the Project Site. No additional nests were observed by TVA Terrestrial Zoologists during field surveys on October 19, 2022. Suitable habitat for ospreys exists in areas adjacent to the Project Site.

Whooping cranes migrate through Tennessee twice per year in small flocks, often in association with sandhill cranes. During this migration they stop to feed and rest in wetland complexes, marshes, ponds, lakes, rivers, and agricultural fields (USFWS 2023). The Project Site does not provide suitable habitat for whooping cranes.

3.10.1.2.3 Mammals

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (USFWS 1982, Tuttle 1976). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (Tuttle 1976). No gray bat records are known from McMinn County. No caves are known within three miles of the Project Site. Field reviews of the bridges immediately adjacent to the site, observed Possible bat guano was observed under the middle of the nearby Hiwassee Road bridge on October 19, 2022. The amount of guano visible was relatively small and could not be confirmed due to its inaccessible location. No bats themselves could be seen or heard. Foraging habitat for gray bat is available over Oostanaula Creek and the Hiwassee River.

Indiana bats hibernate in caves in winter and use areas around them for swarming (mating) in the fall and staging in the spring, prior to migration back to summer habitat. During the summer, Indiana bats roost under the exfoliating bark of dead snags and living trees in mature forests with an open understory and a nearby source of water (USFWS 2007b, Kurta et al. 2002). Indiana bats change roost trees frequently throughout the season, while still maintaining site fidelity, returning to the same summer roosting areas in subsequent

years (USFWS 2007b). Foraging occurs along riparian areas and along the tops of trees, forested edges, and tree lines. There are no records of Indiana bats in McMinn County or within 10 miles of the Project Site. The closest known record is approximately 30 miles away in Cherokee National Forest. The USFWS has determined that Indiana bats are not likely to occur in the Project Site (ArcGIS 2023, USFWS 2024).

Northern long-eared bats overwinter predominantly in caves, abandoned mines, and cave-like structures. During the fall and spring, they utilize entrances of caves and the surrounding forested areas for swarming and staging. In the summer, northern long-eared bats roost individually or in colonies beneath exfoliating bark or in crevices of both live and dead trees (typically greater than 3 inches in diameter). Roost selection by northern long-eared bat is similar to that of Indiana bat, however, northern long-eared bats are thought to be more opportunistic in roost site selection. This species also roosts in abandoned buildings and under bridges. 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 2014). There are no records of northern long-eared bats in McMinn County or within 5 miles of the Project Site. The closest record is approximately 11.3 miles away in Polk County, Tennessee. Nonetheless, the USFWS has determined that northern long-eared bat is likely to occur on the Project Site (USFWS 2024).

Tricolored bats are generally solitary or found in small groups. They are associated with forested landscapes where they forage along forest edges and along waterways. Summer roosts are primarily in live and dead leaf clusters of live or recently dead deciduous hardwood trees. However, this species has also been documented roosting in pines, cedars, and artificial structures such as barns, bridges, bunkers, and residential roofs during summer months. In winter, this species is most commonly found in caves and mines but may also use culverts, abandoned wells, tree cavities, and rock shelters (USFWS 2021). There are no records of tricolored bats in McMinn County or within 5 miles of the Project Site. The closest record is approximately 11.3 miles away in Polk County. The USFWS has determined that the tricolored bat is likely to occur on the Project Site (USFWS 2024).

No caves or suitable winter roosting structures for the federally listed bats exist on the Project Site. Based on the Range-Wide Indiana Bat and Northern Long-eared Bat Survey Guidelines (USFWS 2022), TVA has determined that the 0.02 acre of trees that would be removed may provide suitable summer roosting habitat for Indiana bat, northern long-eared bat, and tricolored bat. The vegetated shorelines along Oostanaula Creek and the Hiwassee River provide suitable foraging habitat for the three bat species as well.

3.10.1.3 Aquatic Species

A query of the TVA Natural Heritage Database and USFWS (2024) indicated two federally listed species (one mussel and one fish) as occurring within the 10-digit HUC watershed adjacent to the proposed Project Site (Table 3-4). Neither of these species occur within Oostanaula Creek itself. They are restricted to the unimpounded mainstem Hiwassee River which begins about 10 miles upstream of Oostanaula Creek. Extant populations of snail darter, recently removed from the endangered species list, have been observed in the Hiwassee, but the reach of the Hiwassee near the Oostanaula Creek confluence is not considered optimal habitat for this species, and snail darters were not observed in recent surveys efforts (J. Simmons, Tennessee Valley Authority, personal communication). An experimental population of oyster mussels was introduced to the unimpounded section of the Hiwassee River in 2014, but it has yet to be determined if this population is sustainable.

The Cumberland bean has been documented in the Hiwassee River upstream of Reliance, Tennessee in recent survey efforts (Ahlstedt et al. 2016), but it is not known from the reach of the Hiwassee near the confluence with Oostanaula Creek. The confluence of Oostanaula Creek and the Hiwassee River is heavily influenced by the impounded conditions of Chickamauga Reservoir, which reduces aquatic habitat and constrains the ecology of this portion of river.

Table 3-4. Federally and state-listed aquatic animal species within the Oostanaula Creek (0602000211) and Chickamauga Lake-Hiwassee River (0602000214) 10-digit HUC watersheds.[1]

Common Name	Scientific Name	State Rank[2]	State Status[3]	Element Rank[4]	Federal Status[5]
Fishes					
Snail darter	*Percina tanasi*	S2S3	T	E	DL
Highfin carpsucker	*Carpiodes velifer*	S2S3	D	E	
Tangerine darter	*Percina aurantiaca*	S3	D	H?	
Mussels					
Oyster mussel	*Epioblasma capsaeformis*	S1	E	E	E, XN
Cumberland bean	*Vilosa trabilis*	-	-	-	E
Crayfish					
Conasauga blue burrower	*Cambarus cymatilis*	S1	E	E	
Cocoa crayfish	*Cambarus stockeri*	S1S2	T	E	

[1]Source: TVA Natural Heritage database and USFWS (2024)
[2]State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable
[3] State Status Codes: D = Deemed in need of conservation; E = Endangered; T = Threatened
[4] Element (=population) Rank; E = Extant record ≤25 years old; H = Historical record >25 years old; ? = Uncertain status
[5] Federal Status Code: E = Listed Endangered; DL = Delisted; XN = Experimental Population, Non-Essential

3.10.2 Environmental Consequences

3.10.2.1 Alternative A

3.10.2.1.1 Plants

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. The proposed Project Site does not currently support state- or federally listed plant species due to lack of habitat for those species. Therefore, no impacts would occur to threatened or endangered plant species.

3.10.2.1.2 Terrestrial Animals

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. Soil, vegetation, and stone blocks would remain in their current state, and tree clearing and earth moving would not occur in association with this project. Threatened and endangered wildlife and their habitats would not be affected under Alternative A.

3.10.2.1.3 Aquatic Species

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state and the dam would remain a barrier to

upstream fish and mussel dispersal or as a spawning refuge for more lentic species. Oostanaula Creek in its current state does not support aquatic threatened and endangered species. Therefore, no impacts to aquatic threatened and endangered species would occur.

3.10.2.2 Alternative B

3.10.2.2.1 Plants

The proposed Project Site does not support state- or federally listed plant species due to lack of habitat for those species; therefore, the proposed action would not affect state or federally listed threatened or endangered plant species and would not result in appreciable impacts to the terrestrial ecology of the region. No cumulative effects would occur to state and federally threatened and endangered plant species.

3.10.2.2.2 Terrestrial Animals

Insects

No suitable habitat exists for the rusty-patched bumble bee. This species is not present and would not be impacted by proposed actions.

A small amount of monarch butterfly foraging habitat exists along the road, creek, and river where non-native and native flowering herbaceous plants occur. This habitat could be impacted by proposed actions. No milkweed exists in the action area. Alternative B would have negligible adverse effects on the monarch butterfly and not jeopardize its continued existence. No cumulative effects to monarch butterfly would occur.

Birds

Due to the distance from known records to the Project Site and the lack of additional nests observed during site visits, no osprey nests would be impacted by the Proposed Action and no effects to osprey would occur. Whooping crane habitat does not occur on the Project Site and this bird would not be affected by the proposed dam removal.

Mammals

Four federally listed or proposed bat species have the potential to use the Project Site: gray bat, Indiana bat, northern long-eared bat, and tricolored bat given the range of these species. No caves or other hibernacula for the four bats exist in the Project Site or are known within three miles of the Project Site. Approximately 0.02 acres of forest, which offers suitable summer roosting habitat for Indiana bat, northern long-eared bat, and tricolored bat would be removed. Tree removal would occur in winter (between November 15 to March 30) when bats are hibernating in caves. The USFWS has determined that Indiana bat is not likely to occur on the Project Site (ArcGIS 2023) but gray bat, tricolored bat, and northern long-eared bat are likely to occur at the Project Site (ArcGIS 2023, IUSFWS 2024). Foraging habitats for all four bat species exist in and around the action area over creeks, rivers, and forested areas.

While no direct impacts would occur to the Hiwassee Road Bridge over Oostanaula Creek, there is some evidence that a small number of bats may roost under this bridge during warmer months. The species of bat using the bridge is unknown. This bridge is well traveled, with a railroad track immediately adjacent, and a high volume of loud boat traffic on the immediately adjacent Hiwassee River (several loud boats passed during field reviews). Thus, bats selecting this bridge for roosting would already be acclimated to a considerable amount of disturbance. Proposed dam removal actions would occur in the late summer/early fall when bats would only be expected to use the bridge intermittently and in

small numbers, and all young of the year would be volant. Dam removal activities are expected to take seven days, therefore the likelihood that bats would be roosting in the bridge at the time of dam removal is low. If the timing of the proposed actions shifts to earlier months (May-early August) when maternity roost could be active, depending on the species of bat present, additional surveys of the bridge (e.g., emergence counts or acoustic monitoring) would be performed to determine what species are using the bridge. Additional coordination with the appropriate state and federal agencies would occur as needed to ensure compliance.

A number of activities associated with the proposed project, including tree removal, were addressed in TVA's programmatic consultation with the U.S. Fish and Wildlife Service on routine actions and federally listed bats in accordance with ESA Section 7(a)(2) and completed in April 2018 and updated in May 2023. For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures are identified on page 5 of the TVA Bat Strategy Project Screening Form (provided in Appendix B) and would be implemented as part of the proposed Project. Considering the scope of the proposed Project actions, distance to known bat records, implementation of BMPs, USFWS occupancy maps, and adherence to conservation measures including winter tree removal and additional bridge survey if needed, the proposed actions may affect but are not likely to adversely affect gray bat, Indiana bat, or northern long-eared bat. Tricolored bat is also presumed present (based on USFWS models) and suitable habitat summer roosting habitat would also be removed. As of August 2024, this species has not been listed under the ESA and is evaluated as a proposed endangered species. The proposed action would not jeopardize the continued existence of tricolored bat. The proposed action would not cumulatively affect federally protected bat species.

3.10.2.2.3 Aquatic Species

The confluence of Oostanaula Creek and the Lower Hiwassee River is heavily influenced by the impounded conditions of Chickamauga Lake, which reduces aquatic habitat and constrains the ecology of this portion of river. The recently de-listed snail darter is the only aquatic federal species of concern near the Project Site. No effects to threatened and endangered aquatic species are anticipated to occur as a result of the proposed dam removal. Thus, no cumulative effects would occur to aquatic threatened and endangered species.

3.11 Managed and Natural Areas, Parks, and Recreation

3.11.1 Affected Environment

Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, USDA, U.S. Forest Service, State of Tennessee) to protect and maintain certain ecological and/or recreational features. Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas; recreational areas; greenways; trails; Nationwide Rivers Inventory streams; and wild and scenic rivers. Ecologically significant sites are either tracts of privately owned land that are recognized by resource biologists as having significant environmental resources or identified tracts on TVA lands that are ecologically significant but not specifically managed by TVA's Natural Areas program.

The Project Site is part of a 51-acre tract managed by TVA and zoned for industrial use (see Section 3.1). Aside from the railroad, no industrial facilities occur in the immediate

vicinity and the site is heavily used for informal recreational activities including bank fishing, swimming, and picnicking, as well as an access point for kayaking, paddling, and canoeing. Access from adjacent Hiwassee Road is by unimproved roads on each side of Oostanaula Creek that extend under the railroad bridge towards the Hiwassee River. Currently, there is potential for unsafe conditions to exist for informal recreation due to water flowing over the dam. There are no developed recreational facilities on the site and TVA's management of the site is limited to occasional trash removal.

The adjacent Hiwassee River is part of the Hiwassee River Blueway (Figure 3-4), a 55-mile stretch of the river between the Apalachia Dam Powerhouse in Cherokee National Forest and Blythe Ferry at the junction of the Hiwassee and Tennessee rivers. The Blueway is known for its scenic beauty and range of outdoor recreational offerings, from whitewater paddling and trout fishing in the upper and middle sections of the river to motorized water recreation, bass fishing and bird watching in the lower section. The Hiwassee River Blueway hosts multiple fishing events, festivals, and boating events along the river throughout the year (Hiwassee River Blueway 2023). Two Blueway access points are within a mile of the Project Site: Calhoun Boat Ramp 0.25 miles downstream and Charleston Boat Ramp 0.7 miles downstream. Both access points have a concrete boat ramp and gravel parking lot.

Hoyt Berry Municipal Park is located 0.7 miles southwest of the Project Site. Owned by the City of Charleston, the park features a large picnic pavilion with restrooms, an outdoor stage, ballfield, gazebo, fitness area, children's playground, basketball court and picnic tables. The park is the site of the annual International Cowpea Festival which brings thousands to the park each September, and the park hosts numerous events throughout the year (City of Charleston 2022).

Hiwassee Meadowlands Park, 0.7 miles northwest of the Project Site, is owned by the Town of Calhoun. It features walking trails, a softball field, a playground, picnic areas, and an outdoor pavilion that seats 250. Meadowlands is also historically significant, as it lies adjacent to a section of the original Trail of Tears and has a Tennessee Civil War Trails marker denoting the "Destruction of the Meeting House." The park is the site of various festivals and events and is well known for its annual Christmas display of lights. The portion of the park proposed for stockpiling of dam blocks consists of a small green space between Highway 163, and the softball field area of the park. The proposed temporary stockpile area is adjacent to a restroom and bleacher section of the softball field (City of Calhoun 2022).

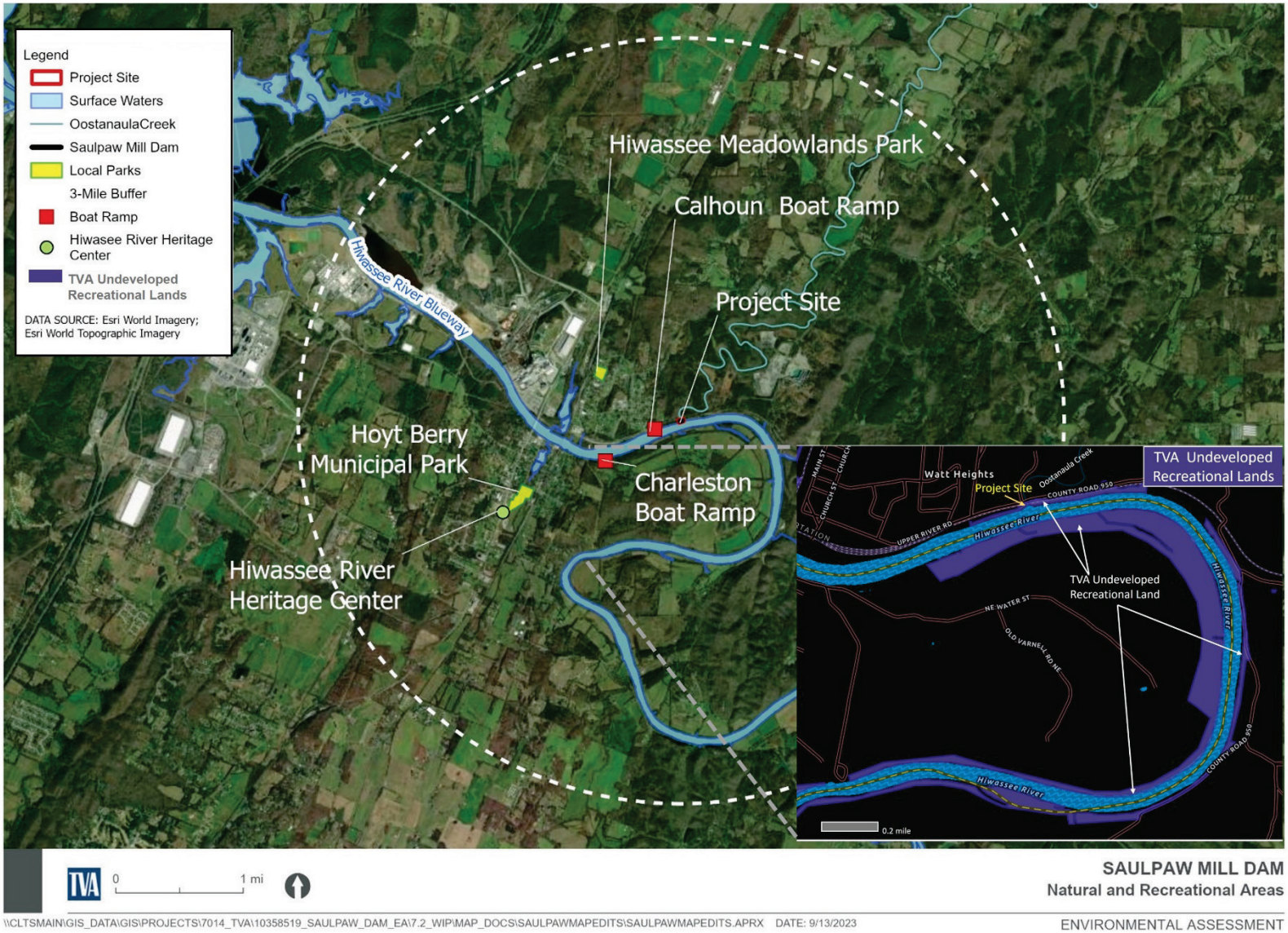

Figure 3-4. Recreational and Natural Areas Near the Project Site

Hiwassee River Heritage Center is located 1.7 miles southwest of Saulpaw Mill Dam on Hiwassee Street, which would serve as an access road during the proposed dam removal. Owned and operated by Charleston-Calhoun-Hiwassee Historical Society, the center includes a museum that highlights surrounding historical areas such as Fort Cass military camp, Cherokee Nation sites, and the Trail of Tears. Hiwassee River Heritage Center is dedicated to preserving the history of Hiwassee River and historical communities in the cities of Calhoun and Charleston (Hiwassee River Heritage Center 2022).

3.11.2 Environmental Consequences

3.11.2.1.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. No impacts on recreational areas would be anticipated; however, the potentially unsafe conditions created as a result of water flowing over the Saulpaw Mill Dam would remain unchanged. Boating and fishing on the Hiwassee River would likely remain unchanged.

3.11.2.1.2 Alternative B

The proposed action under Alternative B, removal of Saulpaw Mill Dam, would not affect natural or managed areas. The removal of Saulpaw Mill Dam would have minor, temporary impacts on recreation at the Project Site, as recreational users would be restricted from this area during construction activities associated with the dam removal.

Due to the nature of the project, and through the use of BMPs and coordination with adjacent recreational areas, minor, temporary impacts to these recreational areas are expected. However, removal of the dam would result in safer conditions and improved fish passage into Oostanaula Creek, thus providing moderate, long-term beneficial effects to recreational users and to aquatic resources. The change in the aquatic environment may change the density or diversity of the fish community present in this area which could result in improved recreational angling in the local area (see Section 3.9). Once dam removal activities are completed, there would be little effect on other recreational uses of the site.

Given the scope of this alternative and the distance from nearby natural areas and recreation, cumulative impacts due to the Project are expected to be minor and temporary, and beneficial for recreation in the long-term due to safer dam conditions and improved fish passage.

3.12 Air Quality

3.12.1 Affected Environment

Air quality is measured by the concentration of various pollutants in the atmosphere, typically expressed in units of parts per million (ppm) or in units of micrograms per cubic meter (mg/m^3). Air quality is not only determined by the types and quantities of atmospheric pollutants but also by surface topography, size of the air basin, and prevailing meteorological conditions. Through passage of the Clean Air Act of 1963 (CAA) and its amendments, Congress has mandated the protection and enhancement of our nation's air quality. The USEPA has established both primary and secondary National Ambient Air Quality Standards (NAAQS) for certain pollutants under the provisions of the CAA. Primary standards define levels of air quality necessary to protect public health with an adequate margin of safety. Secondary standards define levels of air quality necessary to protect the public welfare (i.e., soils, vegetation, and wildlife) from any known or anticipated adverse effects from a criteria air pollutant. NAAQS currently are established for six air pollutants

(known as “criteria air pollutants”), including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), lead, and particulate matter equal to or less than 10 microns in aerodynamic diameter (PM_{10}). Although O_3 is considered a criteria air pollutant and is measurable in the atmosphere, it is not often considered as an air pollutant when calculating emissions because O_3 typically is not emitted directly from most emission sources. O_3 is formed in the atmosphere from its precursors, NO_2 and volatile organic compounds (VOCs), which are directly emitted from various emission sources. For this reason, NO_2 and VOCs are commonly reported in an air emissions inventory instead of O_3.

The CAA requires each state to adopt regulatory requirements necessary to attain the NAAQS. The CAA also allows states to adopt air quality standards that are more stringent than the federal standards. The USEPA classifies the air quality within an air quality control region (AQCR) according to whether or not the concentrations of criteria air pollutants in the atmosphere exceed primary or secondary NAAQS. All areas within each AQCR are assigned a designation of “attainment” or “non-attainment” for each criteria air pollutant. An attainment designation indicates that air quality within specific areas of an AQCR is as good as, or better than, NAAQS for individual criteria air pollutants or that the air quality is unclassified. A designation of “unclassified” indicates that air quality within an area cannot be classified and therefore is treated as attainment. A non-attainment designation indicates that the concentration of an individual criteria air pollutant at a specific location exceeds primary or secondary NAAQS.

McMinn County is designated an “attainment” area for all criteria air pollutants (USEPA 2023d). Within the project area there may be occasional vehicle emissions due to automobiles, watercraft, and trains. These emissions are intermittent and temporary.

3.12.2 Environmental Consequences

3.12.2.1 Alternative A

Under the No Action Alternative, the Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. There would be no temporary or permanent direct or indirect effects to local or regional air quality because there would be no immediate changes in the local area (i.e., no demolition or construction activities would occur due to TVA action).

3.12.2.2 Alternative B

The primary mechanisms for causing potential effects to local air quality considered in this assessment are the demolition and removal of the Saulpaw Mill Dam and associated temporary construction-related activities. Alternative B involves grading, demolition, material/structure removal and other construction activities that could create fugitive dust emissions during removal of the Saulpaw Mill Dam. Fugitive dust is commonly measured by the size of particulate matter. A common unit of measure for dust is PM_{10} . Vehicular traffic over paved and unpaved roads at the site would also result in minor emission of fugitive dust during the above construction activities. Construction materials stored in outdoor piles that are exposed to wind erosion is another source of fugitive dust. Backfilling and grading activities associated with Alternative B would create fugitive dust due to the movement of construction materials and the trucks and other mobile equipment performing these activities.

Theoretical drift distance, as a function of particle diameter and mean wind speed, has been computed for fugitive dust emissions. Results indicate that, for a typical mean wind speed of 10 mph, particles larger than about 100 microns (µm) are likely to settle out within

20 to 30 ft from the edge of the point of emission. Particles that are 30 to 100 µm in diameter are likely to undergo slower settling. These particles, depending upon the extent of atmospheric turbulence, are likely to settle within a few hundred feet of the point of emission. Smaller particles, particularly PM_{10}, and $PM_{2.5}$ (particulate matter less than 2.5 microns in diameter, have much slower settling velocities and are much more likely to have their settling rate reduced by atmospheric turbulence (USEPA 1995).

Fugitive emissions from demolition activities typically produce particles that are primarily deposited on the property where the structures being demolished are located. Based on the large size of the fugitive particulate expected to be generated by the removal of the Saulpaw Mill Dam, this is likely the case. The potential drift distance of particles is governed by the release point of the particle, the settling velocity of the particle, and the degree of atmospheric turbulence. The vast majority of fugitive dust emissions would be deposited within the construction site boundaries. The remaining fraction of the dust would be subject to transport beyond the property boundary.

In addition to fugitive dust created by the construction activities, mobile equipment used for these activities would exhaust into the atmosphere combustion-related emissions of nitrogen oxides (NO_x), CO, VOC, SO_2, PM_{10}, $PM_{2.5}$, and carbon dioxide (CO_2). Exhaust from internal combustion engines used to power trucks and demolition equipment can affect local air quality, especially if the engines are not maintained in proper working condition.

Dust control measures, as regulated under TDEC Air Pollution Control Rule 1200 3-8, would be implemented during demolition and other construction activities to prevent the spread of dust, dirt, and debris. These methods could include wetting equipment and demolition areas, covering waste or debris piles, and using covered containers to haul waste and debris. Wet suppression can reduce fugitive dust emissions from roadways and unpaved areas by as much as 95 percent. With these measures in place, potential effects to local air quality from the proposed construction activities are expected to be minor and temporary.

After completion of the dam removal, all equipment and personnel would be demobilized from the site. The areas disturbed during the removal of the dam would be stabilized with permanent vegetation, which helps to minimize fugitive dust from bare soil in the long term. Alternative B would not cause any permanent direct or indirect changes to local air quality. The temporary impacts to local air quality are expected to be limited to the immediate area of construction activities. Most of the fugitive dust generated is expected to remain on-site and not impact surrounding areas, therefore no temporary cumulative impacts are anticipated. The Proposed Action would not result in any new operational air emissions sources at the Saulpaw Mill Dam after construction is complete; therefore, cumulative impacts are not anticipated.

3.13 Greenhouse Gases and Climate Change

3.13.1 Affected Environment

The EPA defines climate change as “any significant change in the measures of climate lasting for an extended period of time.” In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among others, which occur over several decades or longer. These changes are caused by a number of natural factors as well as anthropogenic (i.e., human-related) activities (EPA 2022b).

Climate change is primarily a function of excessive CO_2 in the atmosphere. CO_2 is the primary greenhouse gas (GHG) emitted through human activities. Activities associated with the proposed action that produce CO_2 are primarily related to emissions from fossil-fuel-powered equipment (e.g., bulldozers, loaders, haulers, trucks, generators) used during the proposed activities. Forested areas that absorb and store CO_2 from the atmosphere via a process known as carbon sequestration help to reduce levels of CO_2 in the atmosphere. Additional GHGs that contribute to climate change include hydrofluorocarbons used in refrigeration equipment; sulfur hexafluoride used as a gaseous dielectric medium for high-voltage (1-kilovolt and above) circuit breakers, switchgears, and other electrical equipment; and methane. These gases can be released to the atmosphere through seal leaks, especially from older equipment, as well as during equipment manufacturing, installation, servicing, and disposal (EPA 2022d)

On January 20, 2021, President Joe Biden issued Executive Order 13990, “Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis.” EO 13990 stated the importance of federal agencies capturing “the full cost of [GHG] emissions as accurately as possible, including by taking global damages into account.” EO 13990 established an Interagency Working Group on the Social Cost of Greenhouse Gases. This working group was tasked with publishing and advising on the social costs of carbon, nitrous oxide, and methane. These costs are estimates of the monetized damages associated with incremental increases in GHG emissions (EO 13990).

The Council on Environmental Quality (CEQ) issued a guidance memorandum to assist Federal agencies in considering the effects of GHG emissions when evaluating proposed Federal actions in accordance with NEPA. This guidance recommends that agencies quantify GHG emissions when possible, and if data is not available, to include a qualitative analysis in the NEPA document. The extent of the GHG analysis should align with the quantity of projected emissions (CEQ 2023). In this specific project, a detailed quantification of social costs of GHGs is not necessary given the limited GHG emissions associated with the project.

3.13.2 Environmental Consequences

3.13.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. There would be no fuel-burning construction or demolition equipment used at the Project Site under this Alternative. Therefore, Alternative A would have no impact on GHG emissions or climate change. Climate change has been linked to extreme weather events and increased precipitation. These types of events could increase the risk of damage to, or failure of, the Saulpaw Mill Dam over time. Under the No Action Alternative, TVA would continue to manage and maintain the dam and would make any necessary repairs, therefore, impacts of climate change on the dam would be negligible to minor.

3.13.2.2 Alternative B

Alternative B includes the use of mobile equipment used for demolition and other construction activities. This equipment would generate combustion related GHG emissions (mainly CO_2, CH_4 and N_2O). Therefore, impacts to the local, regional, and global climate are expected to be minor and temporary under Alternative B. As stated for Alternative A, climate change has been linked to extreme weather events and increased precipitation. As Alternative B includes the removal of the Saulpaw Mill Dam, climate change would have no

impact on the dam. The removal of the dam would not affect climate change. Cumulative impacts are not anticipated.

3.14 Noise and Vibration

3.14.1 Affected Environment

Noise is unwanted or unwelcome sound that is usually caused by human activity and added to the natural acoustic setting of a locale. It is further defined as sound that disrupts normal activities and diminishes the quality of the environment. Community response to noise is dependent on the intensity of the sound source, its duration, the proximity of noise-sensitive land uses, and the time of day the noise occurs.

Sound is measured in units of decibels (dB) on a logarithmic scale. Because not all noise frequencies are perceptible to the human ear, A-scale weighting decibels (dBA), which filter out sound in frequencies above and below human hearing, are typically used in noise assessments. A noise level change of three dBA or less is barely perceptible to average human hearing, while a 5 dBA change in noise level is clearly noticeable. The noise level associated with a 10 dBA change is perceived as being twice as loud; whereas the noise level associated with a 20 dBA change is perceived to be four times as loud and may represent a “dramatic change” in loudness.

The day-night sound level (L_{dn}) is the 24-hour equivalent sound level, which incorporates a 10 dBA correction penalty for the hours between 10 p.m. and 7 a.m. to account for the increased sensitivity of people to sounds that occur at night. Typical background day-night noise levels for rural areas are anticipated to range between an L_{dn} of 35 and 50 dB, whereas higher-density residential and urban areas background noise levels range from 43 dB to 72 dB (USEPA 1974). Background noise levels greater than 65 dBA can interfere with normal conversation, watching television, using a telephone, listening to the radio, and sleeping. Common indoor and outdoor noise levels from various noise sources are listed in Table 3-5.

Table 3-5. Common Indoor and Outdoor Noise Levels

Common Outdoor Noises	Sound Pressure Levels (dB)	Common Indoor Noises
	110	Rock Band at 5 meters (16.4 feet)
Jet Flyover at 300 meters (984.3 feet)		
	100	Inside Subway Train (New York)
Gas Lawn Mower at 1 meter (3.3 feet)		
	90	Food Blender at 1 meter (3.3 feet)
Diesel Truck at 15 meters (49.2 feet)		Garbage Disposal at 1 meter (3.3 feet)
	80	Shouting at 1 meter (3.3 feet)
Gas Lawn Mower at 30 meters (98.4 feet)	70	Vacuum Cleaner at 3 meters (9.8 feet)
Commercial Area		Normal Speech at 1 meter (3.3 feet)
	60	Large Business Office
	50	Dishwasher Next Room
Quiet Urban Daytime		
	40	Small Theater, Large Conference Room
Quiet Urban Nighttime		Library
Quiet Suburban Nighttime		
	30	Bedroom at Night
Quiet Rural Nighttime		Concert Hall (Background)
	20	Broadcast and Recording Studio
	10	
		Threshold of Hearing
	0	

Source: American Association of State Highway and Transportation Officials (AASHTO) 1993

Construction and demolition activities, including the operation of heavy machinery and construction-related vehicles, can create ground vibration. Community response to ground vibration is dependent on the intensity of the vibration source, its duration, distance between the source and receptor, and whether the vibration is continuous or transient. Continuous vibration sources include most heavy machinery and construction-related vehicles, whereas transient vibration sources include single isolated events such as blasting. Ground vibrations can cause annoyance to people who live or work near sources of vibration. Additionally, if the vibration amplitudes are high enough, there is the possibility of physical and cosmetic damage to structures.

There are no buildings or residential structures located within 500 feet of the Project Site; the nearest structure is an agricultural building located 0.12 mile to the east, across Hiwassee Road.

3.14.1.1 Noise

Ambient noise surrounding the Saulpaw Mill Dam consists mainly of water flowing over the dam; vehicle traffic; boat traffic; trains, agricultural sounds, such as noises from farm machinery; and natural sounds, such as from wind and wildlife. Generally, noise levels in these types of areas range from 45 to 55 dBA. A CSX rail line extends east-west through the Project Site, approximately 30 feet north of the Saulpaw Mill Dam. Noise from freight trains traveling at 20 miles per hour measures around 88 dBA at a distance of 50 feet (Southwest LRT 2015). Train horns must not exceed 110 dB to be in compliance with Federal Railroad Administration (FRA) requirements (FRA 2020). Overall, the area surrounding the Saulpaw Mill Dam is primarily rural residential, agricultural, suburban, and undeveloped land. The nearest noise receptors are an agricultural building 0.12 mile to the east and a private residence 0.18 mile to the northeast, across Hiwassee Road. Hiwassee Meadowlands Park, where dam blocks would be temporarily stockpiled, is also a sensitive noise receptor.

3.14.1.2 Vibration

Ground vibration is measured in terms of peak particle velocity (PPV) in units of inches per second (in/sec). Continuous and transient vibration criteria for structural damage and human annoyance are listed in Table 3.14-2 and Table 3.14-3, respectively. The threshold at which there is a risk to older residential structures is 0.3 in/sec PPV from continuous vibrations and 0.5 in/sec PPV from transient vibrations. Vibration levels would become distinctly perceptible at 0.04 in/sec PPV from continuous vibrations and 0.25 in/sec PPV from transient vibrations (Caltrans 2020).

Table 3-6. Vibration Criteria for Structural Damage

Structure and Condition	Maximum Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structures	0.5	0.3
Newer residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5

Source: Caltrans 2020

Table 3-7. Vibration Criteria for Human Annoyance

Human Response	Maximum Vibration Level (in/sec PPV)	
	Transient Sources	Continuous/Frequent Intermittent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.1
Severe	2.0	0.4

Source: Caltrans 2020

Table 3.14-4 presents typical levels of ground-borne vibration at 25 feet for a variety of common construction equipment. Ground vibration generated by most construction equipment would be approximately 0.2 in/sec PPV or less at 25 feet, decreasing to a distinctly perceptible 0.04 in/sec PPV at 125 feet. For typical pile driving activities, ground vibration would decrease to a distinctly perceptible 0.04 in/sec PPV at 400 feet (Federal Transit Administration [FTA] 2006). For additional reference, vibration generated by train is comparable to the vibratory roller at approximately 0.2 in/sec; the CSX rail line running through the Project Site would be expected to be around this range on a regular basis.

Table 3-8. Vibration Source Levels for Construction Equipment

Equipment	Maximum Vibration Level (in/sec PPV)
Pile driver	0.5
Vibratory roller	0.2
Train	0.2
Large bulldozer	0.09
Caisson drilling	0.09
Loaded trucks	0.08
Jackhammer	0.04
Small bulldozer	<0.01

Sources: FTA 2006; Caltrans 2020

3.14.2 Environmental Consequences

3.14.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. Therefore, no project-related impacts on the ambient sound environment would occur.

3.14.2.2 Alternative B

Under Alternative B, the Saulpaw Mill Dam would be removed. Subject to weather, construction activities would take approximately seven days to complete using a crew of six workers. Work would generally occur during daylight hours. During construction, noise would be generated by haul trucks and heavy equipment such as a backhoe. Typical noise levels from construction equipment expected to be used during dam removal are 85 dBA or less at a distance of 50 feet (USDOT 2006). These noise levels would typically diminish with distance from the dam at a rate of approximately 6 dBA per each doubling of distance. Based on straight line noise attenuation, it is estimated that noise levels from these sources would attenuate to approximately 60 dBA or less at the nearest residences along Little

Mountain Acres Road (approximately 860 feet or further from the Project Site). These noise levels are below the U.S. Department of Housing and Urban Development (HUD) guideline of 65 dBA, but greater than the USEPA guideline of 55 dBA.

Two to three construction equipment and material vehicles would visit the Project Site each day during the construction period, resulting in small, occasional increases in noise levels along Hiwassee Road, Cherokee Crossing, Main Street, and Tennessee State Route (SR) 163 if the Project Site is accessed from the west. If accessed from the east, similar increased noise levels would occur along Hiwassee Road, County Road (CR) 971, and SR 163. Overall, construction noise would cause minor, temporary adverse impacts to the ambient sound environment in the vicinity of the dam. Similarly, the placement and eventual retrieval of the dam blocks from the temporary stockpile area adjacent to the Hiwassee Meadowlands Park ballfield and bleachers would result in minor, temporary adverse impacts from the operation of heavy machinery.

Vibrations from heavy machinery use and most construction activities would be temporary and minor, and due to the distance to the nearest receptors (over 950 feet), would not cause structural or cosmetic damage or be perceptible to members of the community.

The RFFAs discussed in Table 3.21-1 may, when combined with the proposed activities under Alternative B, result in minor, temporary cumulative impacts on noise levels in the area if the construction periods overlap with the Saulpaw Mill Dam removal. This would be especially true if the Project overlaps with activities associated with the Tarver or Molpus sites, which are nearest to the Project Site (TVA 2022b, c).

3.15 Transportation

3.15.1 Affected Environment

A CSX rail line extends east-west through the Project Site, approximately 30 feet north of the Saulpaw Mill Dam. County Road 950 (Hiwassee Road) is a two-lane paved public road that extends east-west along the northern boundary of the Project Site, approximately 80 feet north of the dam. From the west the site would be accessed from U.S. Route 11 (US 11) via SR 163 east to Main Street, Cherokee Crossing, and Hiwassee Road to the dam. From the east the site would be accessed from US 11 via SR 163 east to Reece McAmish Road (CR 971) and Hiwassee Road to the dam. SR 163 in the project vicinity is a two-lane undivided state highway that extends east-west approximately 0.5 mile north of the dam. Table 3.15-1 shows the 2021 average annual daily traffic (AADT) counts (Tennessee Department of Transportation [TDOT] 2022a; TDOT 2022b).

The project area is located at the confluence of Oostanaula Creek and the Hiwassee River. The Hiwassee River is a navigable water regulated under Section 10 of the Rivers and Harbor Act (USACE 2023).

Table 3-9. 2021 Average Annual Daily Traffic (AADT) Counts on Major Roadways Near Saulpaw Mill Dam

Station	Roadway	Distance from Saulpaw Mill Dam Project Boundary	AADT
159	SR 163 (East of US 11)	1.3 miles northwest	5,965
128	US 11 (North of Hiwassee River)	1.7 miles northwest	6,465
52	SR 163 (West of US 11)	2.5 miles northwest	3,001
54	SR 163 (East of Reece McAmish Rd)	2.5 miles northeast	4,241
4	US 11 (South of Hiwassee River)	3.0 miles southwest	7,653

Sources: TDOT 2022a; TDOT 2022b

3.15.2 Environmental Consequences

3.15.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. Therefore, no Project-related impacts on transportation resources would result.

3.15.2.2 Alternative B

TVA consulted with the McMinn County Highway Department and CSX Transportation regarding removal of the dam. The Hiwassee Road Bridge was inspected by the Tennessee Department of Transportation bridge inspector in 2023. The bridge does not have piers in the creek and it was determined that removal of the dam would not affect the bridge; thus, the McMinn County Highway department did not object to removal of the Saulpaw Mill Dam (personal communication April 25, 2023).

Removal of the dam would increase water velocities and potential hydraulic erosive forces. In September 2021, TVA performed a hydrologic and hydraulic study and pier scour analysis to evaluate the short- and long-term impacts of the dam removal on the upstream CSX bridge pier. The study results indicated that removal of the dam would result in increased velocities and shear stress near the CSX pier, which could result in uncontrolled head cutting of the channel bed upstream towards the pier. Due to the potential impacts to the bridge, pier scour mitigation was recommended. To prevent adverse impacts to the CSX railroad crossing, TVA would install concrete jacks prior to the dam removal to prevent scour around the CSX railroad pier.

CSX reviewed and approved the project plans in July 2022. In addition to the concrete jacks, per CSX requirements, flagging protection would be required when work is performed within 50 feet of the track and no materials or equipment would be stored within the CSX right-of-way without prior approval. CSX would be notified a minimum of 30 days prior to construction to allow for scheduling of the railroad flagman to minimize impacts to railroad operations. Additionally, all work on, over, or adjacent to the railroad crossing would be conducted in accordance with CSXT Public Projects Manual (CSX 2022). TVA would notify and coordinate construction activities with the CSXT General Engineering Consultant Designate. A construction agreement would be executed prior to construction.

Under Alternative B, the removal of the Saulpaw Mill Dam would result in negligible impacts to road traffic due to a negligible increase in construction related traffic in the vicinity of the Project Site. Subject to weather, construction activities would take approximately seven days to complete using a crew of six workers. Work would occur during daylight hours.

Most of these workers would come from the local area or region. Other workers could come from outside the region, and if so, would stay in local hotels in the vicinity. It is anticipated that workers would drive personal vehicles to the dam. Construction workers and TVA staff would be expected to drive passenger vehicles to and from the site which would be parked onsite. The removal team would drive work trucks to and from the site which would also be parked onsite. Additionally, transport of gravel and stone fill would require eight truckloads of material to the site. The individual workers and work teams would visit local restaurants and other businesses during the construction phase of the project.

Due to the proximity of the Project Site to the cities of Calhoun, Charleston, and Cleveland, traffic impacts along Hiwassee Road, Cherokee Crossing, Main Street, Reece McAmish Road, SR 163, and US 11 could occur, as a portion of the construction workers would be expected to commute to the Project Site from Cleveland and through Charleston and Calhoun. Traffic flow around the Project Site would be heaviest at the beginning of the workday, at lunch, and at the end of the workday. Two to three construction equipment and material vehicles would visit the Project Site each day during the construction period, including about four truckloads to remove the dam blocks from the site. These vehicles would be easily accommodated by existing roadways; therefore, impacts to transportation resources in the vicinity of the Project Site would be minor. If necessary, mitigation measures such as posting a flag person during heavy commute periods to manage traffic flow and prioritizing access for local residents, could be implemented to minimize potential adverse impacts to traffic and transportation.

During removal of the Saulpaw dam, materials and equipment would also be staged on the work barges. Oil booms would be deployed around the work barge and anchored to the abutments to contain spills and to restrict recreational boat access; however, this would not extend into the Hiwassee River commercial navigation channel. Thus, no more than minor impacts to commercial and recreational navigation would occur. The barges/equipment would be lit or have reflective tape for nighttime visibility. Additionally, TVA would notify the USACE and USCG so that a Notice to Navigation and a Broadcast Notice to Mariners can be issued to the commercial navigation industry.

Overall, with implementation of the above-described mitigation measures, Alternative B would result in minor, temporary impacts to traffic volumes and avoid adverse impacts to transportation infrastructure and river navigation. Alternative B would not result in any indirect impacts to transportation.

The RFFAs discussed in Table 3.21-1 may, when combined with activities under Alternative B, result in minor, temporary cumulative impacts on traffic levels in the area if the construction periods overlap with the Saulpaw Mill Dam removal. This would be especially true if the project overlaps with activities associated with the Tarver Site, which encompasses Oostanaula Creek just upstream of the Project Site (TVA 2022c).

3.16 Cultural Resources

3.16.1 Affected Environment

Cultural resources include pre-contact and historic archaeological sites, districts, buildings, structures, and objects, as well as locations of important historic events that lack material evidence of those events. Cultural resources are considered historic properties if included in, or considered eligible for inclusion in, the NRHP maintained by the National Park Service. The eligibility of a resource for inclusion in the NRHP is based on the Secretary of

the Interior's criteria for evaluation (36 CFR § 60.4), which state that significant cultural resources possess integrity of location, design, setting, materials, workmanship, feeling and association, and:

1. are associated with important historical events; or
2. are associated with the lives of significant historic persons; or
3. embody distinctive characteristics of a type, period, or method of construction or represent the work of a master, or have high artistic value; or
4. have yielded or may yield information (data) important in history or prehistory.

Because of their importance to the Nation's heritage, historic properties are protected by multiple laws. Federal agencies, including TVA, have a statutory obligation to facilitate the preservation of historic properties, stemming primarily from NHPA (16 U.S.C. §§ 470 et seq.). Other relevant laws include the Archaeological and Historic Preservation Act (16 U.S.C. §§ 469-469c), Archaeological Resources Protection Act (16 U.S.C. §§ 470aa-470mm) and the Native American Graves Protection and Repatriation Act (25 U.S.C. §§ 3001- 3013).

Section 106 of the NHPA requires federal agencies to consider the potential effects of their actions on historic properties and to allow the Advisory Council on Historic Preservation an opportunity to comment on the action. Section 106 involves four steps: 1) initiate the process; 2) identify historic properties; 3) assess adverse effects; and 4) resolve adverse effects. This process is conducted in consultation with the State Historic Preservation Office of the state in which the action would occur and with any other interested consulting parties, including federally recognized Tribes.

Section 110 of the NHPA sets out the broad historic preservation responsibilities of federal agencies and is intended to ensure that historic preservation is fully integrated into their ongoing programs. Federal agencies are responsible for identifying and protecting historic properties and avoiding unnecessary damage to them. Section 110 also charges each federal agency with the affirmative responsibility for considering projects and programs that further the purposes of the NHPA, and it declares that the costs of preservation activities are eligible project costs in all undertakings conducted or assisted by a federal agency.

The Saulpaw Mill Dam is within the footprint of Alternative B. There are 10 recorded archaeological sites within 0.5 mile of the Project Site (Table 3.16-1). Except for the Saulpaw Mill Dam, there are no other previously recorded historic architectural resources within the 0.5-mile buffer of the Project Site.

Table 3-10. Recorded Archaeological Sites Within 0.5 mile of the Project Site

Site Number	Site Type	NRHP Recommendation
40BY56	Woodland open habitation	Undetermined
40BY57	Pre-Contact nondiagnostic open habitation	Undetermined
40BY58	Woodland open habitation; mid-19th century artifact scatter	Undetermined
40BY59	Early Archaic and Mississippian open habitation	Undetermined

Site Number	Site Type	NRHP Recommendation
40BY60	Woodland open habitation	Undetermined
40BY80	Archaic open habitation	Undetermined
40BY81	Middle to Late Archaic and Mississippian open habitation	Undetermined
40BY86	Late to Terminal Archaic open habitation	Undetermined
40BY87	Pre-Contact nondiagnostic open habitation	Undetermined
40MN5	Unknown	Undetermined

In 2017, Tennessee Valley Archaeological Research (TVAR) (Karpynec and Weaver 2017), at the request of TVA, conducted an architectural evaluation of the Saulpaw Mill Dam to evaluate its eligibility for the NRHP and to assess potential effects of its proposed removal. Historically, the site was first developed and used as a ferry and mill by John Walker, a prominent member of the Eastern Cherokee Nation, until the property was acquired by the Saulpaw family in 1869. The Saulpaw family removed the previous structures and built a mill and the dam structures that are present at the site today. The mill building was removed by TVA during the construction of Chickamauga Dam. Based on the results of the evaluation, TVAR recommended the Saulpaw Mill Dam as eligible for the NRHP as a historic architectural resource under Criterion A "for its local significance in the areas of industry and commerce for its association with a mid-to-late-nineteenth century mill complex" and that the proposed undertaking would have an adverse physical effect to the resource. TVAR recommended that TVA consult with the THC to explore mitigation alternatives for the proposed undertaking to minimize the adverse effect to the resource (Karpynec and Weaver 2017).

A subsequent archaeological field survey of the Project Site was performed by New South Associates, Inc. (NSA) in November 2022 to evaluate the Saulpaw Mill Dam site archaeologically under Criterion D, which applies to sites that "have yielded or may be likely to yield, information important in history or pre-history" (NSA 2023). The fieldwork consisted of judgmental shovel testing, auger testing, probing, mapping, and documentation of features within the area of potential effect (APE), the 0.7-acre work area which includes the dam, extant stonework, and surrounding area. Results of the survey demonstrated that the site is heavily disturbed, and no intact subsurface deposits are present. As such, NSA recommended that the Saulpaw Mill Dam site is not eligible as an archaeological resource for listing in the NRHP under Criterion D and that no further archaeological work is recommended (NSA 2023).

3.16.2 Environmental Consequences

3.16.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. Therefore, no project-related changes to the Saulpaw Mill Dam or any other cultural resources would result.

3.16.2.2 Alternative B

Cultural resources under Alternative B would experience a large adverse impact due to the removal of the Saulpaw Mill Dam, which is eligible for listing to the NRHP under Criterion A

for its local significance in the areas of industry and commerce and its role in the growth and development of the City of Calhoun and McMinn County, TN.

As a part of the Section 106 process, TVA's Cultural Compliance staff consulted with the TN SHPO and all Tribes with an interest in McMinn County, TN. The TN SHPO concurred that the Saulpaw Mill Dam was eligible for the NRHP as a historic architectural resource and agreed to enter into an MOA with TVA to develop mitigation measures to address the adverse effects to the resource. The Tribes declined to participate in the MOA process. TVA's Tribal Liaison also conducted a follow-up meeting with the associated Cherokee Tribes, due to their historic association with the site, but received no interest in further participation. TVA also invited the Historical Society to be a consulting party for the development of the MOA.

Through consultation with the TN SHPO and the Historical Society, TVA developed measures to mitigate the adverse effects to the Saulpaw Mill Dam resource. These mitigation measures include the development of an interpretive traveling display detailing the history and significance of the site to be provided to the Historical Society for educational purposes, as well as providing a sample of the blocks removed from the dam to the City of Calhoun to be used for educational purposes.

Although the Tarver property listed as a potential RFFA in Table 3-14 may contain an archaeological site (40MN5) (TVA 2022c), it is unlikely that the purchase and development of the Tarver property would overlap with the expected timeline of the Saulpaw Mill Dam removal, therefore no cumulative impacts to cultural resources are anticipated.

3.17 Visual Resources

3.17.1 Affected Environment

Visual resources compose the visible character of a place and include both natural and human-made attributes. Visual resources influence how an observer experiences a particular location and distinguishes it from other locations. Such resources are important to people living in or traveling through an area and can be an essential component of historically and culturally significant settings.

The Saulpaw Mill Dam is in a rural-residential area in the Town of Calhoun in McMinn County, Tennessee. The surrounding topography ranges from gently sloping near the banks of the Hiwassee River to moderately and steeply sloping ranges at Eledge Ridge to the east. Dense forest is visible along the slopes leading up from the valley floor to the hilltops above. Rural-residential concentrations and businesses adjacent to highways, and agricultural operations are present in the vicinity (within 0.25 mi) of the Project Site.

The immediate vicinity of the Saulpaw Mill Dam is a sensitive viewing receptor as it is heavily used for informal recreational activities including bank fishing, swimming, and picnicking, as well as an access point for kayaking, paddling, and canoeing. The dam is readily visible to boaters on the Hiwassee River as well as recreational users of the Project Site and is widely known for its scenic, waterfall-like appearance.

3.17.2 Environmental Consequences

3.17.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. Therefore, no project-related changes to the appearance of the Saulpaw Mill Dam would result.

3.17.2.2 Alternative B

Under Alternative B, the Saulpaw Mill Dam would be removed. During construction, heavy machinery would be present, changing the visual aspects from vantage points along the Hiwassee River. Visual impacts during construction on boaters and others in the area would be minor and temporary. Adverse visual impacts could also occur on roads in the vicinity of the Project Site from trucks or other large vehicles travelling on the local roadway network. However, this disturbance would be momentary and present only as the vehicle passes the observer. Therefore, these adverse impacts on visual resources during construction would be temporary and minor. Following the removal of the dam and site restoration, the appearance of the area would be markedly different with the waterfall-like dam being replaced by a continuous reservoir pool with seasonally fluctuating water levels extending some distance up Oostanaula Creek. As noted in several public comments on the draft of this EA, some viewers would consider this change to be a large adverse visual effect, particularly for boaters on the Hiwassee River and recreational users of the site. A few other commenters stated they would appreciate the more natural appearance of the site. Following the completion of the dam removal and site restoration, overall visual effects would be moderately adverse.

Based on a review of the dam removal and other RFFAs, as summarized in Table 3-14, minor and temporary cumulative impacts on visual resources to those passing through on Hiwassee Road or to recreational boaters on the Hiwassee River would occur due to the presence of construction equipment on the site and on adjacent roadways if the construction periods overlap with the Saulpaw Mill Dam removal. This would be especially true if the project overlaps with activities associated with the Molpus Site, as it is within one mile of the Project Site and potentially located abutting the Hiwassee River (TVA 2022b).

3.18 Solid and Hazardous Waste

3.18.1 Affected Environment

In general, hazardous materials include substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or the environment when released into the environment. Hazardous materials are regulated under a variety of federal laws including Occupational Safety and Health Administration (OSHA) standards, Emergency Planning and Community Right to Know Act, the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980 and the Toxic Substances Control Act (TSCA).

RCRA regulations define what constitutes a hazardous waste and establishes a “cradle to grave” system for management and disposal of hazardous wastes. Subtitle C of RCRA includes separate, less stringent regulations for certain potentially hazardous wastes. Used oil, for example, may be regulated as hazardous waste if it is disposed of, but it is separately regulated if it is recycled. Specific requirements are provided under RCRA for generators, transporters, processors, and burners of used oil that are recycled. Universal wastes are a subset of hazardous wastes that are widely generated. Universal wastes

include batteries, lamps and high intensity lights, and mercury thermostats. Universal wastes may be managed in accordance with the RCRA requirements for hazardous wastes or by special, less stringent provisions.

Solid waste consists of a broad range of materials that include refuse, sanitary wastes, contaminated environmental media, scrap metals, nonhazardous wastewater treatment plant sludge, nonhazardous air pollution control wastes, various nonhazardous industrial waste, and other materials (solid, liquid, or contained gaseous substances). Solid waste is regulated by the USEPA and RCRA Subtitle D. Each state is required to ensure the federal regulations for solid waste are met and may implement more stringent requirements.

Special waste is a solid waste, other than a hazardous waste, which requires special handling and management to protect public health or the environment. In some states, special wastes may include sludges, bulky wastes, pesticide wastes, industrial wastes, combustion wastes, friable asbestos, and certain hazardous wastes exempted from RCRA Subtitle C requirements. Any of these wastes, if generated, would be disposed as required by state and federal regulations. In Tennessee, requirements for solid wastes are focused on solid waste processing and disposal under Rule 0400-11-.01.

Solid and hazardous waste is not generated on the proposed Project Site. Additionally, there is no known solid or hazardous waste stored on the Project Site.

Based on a review of the TDEC Division of Remediation database, permitted Tennessee landfill sites, solid waste processors, transfer or convenience centers, and UST database accessed through the TDEC Data Viewer and the USEPA ECHO database (USEPA 2022a), the nearest site regulated by the TDEC Division of Remediation is located approximately two miles west of the Saulpaw Mill Dam and the nearest regulated UST site is located approximately 0.5 miles west of the dam.

3.18.2 Environmental Consequences

3.18.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. As such, no solid or hazardous waste would be produced.

3.18.2.2 Alternative B

Under Alternative B, deconstruction and removal of the Saulpaw Mill Dam would generate typical construction debris and solid waste associated with the removal of materials from the structure. The dam blocks that are potentially reusable would be removed from the site to a temporary storage area for reuse by the City of Calhoun in accordance with the NHPA Section106 MOA (see Section 3.16.2.2). Any other dam blocks and other solid waste would be disposed of offsite at a permitted landfill in accordance with state and Federal solid waste procedures. Solid wastes would be managed in accordance with applicable state regulations and applicable BMP procedures. TVA would comply with TDEC regulations regarding the proper management of hazardous materials and disposal of waste materials. These wastes would be temporarily stored in properly managed storage areas on-site. TVA would dispose of all waste generated during the demolition activities in accordance with the Waste Management Plan. Although no contaminated demolition debris or hazardous wastes are anticipated, such waste, if generated, would be hauled by truck to a permitted waste disposal facility/landfill designed to receive such wastes. Therefore, there would be

minor effects as a result of generation of waste through implementation of the Proposed Action.

A May 2022 sediment survey reported that approximately 83 cubic yards of sediment has accumulated behind the Saulpaw Mill Dam (TVA 2022a) which would be released to the Hiwassee River during Phase 2 and Phase 3 work. As discussed in Section 3.4, sediments behind the dam contain levels of arsenic, chromium, iron, lead, manganese, nickel, and selenium that were detected at levels that would not affect benthic biota, within the range of those expected for TVA reservoirs, and within the naturally occurring background levels for soils in the State of Tennessee. Thus, release of the sediments would not result in adverse effects to the aquatic environment.

No hazardous wastes would be expected on the Project Site, however appropriate spill prevention, containment, and disposal requirements would be implemented to protect construction workers, the public, and the environment as necessary if hazardous wastes are identified. Any reportable spills and subsequent cleanup related to the Project would be addressed in accordance with the requirements outlined in the Project Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) and Waste Management Plan. In addition, TVA would develop a Project Erosion & Sediment Control Plan, which would incorporate the requirements of applicable federal and state permit conditions. Designated environmental personnel would be responsible for daily inspection, cleanup, and proper labeling, storage, and disposal of all refuse and debris produced. Disposal containers such as dumpsters or roll-off containers would be obtained from a proper waste disposal company as appropriate and would minimize risk of spills or adverse effects related to waste disposal. No hazardous wastes would be expected, and no adverse long-term effects associated with solid waste would be anticipated; thus, no cumulative effects are anticipated.

3.19 Socioeconomics and Environmental Justice

3.19.1 Affected Environment

Social, economic, and sociocultural characteristics of potentially affected populations, as well as communities with environmental justice (EJ) concerns, including minority and low-income populations, are assessed in this section using the U.S. Census Bureau (USCB) 2010 decennial census (2010 Census), USCB 2020 decennial census (2020 Census), and the 2016 to 2020 American Community Survey (ACS) 5-year estimates (2020 ACS), depending on availability of data (USCB 2022a). The communities being studied include the Project Site and block groups within a 3-mile radius of the Saulpaw Mill Dam plus the nearby City of Cleveland. This area is referred to as the EJ Study Area, or the 3-mile buffer as presented in Figure 3-5; the City of Cleveland is also denoted on figures. The Town of Calhoun and City of Charleston are not considered separately because of their small size and location within the block groups within the 3-mile radius. State and county-level USCB data are included for comparison purposes. Where appropriate, additional data from USCB and other federal and state agencies are employed.

Potential beneficial and adverse effects to socioeconomics are also evaluated in this section, as are effects to communities with EJ concerns, in accordance with EOs 12898 and 14096, to identify and address disproportionately high and adverse human health or environmental effects of each alternative on minority populations and low-income populations. The CEQ guidance for applying EO 12898 under NEPA directs identification of minority populations when the total minority population of the affected area exceeds 50

percent, or the minority population percentage of the study area is meaningfully greater than the minority population percentage in the general population or through another appropriate unit of geographic analysis (CEQ 1997). For purposes of this analysis, meaningfully greater minority percentages were defined as those that were 10 percentage points above the minority percentage of the associated county. CEQ defines minority populations as people who identify themselves as Asian or Pacific Islander, American Indian or Alaskan Native, Black (not of Hispanic origin), or Hispanic. Those indicating two or more races are also considered minorities due to necessarily including one of these minorities. Tribal populations were identified using the US HUD Tribal Directory Assessment Tool and the US Department of the Interior (USDOI) Tribal Affairs mapping (HUD 2022; USDOI 2022).

The CEQ guidance specifies that low-income populations be identified using the annual statistical poverty threshold from the USCB Current Population Reports Series P-60 on Income and Poverty. The current (2021) USCB-provided poverty threshold for individuals under age 65 is $14,097, and the official poverty rate for the US is currently 11.6 percent (USCB 2022b). Low-income populations may also be identified by comparing study area income and poverty rates with the county and/or state data using current USCB Small Area Income and Poverty Estimates (SAIPE) (USCB 2022c), as recommended by USCB. For purposes of this analysis, low-income populations were defined as areas where poverty rates are less than two times the poverty level (i.e., those with poverty ratios defined in the 2020 ACS as 1.99 or lower) and those rates exceed the associated county's rate, calculated in the same manner. While this criterion is more encompassing than the use of base poverty levels from the USCB Current Population Reports Series P-60 or the USCB SAIPE, this low-income threshold, also used by USEPA in their delineation of low-income populations, is an appropriate measure for EJ consideration because current poverty thresholds are often too low to adequately capture the populations adversely affected by low-income levels, especially in high-cost areas (USEPA 2019). According to USEPA, the effects of income on baseline health and other aspects of susceptibility are not limited to those below the poverty thresholds. For example, populations having an income level from one to two times the poverty level also have worse health overall than those with higher incomes (Centers for Disease Control and Prevention 2011).

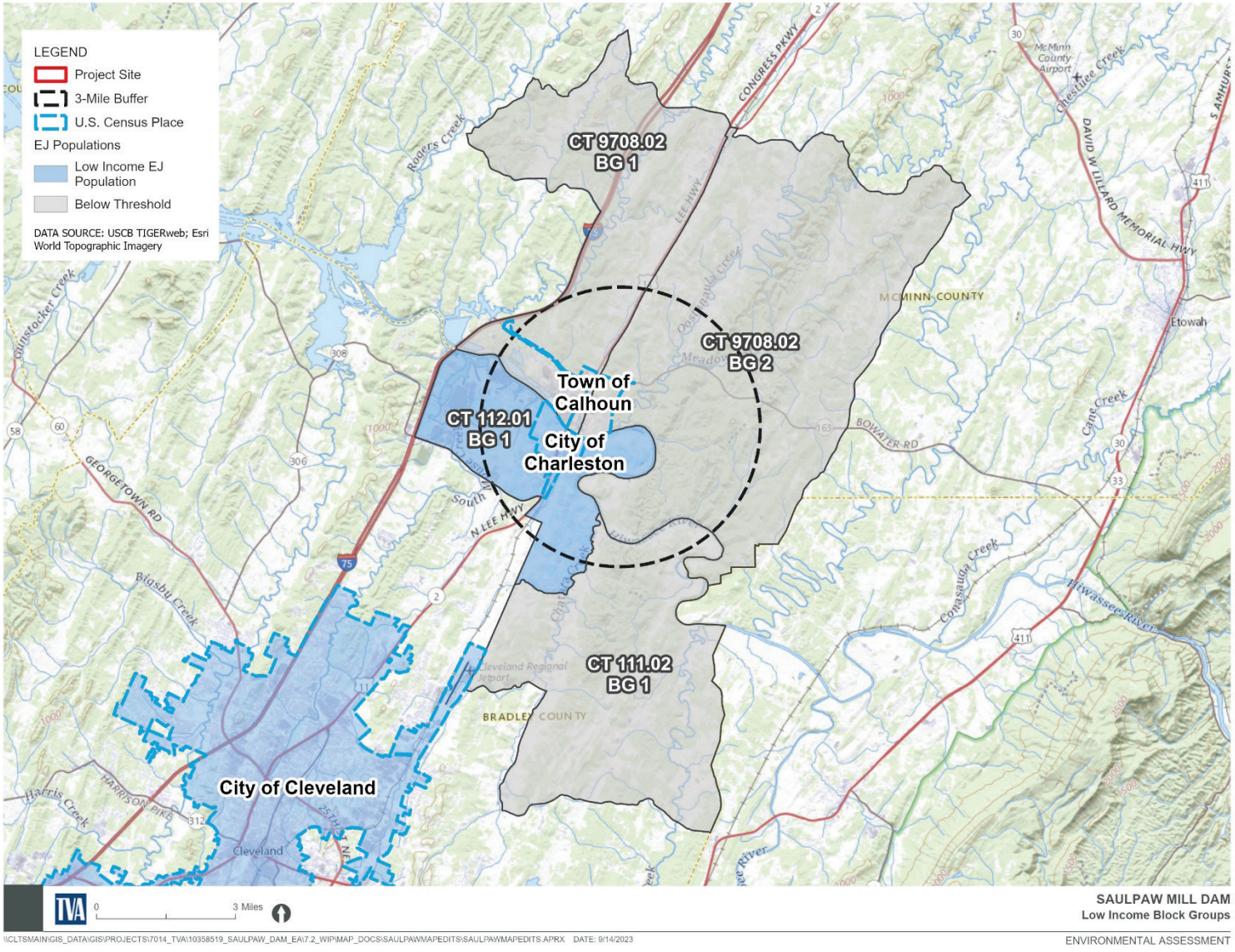

Figure 3-5. Low Income Block Groups Identified in the Saulpaw Mill Dam Removal EJ Study Area

3.19.1.1 Socioeconomics

Population change data for Tennessee, McMinn County, Bradley County, CT 112.01 BG 1, and the City of Cleveland is provided in Table 3.19-1, based on the 2010 Census and 2020 ACS. As shown, from 2010 to 2020, these areas experienced an increase in population. McMinn County and CT 112.01 BG 1, however, grew at a much slower pace than the other areas, at just 1.9 percent and 2.4 percent, respectively. The City of Cleveland grew at the fastest rate of 14.7 percent. Bradley County's rate of 9.8 percent was similar to that of the state at 8.9 percent. The percent change in population for the remaining three census block groups is not provided; because the geographic boundaries of these block groups changed between 2010 and 2020, therefore, a calculation of population change was not possible.

Additional socioeconomic data for the various areas are included in Table 3.19-2. While generally most of the areas are not substantially different from one another, a few data are noteworthy. For example, CT 9708.02 BG 1 demonstrates the highest percent of its population age 65 years old and over at 22.8 percent. Correspondingly, it demonstrates the highest median age at 53.4 years. It also has the lowest percent of its civilian population (age 16+) in the labor force at 49.2 percent; this percentage ties with that of CT 112.01 BG 1. Estimates for CT 112.01 BG 1 are also noteworthy. This block group has the second highest median age (49.2 years) and the lowest percent of high school or higher completion at 81.0 percent.

Further, although all areas have lower per capita income than that of the state at $30,869, CT 9708.02 BG 2, the block group encompassing Saulpaw Mill Dam, has the lowest per capita income of the geographic areas at $22,270. Of all geographies, the City of Cleveland has the highest percent of poverty ratio at 41.3 percent. Cleveland also has a high percentage of renter occupied housing units at just over half at 52.7 percent. Other area geographies renter occupied housing units range from a low of 12.5 percent (CT 111.02 BG 1) to 33.2 percent (Bradley County); state's percentage is 33.5 percent.

3.19.1.2 Environmental Justice

3.19.1.2.1 Minority Populations

Neither the City of Cleveland nor any census block groups within the Saulpaw Mill Dam EJ Study Area were identified as qualifying minority EJ populations (USCB 2022a, 2022b, 2022c, 2022d). No census block groups in the EJ Study Area or Cleveland had minority percentages that were 10 percentage points or more above their respective county's percentage. Based on the 2020 Decennial Census, all census block groups in the EJ Study Area, counties, and City of Cleveland demonstrated lower proportions of persons identifying as minorities than that of the state. Only Cleveland approached that of the state at 25.6 percent compared to Tennessee at 27.8 percent. The City of Cleveland also shows elevated percentages of Some Other Race (5.9 percent), Two or More Races (9.1 percent), and Hispanic/Latino (11.8 percent), the latter of whom may overlap the previous two ethnicities.

Table 3-11. Socioeconomic Data for the Saulpaw Mill Dam Study Area

Area	% Minority	% Change Population 2010 to 2020 Census	% of Population 65 Years and Over	Median Age	% High School or Higher*	% of Occupied Housing Units, Renter Occupied	Median Year Housing Units Built	% of 16+ Civilian Population in Labor Force	Unemploy-ment Rate	Poverty Ratio, Two Times US Threshold	Per Capita Income
Tennessee	27.8	8.9	16.4	38.8	88.2	33.5	1984	61.1	5.3	33.8	$30,869
McMinn County	12.6	1.9	19.8	42.4	85.0	25.7	1982	54.1	6.2	40.7	$25,637
CT 9708.02 BG 1	10.9	N/A	22.8	53.4	89.7	23.0	1983	49.2	0.0	38.5	$26,855
CT 9708.02 BG 2 (Saulpaw)	12.4	N/A	13.8	39.0	91.1	23.1	1986	59.8	4.4	33.3	$22,270
Bradley County	17.6	9.8	17.1	39.7	87.1	33.2	1985	61.2	5.4	34.6	$26,743
CT 111.02 BG 1	7.3	N/A	20.8	43.9	88.7	12.5	1992	60.1	0.0	19.4	$26,428
CT 112.01 BG 1	16.1	2.4	16.8	49.2	81.0	19.4	1976	49.2	2.3	38.6	$24,026
Cleveland City	25.6	14.7	16.7	34.1	86.8	52.7	1981	61.5	4.4	41.3	$25,561

Sources: 2010 Census; 2020 Census; 2020 ACS
N/A – Not Available. Census boundaries changed between 2010 and 2020; as such no % Change in Population was calculated.

Table 3-12. Minority Percentages and Ethnicities in the Saulpaw Mill Dam EJ Study Area

Area	% Minority	% White[1]	% Black / African Am.	% Am. Indian / AK Native	% Asian	% Native Hawaiian / Pacific Islander	% Some Other Race	Two or More Races	% Hispanic / Latino[2]
Tennessee	27.8	72.2	15.8	0.4	2.0	0.1	3.6	6.0	6.9
McMinn County	12.6	87.4	3.5	0.3	0.8	0.0	1.7	6.2	4.1
CT 9708.02 BG 1	10.9	89.1	1.8	0.0	0.4	0.0	1.5	7.2	3.5
CT 9708.02 BG 2 (Saulpaw)	12.4	87.6	2.0	0.5	0.4	0.0	1.6	8.0	3.2
Bradley County	17.6	82.4	4.8	0.4	1.1	0.1	3.6	7.5	7.8
CT 111.02 BG 1	7.3	92.7	1.2	0.6	0.1	0.1	1.9	3.5	3.4
CT 112.01 BG 1	16.1	83.9	7.9	0.3	0.7	0.0	0.6	6.6	2.8
Cleveland City	25.6	74.4	8.2	0.5	1.8	0.2	5.9	9.1	11.8

Source: 2020 Decennial Census

[1] Race percentages are provided for those reporting a particular race alone or in combination.

[2] This group is calculated separately from the other ethnicities and may include overlap from the other categories, as the USCB does not consider Hispanic or Latino a “race.”

3.19.1.2.2 Low-Income Populations

The census block groups, and City of Cleveland, emboldened in Table 3-13 represent areas with qualifying low-income EJ populations. Based on the 2021 SAIPE, a slightly higher proportion of the population of McMinn County was living in poverty when compared with the state as a whole, although the proportion of population living in poverty for both McMinn and Bradley counties is close to that of the state.

Poverty ratios of block groups and the City of Cleveland were compared to that of the county in which each is located. Based on the 2020 ACS, one of the four census block groups, i.e., CT 112.01 BG 1, within the Saulpaw Mill Dam EJ study area had a higher percentage of people living in poverty than Bradley County. The City of Cleveland also exceeded the percentage of Bradley County. Bradley County had 34.6 percent of its population at less than two times the US poverty threshold, compared to CT 112.01 BG 1 at 38.6 percent and Cleveland at 41.3 percent. This census block group and the city of Cleveland, emboldened in Table 3-13, are defined as the areas where the chance for disproportionate environmental and human health effects may be the greatest.

Table 3-13. Poverty Rates for the Saulpaw Mill Dam EJ Study Area

Area	2021 SAIPE	2020 ACS	
	Poverty %	Poverty %, Households	Poverty Ratio, Two Times US Threshold *
Tennessee	13.7	14.4	33.8
McMinn County	14.5	16.5	40.7
CT 9708.02 BG 1		24.9	38.5
CT 9708.02 BG 2 (Saulpaw)		9.6	33.3
Bradley County	11.7	15.0	34.6
CT 111.02 BG 1		19.1	19.4
CT 112.01 BG 1		7.8	**38.6**
Cleveland City		19.9	**41.3**

*Calculated based on percent of population with a ratio of income to poverty threshold ≤1.99
Source: 2021 SAIPE, 2020 ACS
Note: Emboldened census block groups represent identified EJ populations as compared with the county percentage.

3.19.1.2.3 Tribal Populations

According to US Department of the Interior Bureau of Indian Affairs mapping, no federally recognized Tribes exist within the study area or nearby vicinity, and no state recognized tribal or urban communities exist within Bradley or McMinn Counties. However, the US HUD Tribal Directory Assessment Tool lists five Tribes as having interest in projects in these two counties. TVA has established formal consultation with over 20 federally recognized Tribes through assessment of the potential effects of its actions on historic properties, as required under Section 106 of the NHPA (See Section 3.16.1). The TVA list of Tribes includes the five indicated by the US HUD Tool: Alabama-Coushatta Tribe of Texas, Cherokee Nation, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, and The Muscogee (Creek) Nation.

As presented above in Table 3-12, some individuals living in the study area identify as either American Indian or Alaska Native. Based on the location of the study area within the country, it is likely that most of those individuals are American Indian rather than Alaska

Native. According to the 2020 ACS, one census block group has a higher percentage of its population identifying as American Indian or Alaska Native as compared to its associated county. CT 111.02 BG 1 has an estimated 0.6 percent American Indian or Alaska Native as compared to Bradley County at 0.4 percent.

3.19.1.2.4 Subsistence Populations

No specific subsistence populations have been identified in the Study area. However, recreational uses such as fishing have been identified as prevalent in the area of Saulpaw Mill Dam. Such fishing activities may support different patterns of consumption of natural resources among minority and low-income individuals in the area.

3.19.2 Environmental Consequences

3.19.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and the dam would continue to be maintained in its current state. Consequently, no project-related impacts on socioeconomic resources or EJ communities would result.

3.19.2.2 Alternative B

Alternative B would result in permanent beneficial impacts as well as minor, temporary beneficial impacts for both the general socioeconomic community and identified EJ populations. The Saulpaw Mill Dam, due to the uncontrolled spillway, is capable of producing dangerous recirculating currents, large hydraulic forces, and other hazardous conditions sufficient to trap and drown victims immediately downstream from the overflowing water. Users could also suffer falls if climbing on or walking across the dam structure in the water or from steep sloped banks. A primary purpose for removal of the dam is to improve safety at the dam location as well as improve habitat conditions for aquatic organisms through the return of a free-flowing creek and removal of an existing barrier to their movement; and as such, Alternative B would result in permanent beneficial impacts for all recreational users of the area. The improved aquatic habitat may provide a beneficial effect to local fishing in the area, which could benefit local socioeconomic conditions and EJ communities.

Temporary, minor beneficial impacts are expected to occur during the period of dam removal. Site preparation, removal of the dam structure, and cleanup are expected to occur over approximately seven days. The removal of the dam is anticipated to require six workers for Project completion. The workers would be expected to bring increased spending to the area as a result of short-term housing and associated needs. If they are not within commuting distance, they would be expected to stay at local hotels and frequent local restaurants during the period of dam removal. These worker expenditures would increase sales as well as provide temporary, albeit very minor increases in lodging and sales taxes. Workers would be anticipated to stay in nearby Cleveland, which is the nearest location with hotels. The City of Cleveland has been identified as a qualifying EJ population. It is also possible that any minor beneficial effects would extend to EJ populations if the businesses patronized are owned by members of the EJ community.

Alternative B would not cause any permanent direct or indirect changes to local air quality as described in Section 3.12.2. Temporary impacts to local air quality are expected to be limited to the immediate area of the construction access road and the construction activities. Most of the fugitive dust generated is expected to be limited to the immediate removal area, which is not within an identified EJ population area.

As described in Section 3.14.2, during the dam removal period, Alternative B would generate noise as a result of construction. Construction equipment would generate noise levels that are estimated to diminish to approximately 60 dBA or less at the nearest residences (approximately 900 ft or 0.18-mile or more from the equipment) along Little Mountain Acres Road. These noise levels are below the HUD guideline of 65 dBA but greater than the USEPA guideline of 55 dBA. The nearest residences are not within a census block group or other area identified as an EJ population.

Minor adverse impacts on traffic would also impact the socioeconomic community during the anticipated seven-day period of dam removal. Temporary, minor adverse impacts associated with increased traffic would be expected along Hiwassee Road, Cherokee Crossing, Main Street, Reece McAmish Road, SR 163, and US 11 as a portion of the construction workers would be expected to commute to the Project Site from Cleveland and through Charleston and Calhoun. The low volume of traffic resulting from dam removal activities (Section 3.15.2) would not affect the socioeconomic communities or any EJ community. Area roads are capable of handling the additional two to three construction equipment and materials vehicles and one to two passenger vehicles that are anticipated to visit the site each day during the period of construction. If necessary, traffic controls such as staging of trucks or use of a flagger would mitigate any impacts. No cumulative effects are anticipated.

The temporary increase in traffic during the period of construction would result in minor cumulative impacts if the period of construction overlaps with any potential RFFAs, particularly the Tarver Site or Molpus Site which are nearest to the Project Site (TVA 2022b, c). Overall, minor, beneficial impacts are anticipated to socioeconomic conditions and EJ communities as a result of implementation of Alternative B.

3.20 Safety

3.20.1 Affected Environment

This section provides an overview of existing public and occupational (worker) health and safety regarding the Saulpaw Mill Dam and the potential impacts on public health and safety associated with the proposed Alternatives. Public health and safety topics include emergency response and preparedness to ensure that project construction and operation do not pose a threat to public health and safety. Occupational health and safety issues include worker safety in compliance with OSHA standards.

Public emergency services in the area include various medical centers, law enforcement services, and fire protection services. Health care institutions include a walk-in clinic, the Preferred Family Medical Care located in Calhoun, Tennessee approximately 1.5 miles west of the Saulpaw Mill Dam, and the CHI Memorial Hospital in Cleveland, Tennessee approximately 11 miles SW of the Saulpaw Mill Dam. Law enforcement services within the vicinity of Saulpaw Mill Dam include the Calhoun Police Department located in Calhoun, Tennessee.

Fire departments within the vicinity of the Saulpaw Mill Dam include the Calhoun Fire Department located in Calhoun, Tennessee. Additionally, the Tennessee Emergency Management Agency is available for assistance by reaching out for mutual aid from local jurisdictions, Tennessee agencies and departments, and the federal government for assistance in the event of disasters and emergencies.

3.20.2 Environmental Consequences

3.20.2.1 Alternative A

Under the No Action Alternative, Saulpaw Mill Dam would not be removed, and it would continue to be maintained in its current state. Therefore, there would be no additional occupational health and safety impacts on the workers associated with the proposed construction activities.

However, the existing public safety concerns with the Saulpaw Mill Dam associated with current conditions would remain and therefore, the purpose and need of the project to address these concerns would not be met.

3.20.2.2 Alternative B

Construction activities associated with both Alternative B would expose workers to hazards associated with most large construction projects including falls and heavy equipment accidents. Additionally, due to the proximity of the proposed construction areas to the reservoir, there is the possibility that falling into the water could lead to injury or death. Environmental hazards of construction projects include working in extreme temperatures (primarily heat stress) and potential exposures to biological hazards such as mosquitoes, ticks, poisonous spiders, and venomous snakes.

Workers would follow all applicable federal and state regulations with respect to worker safety, comply with all applicable health and safety procedures. As construction work has known hazards, standard practice is to establish and maintain health and safety plans in compliance with OSHA regulations. Such health and safety plans emphasize implementation of BMPs for site safety management to minimize risks to workers. Based on the nature of the proposed construction activities and their proximity to water, the risk of potential temporary minor adverse impacts related to occupational health and safety are increased but would be mitigated through implementation of a rigorous site health and safety plan.

The water level of Oostanaula Creek is anticipated to decrease marginally at the Saulpaw Mill Dam site following removal, and while it is unlikely, subsurface or surface hazards that were not present prior to the removal may emerge. While these hazards could negatively affect recreational public safety in the near term, this negative impact would diminish over time as boaters become aware of the location and nature of these hazards.

Fishing, kayaking, paddling, canoeing, swimming and other common recreational activities within the vicinity of the Saulpaw Mill Dam would be restricted during construction to eliminate safety risks to recreational users during the construction phase. Removal of the dam would create safer passage through the area, as current high-water levels over the dam could cause danger to recreational users that utilize the area for kayaking, paddling, canoeing, swimming, and fishing. By removing the dam, the site becomes safer and more enjoyable for recreational users resulting in a beneficial impact.

Potential public and occupational health and safety hazards could result from the flow of construction traffic along the public roadways. Although the proposed number of trucks is not anticipated to adversely affect traffic in the region, the presence of these trucks on the local roadway network throughout the duration of the construction could negatively affect the traveling public and workers operating project-related trucks and vehicles. Traffic control methods as listed in the Manual on Uniform Traffic Control Devices (USDOT 2022) would

be implemented during the construction phase, such as advanced warning signs, reducing speed limit, and work zones, and would minimize traffic safety concerns.

Overall, implementation of Alternative B would result in minor, temporary impacts to public and occupational health and safety during construction, and long-term beneficial permanent impacts to public and occupational health and safety due to the removal of the Saulpaw Mill Dam. The temporary increase in traffic during the period of construction would result in minor cumulative impacts if the period of construction overlaps with any potential RFFAs, particularly the Tarver Site or Molpus Site which are nearest to the Project Site (TVA 2022b, c).

3.21 Cumulative Impacts

3.21.1 Identification of Other Actions

The CEQ regulations (40 CFR §§ 1500-1508) implementing the procedural provisions of the NEPA of 1969, as amended (42 USC § 321 et seq.) define cumulative impact as: "…the impact on the environment which results from the incremental impact of the action when added to other past, present and RFFAs regardless of what agency (federal or nonfederal) or person undertakes such other actions." (40 CFR § 1508.7).

A cumulative impact analysis must consider the potential impact on the environment that may result from the incremental impact of a project when added to other past, present and RFFAs (40 CFR § 1508.7). Baseline conditions reflect the impacts of past and present actions. The impact analyses summarized in preceding sections are based on baseline conditions and, therefore, incorporate the cumulative impacts of past and present actions.

RFFAs were identified within a 10-mile radius of the project as having the potential to, in aggregate, result in larger and potentially adverse impacts to environmental resources in the Project Site (Table 3-14).

Table 3-14. Summary of other RFFAs within a 10-mile radius of the Project Site

Action	Description
Molpus Site	A proposed 2,407-acre industrial site off SR 163, approximately 0.8 mile east of the Project Site.
Tarver Site	A proposed 300-acre industrial site off Reece McAmish Rd, approximately 1.2 miles northeast of the Project Site.
Wright-Simpson Property	A proposed 307-acre industrial site off Wacker Blvd, approximately 2.2 miles west of the Project Site.
Molpus Interstate Site	A proposed 700-acre industrial site off Interstate 75, approximately 4.2 miles northwest of the Project Site.
Pinnacle Industrial Park	A proposed 35-acre industrial site off 20th St NE, approximately 9.8 miles southwest of the Project Site.
Benton Industrial Park	A proposed 13.2-acre industrial site off Parksville Rd, approximately 10 miles southeast of the Project Site.

Source: TVA 2022d

3.21.2 Analysis of Cumulative Effects

To address cumulative impacts, the existing affected environment surrounding the Project Site was considered in conjunction with the environmental impacts presented in Chapter 3. These combined impacts are defined by the CEQ as "cumulative" in 40 CFR Section

1508.7 and may include individually minor, but collectively significant actions taking place over a period of time. Most cumulative impacts are considered temporary in nature and would be most applicable if nearby RFFAs take place concurrently with the proposed action. The potential for cumulative effects to the identified environmental resources of concern are analyzed below.

Under the No Action Alternative, leaving the dam in place would not resolve the existing risk of hazardous conditions due to the recirculating currents created by Saulpaw Mill Dam and absence of guard rails or other protections. Current conditions have potential to result in serious injury or fatality from users climbing on or walking across the dam structure in the water or from a fall from steep sloped banks or dam structure. Leaving the dam in place would also require long-term monitoring and maintenance by TVA to maintain the existing dam structures. Cumulative impacts of the No Action Alternative would include the continued presence of an aquatic life barrier to movement in the watershed, and the dam continuing to present a safety hazard to recreationalists.

Under the Action Alternative, no substantive cumulative impacts are expected for land use; prime farmland; geology and groundwater; floodplains; wetlands; threatened and endangered species; air quality; GHGs and climate change; cultural resources; and solid and hazardous waste. The proposed action would have temporary minor impacts and beneficial permanent effects to aquatic ecology. If the construction periods of RFFAs discussed in Table 3-14 overlap with the Saulpaw Mill Dam removal activities, minor to moderate cumulative impacts may occur to surface water and water quality, and minor cumulative impacts soils; vegetation; wildlife; natural areas, parks, and recreation; noise receptors; transportation; visual resources; socioeconomic and EJ communities; and safety. This would be especially true if the project overlaps with activities associated with the Molpus Site or Tarver Site, which are nearest to the Project Site (TVA 2022b, c).

3.22 Unavoidable Adverse Environmental Impacts

The No Action Alternative (Alternative A) has no direct adverse environmental impacts as this alternative does not involve construction activities. Direct adverse environmental impacts from the No Action Alternative, such as minor impacts to surface waters and water quality; aquatic ecology; threatened and endangered species; natural areas, parks, and recreation; socioeconomics and EJ; and safety, may occur because of the current safety hazards associated with the dam and presence of a barrier to aquatic life movement.

The proposed Action Alternative (Alternative B) could cause minor unavoidable adverse environmental impacts to surface water and water quality, and minor impacts to soils, vegetation, wildlife, natural areas, parks and recreation, air quality, noise receptors, transportation, visual resources, and safety, and socioeconomic and EJ communities.

Selection of the Action Alternative would result in a minor permanent impact to soils on the Project Site due to the placement of riprap for streambank stabilization, and minor grading for construction activities, material storage, etc. The placement of concrete jacks on the streambed would be used to prevent further stream degradation (e.g., erosion and headcutting) and would be utilized by aquatic life as habitat. The Project Site would be cleared of vegetation, resulting in the temporary loss of herbaceous and forested areas and thus a reduction in wildlife habitat. Tree clearing would be performed during the fall or winter to avoid adversely affecting bat species and disturbed areas would be returned to pre-construction conditions and stabilized with permanent vegetation. The Project Site may have a small increase in habitat following revegetation, which would provide a minor

beneficial effect to wildlife. The passage downstream of the sediments accumulated behind the dam would result in a temporary adverse effect to surface water quality due to temporary elevated turbidity, however effects to the aquatic ecology of the system would be negligible. Overall effects to aquatic ecology would be beneficial with the removal of the dam due to the removal of a barrier and additional access to habitat in Oostanaula Creek.

Construction activities associated with the Action Alternative would generate fugitive air and dust emissions immediately within the Project Site as well as increased noise levels and traffic levels on nearby roads. However, during the construction period, TVA would implement the appropriate control methods and mitigation measures, as discussed in Section 2.3, to minimize these effects resulting in only minor, temporary impacts. Recreation onsite would be temporarily halted during construction activities, which would have a temporary minor impact on socioeconomics and EJ population that use the area recreationally. Beneficial impacts would occur to safety in the area, which would have a positive impact on recreation (fishing) and, as a result, local EJ and non-EJ populations that use the area recreationally. Temporary, beneficial impacts to socioeconomics would occur during the construction period due to local spending from construction employees.

Lastly, as the Saulpaw Mill Dam is NRHP-eligible, its removal would be considered an adverse impact to cultural resources. TVA would coordinate with the TN SHPO and associated Tribes and develop a Memorandum of Agreement (MOA) detailing the mitigation measures to be implemented prior to initiation of onsite construction.

A summary of BMPs, routine measures, and minimization and mitigation measures to reduce potential adverse environmental effects is provided in Section 2.3.

3.23 Relationship of Short-Term Uses and Long-Term Productivity

NEPA requires consideration of the “relationship between short-term uses of man’s environment and the maintenance and enhancement of long-term productivity” (40 CFR §1502.16). For implementation of Alternative B, short-term uses are those that are expected to occur within the construction period, while long-term uses refer to the post-construction period lasting for several decades.

Implementation of the action alternative would have various short- and long-term consequences. Short-term (construction related) impacts caused by the project would occur during and immediately after construction and would result in adverse effects. Long-term impacts caused by the project would be permanent. However, long-term beneficial effects to Oostanaula Creek and the Hiwassee River of the Action Alternative would begin to accrue after completion of the dam removal project.

Temporarily adversely affected resources include land use; soils; surface water and water quality; floodplains; vegetation; aquatic ecology; threatened and endangered species; recreation; air quality; noise and vibration; transportation; visual resources; solid and hazardous waste; and safety. Most impacts to these resources would be temporary, lasting only the duration of the construction activities expected to be seven days (with the exception of vegetation, which would take a longer time period for regeneration). Unavoidable long-term impacts would occur to cultural resources due to the permanent removal of Saulpaw Mill Dam, a NHRP-eligible structure. Beneficial long-term effects would occur from improvements to aquatic ecology (removal of a barrier to aquatic life movement), floodplains (increase in floodplain capacity and restoration of hydraulic connection between Oostanaula Creek and the Hiwassee River), and safety (removal of a

safety hazard). Short-term beneficial effects from this project would be seen through a minor increase in local revenue due to spending by workers on the project.

Implementation of Alternative B would result in beneficial long-term impacts and thus productivity for Oostanaula Creek. Only Alternative B would address the purpose and need of the project. Not taking action would continue to place human safety at risk from potentially hazardous conditions created by the uncontrolled spillway at the dam, which is capable of producing dangerous currents sufficient to trap and drown victims immediately downstream from the spillway. The dam would also continue to serve as a barrier to aquatic life moving upstream into Oostanaula Creek. Therefore, implementation of the Proposed Action would enhance the long-term productivity of the Creek by restoring the site to a more natural condition.

3.24 Irreversible and Irretrievable Commitments of Federal Resources

The Preferred Alternative, Alternative B, would result in an irreversible and irretrievable commitment of resources as the existing Saulpaw Mill Dam would be demolished and removed because of the proposed Project. As such, the dam as a cultural or recreational resource would be permanently eliminated and once the Project Site work is initiated could not be reversed. Removal of existing vegetation onsite, the as use of fuels and oils for construction vehicles, equipment, and worker vehicles, and the landfill space necessary for disposal of dam components would also constitute an irreversible and irretrievable commitment of resources. Affected federal resources would include the components of the dam as well as the land and reservoir area in the immediate vicinity of the dam.

The No Action Alternative would not result in an irretrievable or irreversible commitment of resources but would require continued monitoring and maintenance activities, as needed, to maintain existing conditions.

CHAPTER 4 – LIST OF PREPARERS

4.1 NEPA Project Management

4.1.1 Tennessee Valley Authority

Erica McLamb
Education: B.S Marine Biology
Project Role: TVA NEPA Project Manager
Experience: 23 years ecological evaluations, environmental permitting, regulatory compliance and NEPA compliance.

Carol Freeman, PG
Education: M.S., Geological Sciences and B.S., Geology
Project Role: TVA NEPA Specialist
Experience: 14 years managing and performing NEPA compliance, 29 years in geological evaluations and mapping

4.1.2 HDR Engineering, Inc.

Charles P. Nicholson, PhD
Education: Ph.D., Ecology and Evolutionary Biology; M.S., Wildlife Management; B.S., Wildlife and Fisheries Science
Project Role: QAQC and Technical Advisor
Experience: 26 years in NEPA Compliance, 17 years in wildlife and endangered species management

Misty Huddleston, PhD
Education: Ph.D., Natural Resources, M.S. and B.S., Wildlife and Fisheries Sciences
Project Role: HDR Project Manager
Experience: 16 years in environmental permitting and regulatory compliance, NEPA compliance, species management

Nicole Guigou
Education: Ph.D., Aquatic Resources and Integrative Biology, M.S. and B.S., Biology
Project Role: HDR Deputy Project Manager
Experience: 15 years in wetland delineations and endangered species management, 11 years in environmental permitting and regulatory compliance

4.2 Other Contributors

4.2.1 Tennessee Valley Authority

Carrie Williamson, P.E., CFM
Education: B.S. and M.S. Civil Engineering
Project Role: Floodplains and Flood Risk
Experience: 11 years in Floodplains and Flood Risk; 3 years in River Forecasting; 11 years in Compliance Monitoring

Chloe Sweda
Education: B.S., Earth and Environmental Science
Project Role: Managed and Natural Areas
Experience: 5 years of experience in Natural Resource Management

David Nestor
Education: M.S. Botany, and B.S., Aquaculture, Fisheries, & Wildlife Biology
Project Role: Terrestrial Ecology and Threatened and Endangered Plants
Experience: 21 years in Floristic Surveys, Threatened and Endangered Plant Surveys, Vegetation, Plant Ecology, and Invasive Plant Species,

Elizabeth B. Hamrick
Education: M.S., Wildlife and Fisheries Science and B.A. Biology
Project Role: Terrestrial Ecology (Animals), Terrestrial Threatened and Endangered Species
Experience: 17 years conducting field biology, 12 years technical writing, 8 years compliance with NEPA and ESA

Derek Reaux
Education: PhD, Anthropology; MA, Anthropology; BA, Anthropology
Project Role: Cultural Resources
Experience: 11 years in Archaeology and Cultural Resources Management

Sara Bayles Dollar
Education: M.S., Sport and Recreation Management and B.S., Outdoor Recreation Management
Project Role: Recreational Areas
Experience: 3 years of experience in Outdoor Recreation Management

Todd Amacker
Education: M.S. Wildlife and Fisheries Science, B.S. Environmental Science
Project Role: Aquatics
Experience: 12 years working with threatened and endangered aquatic fauna in the American Southeast; 7 years NEPA and ESA Compliance

4.2.2 HDR Engineering, Inc.

Al Myers
Education: Completed credits toward B.S., Business Administration
Project Role: Technical Editing
Experience: 22 years in Administration

Alex Lefitz
Education: B.S. Geology
Project Role: Solids and Hazardous Waste, Geology and Groundwater
Experience: 7 years

Erin Settevendemio
Education: M.S. Fisheries and Aquatic Sciences
Project Role: Biological Resources; Natural Areas, Parks, and Recreation
Experience: 14 years in fisheries and biological sciences; USACE, NEPA, and FERC regulatory processes and compliance

Ivan Maldonado
Education: B.S., Natural Resource & Environmental Economics
Project Role: Surface Waters and Wetlands
Experience: 10 years in wetland delineations and environmental permitting

Karen Burchardt
Education: M.S. Environmental Engineering; B.S. Civil Engineering
Project Role: Air Quality and Greenhouse Gas Emissions
Experience: 23 years

Joshua N. Fletcher, RPA
Education: M.A., Anthropology (Archaeology); B.S., Architectural Design
Project Role: Cultural Resources
Experience: 25 years in cultural resources management, regulatory compliance, NEPA documentation, and project management

Mark P Filardi, PG
Education: M.S., and B.S., Geology
Project Role: Groundwater & Water Quality, Waste Management
Experience: 29 hydrogeology and contaminated site assessment & remediation

Miles Spenrath
Education: B.S., Environment and Natural Resources
Project Role: Soils, Prime Farmland, Visual Resources, Noise, Transportation
Experience: 12 years in NEPA compliance

Rebecca Colvin
Education: M.S., English; B.S., English
Project Role: Socioeconomics & Environmental Justice
Experience: 26 years

Sarah Weyler
Education: B.S., Environmental Science: Policy & Planning
Project Role: Public & Occupational Health and Safety, Natural Areas, Parks and Recreation
Experience: 1 year in NEPA preparation

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CHAPTER 5 – LITERATURE CITED

5.1 Literature Cited

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Appendix A – Response to Public Comments Received on the Draft Environmental Assessment During the Public Comment Periods

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Appendix A – Responses to Public Comments on the Draft Environmental Assessment for the SAULPAW MILL DAM REMOVAL Project

A draft of this environmental assessment (EA) was released for public comment on November 15, 2023. The comment period closed on December 18, 2023. The Draft EA was transmitted to state, federal, and local agencies and federally recognized tribes. It also was posted on TVA's public NEPA website. Notice of availability of the draft and the request for comments was published in newspapers serving the Saulpaw Mill Dam Removal project area. TVA accepted comments through an electronic comment form on the project website, by mail, and by email.

Due to public interest, TVA held a second public comment period from February 20 through March 18, 2024. During this comment period, TVA held an in-person open house on March 7 at Calhoun Elementary School to discuss the proposed dam removal. This public comment period and open house were advertised in the same manner as the previous public comment period. About 40 people attended the open house.

TVA received 39 comments, including a petition with 105 signatures, during the first comment period and an additional 16 comments during the second comment period. TVA also received an online petition opposing the dam removal that received over 600 signatures between late November and late March. The issues raised during the two comment periods were similar, with about three-quarters of all commenters opposed to the removal of the dam. The most frequently mentioned reason for opposing removal was the historical significance of the dam. Other reasons for opposing removal included the effects on recreational use of the dam site and on the scenic attractiveness of the dam. About a quarter of the commenters supported removal of the dam, mostly because of the predicted improvement in the size and diversity of the aquatic community in Oostanaula Creek. TVA has carefully reviewed all comments and the comments and TVA's responses to them are in the following table. TVA has also revised parts of the text of the EA in response to the comments.

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Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
1	The only dams you should consider removing are the ones built by TVA in the last 90 years or so. This handmade, historic, community centered, agrarian modeled, stone mill dam in Appalachia should be left intact as is. It's maintenance free, it's historic— not some modern obstacle. Y'all already condemned it and tore down the mill building. Leave the hand chiseled, local stone blocks in place just as they were put there— along with the blood, sweat, and tears of the guys who built it, they're not here to defend their work. It's a local treasure. It's a state treasure. It's a national treasure. It's an international treasure. It shows mankind's connection to the land by using local materials to harness natural water power to grind meal for food and logs into lumber. Don't confuse it with any TVA, Bureau of Reclamation, Army Corps of Engineers, or modern private hydroelectric dam. Everyone that built that agrarian centered mill dam is long deceased. Let it go back into the earth on its own, don't maintain it, but don't expedite its demise. Let people hundreds of years from now see it and understand it's purpose in the local community. TVA's remarks about flood control, a swimming/boating hazard, wildlife protection, farmland erosion, etc. are very weak arguments but typical of any large scale, bureaucracy riddled organization with legal powers that some have formerly called the "God committee." Tellico Dam nailed your coffin shut regarding the honest opinion of your interest in the "greater good." Leave the structure. Go install some solar panels instead, that's a much better use of y'all's time and effort. Plant some more trees. Phase out the coal and nuclear crap. Maybe beef up your newer dams so they can handle the random extreme southeastern rain events so cities like Chattanooga and Nashville (I know—it's not in TVAs domain, but, it's the same principle) don't flood any more — or we could just not build cities in floodplains. Y'all should have a slogan other than "built for the people." You could start with "TVA: Solve 1 problem—Create 10 more!". Or personally my fave… "TVA: We'll ruin it now so your grandchildren won't have to!" Look, what's in the past is done. We only have the present. Let's go forward by learning from the past and estimating what the future could hold. Leave the Saulpaw Mill Dam as it is and focus on more important issues like overpopulation, pollution, natural disasters, or wilderness protection. Thanks.	Comment noted.	Forrest Easterly	November 25, 2023
2	It was recently brought to my attention that the TVA is considering the removal of the Saulpaw mill dam in Calhoun, TN. As you are aware, this area has significant historical connections to the Cherokee Indians, and we want to help protect our historical heritage here in Charleston and Calhoun. More and more interest groups are coming to our area thanks to the hard work of the Hiwassee River Heritage Center. We have to protect the remaining historical sites for future generations. It has become a favorite place for the locals to fish along the Hiwassee River. There have never been any safety issues with the dam in the past. Removal of the dam and surrounding cut stones would only jeopardize the riverbank to erosion with the many passing speed boats on the Hiwassee River, which may then create a structural concern for the railroad bridge which travels directly over the dam. The Oostanaula Creek is a good creek to explore by canoe or kayak, as it runs all the way north to Athens. A simple portage around the dam would allow for river explorers to access the creek. For these reasons, we ask that you retract your proposal for removal of the Saulpaw mill dam. Thank you,	Comment noted. The historical significance of the dam and TVA's proposed actions to mitigate the impacts of removing this historic structure are described in the revised Section 3.16 of the EA. Mitigation for impacts to the historic dam was developed through the Section 106 consultation process with the Tennessee State Historic Preservation Office, the associated federally recognized Tribes, and in collaboration with the Charleston-Calhoun-Hiwassee Historical Society. TVA did not receive responses from the Tribes. Recreational use of the area and potential effects to recreational resources are described in Section 3.11 of the EA which has also been revised to better describe current and likely future recreational use of the area. The proposed action includes measures to protect the railroad bridge pier from scour and erosion.	Ed Rose and Connie Rose	November 29, 2023
3	Please take no action except for removing the gate to allow for free movement of aquatic life. The structure has historic value as is. Should be designated as historic heritage site.	Comment noted. Also see the response to Comment #2.	Bob Easterly	November 29, 2023
4	The dam should be preserved as a historical landmark. We as a population have erased too much history for supposedly bettering our lives. In this situation it is unnecessary and more pertinent to preserve the history!	See the response to Comment #2.	Cindy Duncan	December 1, 2023

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
5	The Saulpaw Dam is part of Calhoun's natural and historical heritage! Please save our McMinn County history for generations to come.	See the response to Comment #2.	Bethany Stokes	December 1, 2023
6	Please do not destroy this historical landmark. It is unique to Calhoun and the history of McMinn County. History is valuable. My mother and her family grew up in Calhoun and cherish it as a strong community (then and now). Please reconsider and don't do this.	See the response to Comment #2.	Sarah Prince	December 1, 2023
7	February 19, 1819 John C Calhoun who was Secretary of War for the United States signed a treaty with a group of Cherokee Chiefs ceding what is now McMinn County and several other counties to the United States. The Hiwassee District in which Calhoun was to be located was in the cession. One of the Chiefs who traveled to Washington was John Ross and his brother Lewis Ross. According to the terms of this treaty, any Cherokee who chose to become an honorary citizen of the United States would be awarded 640 acres of a personal dwelling. The county court was organized at the home of Major John Walker in Calhoun. Chief Walker was a mixed-blood Cherokee and accepted a 640-acre tract on the north bank of the Hiwassee River. Directly opposite on the South bank, Bank, Indian Agency for the District was located. Chief Walker donated his strategically located land for the county seat. Major John Walker had two tracts of the 640 acres due to the land prior was already Cherokee Nation. John Walker is the grandson of Nancy Ward. The Saulpaw Mill was originally the property of Major John Walker. TVA says in their Purpose and Need For Action Chapter 1 section 1.1 Background: "Constructed in 1869, the dam is eligible for listing on the National Register of Historic Places (NRHP)". They then go onto to state 1.2 Purpose and Need: The purpose of the proposed project is to provide safer conditions for the recreating public and improve aquatic habitat and habitat connectivity for stream fish. In over 169 years there has been ZERO incidents of injury or death at the Saulpaw Mill Dam nor has it hindered aquatic life. This body of water serves as no purpose to the main body ways and should remain as it is if not simply because it is OUR History then because it is where generations after generations of families enjoy the site as it is.	Comment noted. See the response to Comment #2.	Laura Bryan Spann, Charleston-Calhoun-Hiwassee Historical Society	December 18, 2023
8	Please keep the dam as is. The historic value is tremendous, and we don't need to lose any more of our history. TVA has not in the past honored any historic structures, they only seem to destroy what we have. Please change the way you do things. Only do clean up and conservation preserve to the best of your ability.	See the response to Comment #2.	Stephanie Holmes	December 1, 2023
9	Leave it alone. It is part of the history of McMinn County TN. The dam hurts no one. Stop overreaching your purpose.	See the response to Comment #2.	Kaye Presley	December 2, 2023
10	1. Are there any current affiliated costs for maintaining the dam? 2. Are there any projected affiliated costs for maintaining the dam? 3. What is the current structural assessment of the dam? 4. What is the projected structural deterioration of the dam? 5. Are there any immediate safety risks to the general public or those using the creek or Hiwassee waterway? 6. Are there any projected safety risks to the general public or those using the creek or Hiwassee waterway? Thanks!	There are costs associated with an annual inspection. Based the latest inspection in 2018, the dam appears to be in good condition with no signs of instability. There are safety risks associated with low head dams like Saulpaw, with numerous documented fatalities in Tennessee and the U.S. The most recent was at Ketner's Mill low head dam on the Sequatchie River in Marion County Tennessee.	Lynn Taylor	December 2, 2023
11	Speaking as a Hiwassee river property owner and a frequent boater of this section of the river, I am opposed to the removal of said dam. I feel that the dam offers the public an excellent recreational opportunity while posing little to no risk to humans or the environment. I feel like TVA could better use the time, money and resources being used to tear down a historic fixture of our in addressing shoreline erosion and creating opportunities for the public to access and enjoy our river. Please reconsider this proposal and abandon this proposed project.	Comment noted. See Section 3.11 for a description of the effects to recreational resources. See the response to Comment #2 on the historical significance of the dam and TVA's proposed mitigation of the impacts of dam removal.	William L Atchley Jr	December 2, 2023
12	Allow removal of the dam but not complete destruction of this important historic landmark which is important to every person who grew up in Calhoun. It should be protected by being put on the state list of historic places. Allow more options than just destroy it or do nothing.	TVA considered partial removal of the dam; however, after discussion with the project Partners it was decided that removing the	William Pitman	December 2, 2023

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
		entire dam would be the best option to allow for full stream connectivity and support free movement of aquatic organisms and to ensure the remains of the dam would not pose a public safety risk. See the response to Comment #2 on the historical significance of the dam and TVA's proposed mitigation of the impacts of dam removal.		
13	Please leave the dam alone. If you're concerned about environmental impact, rest assured that removing the dam will cause more upheaval than leaving it like it's been for the last 150 years. And recreationally speaking, removing the dam would ruin a great spot for fishing, boating and swimming. Then there's the historical aspect of it. Leave it alone. I guarantee this was brought up by someone who's not even from around here. There, I said me piece.	See the response to Comment #2.	Tim Roberson	December 3, 2023
14	The Saulpaw Dam is part of Calhoun's natural and historical heritage. It should be preserved for future generations.	See the response to Comment #2.	Amelia Reedy	November 30, 2023
15	Do not remove the Saulpaw Mill Dam, historic sites must be protected!!!!!	See the response to Comment #2.	James Taylor	December 4, 2023
16	Please leave Saulpaw Mill Dam as it is and take no action.	Comment noted.	Mary Ledford	December 3, 2023
17	I am a native resident of Calhoun, TN where I attended public schools and college. I currently own farms located approximately two miles from the Saulpaw Mill. This mill is a historic site/feature (1869) for the community. For this reason and as a property owner, I object to any action to destroy and remove the dam.	See the response to Comment #2.	Ron E. Creasman Colonel (Retired) U.S. Army	December 5, 2023
18	Please leave the dam and list as a historical place.	See the response to Comment #2.	Cherie Stuart	December 5, 2023
19	Please do not destroy our history. It also provides so many homes to so many different species in our ecosystem. Please, let it be.	Comment noted. The plant and animal life in the area and the impacts of dam removal on them are described in Sections 3.7, 3.8, 3.9, and 3.10 of the EA. Overall, the removal of the Saulpaw Mill Dam would result in large beneficial effects to aquatic life in the Hiwassee River by providing access to up to 116.5 miles of perennial stream habitat within the Oostanaula Creek watershed	Mecalah Senters	December 10, 2023
20	Good friend alerted me to Saulpaw Dam removal and I find it a shame to remove history of our forefathers if not absolutely necessary. TVA has done a lot or good but there is balance that has to be struck with community. Less is more in my opinion. I personally grieve [over] a piece of property taken by TVA from my grandfather for the Candies Creek WMA.	Comment noted.	David Cantrell	December 5, 2023
21	I'd like to know why TVA wants to tear out the Saulpaw Dam? It being on historical record. This is very disturbing news, I'm fully against this	The purpose and need for removal of the dam are described in Section 1.2 of the EA. Your opposition to the action alternative is noted.	Jeff Jenkins	December 14, 2023
22	First, thank you and TVA for all you do to make the Tennessee Valley such a wonderful place to live. Second, please allow me to join those who strongly oppose the removal of the Saulpaw Mill Dam on the Hiwassee River. I have navigated the Hiwassee, all the way up	Comment noted.	Daniel Gilley	December 7, 2023

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
	to its convergence with the Ocoee River and the old mill dam is one of many historic aspects of the trip we enjoyed. We need to preserve all of the history we possibly can, and this dam is such a wonderful part of our rich heritage. Thank you			
23	I hope that the low dam and parts of the old mill will not be disturbed. It is certainly a part of Calhoun history going back to the middle 19th century that should be preserved.	See the response to Comment #2.	Anne Anderson	December 16, 2023
24	The Oostanaula Creek and the Hiwassee River have a remarkable natural history and heritage that is many tens of thousands of years old. Across millennia, these waterways evolved within their surrounding environment, being accustomed to carrying an expected amount of water and sediment from the surrounding watershed to downstream waterways. An incredible diversity of plants and animals evolved within and along these waterways. When we built this dam, we eliminated a tremendous amount of native habitat and degraded local ecology dramatically. Though the dam in itself is tied to the history of humanity's industrialization and engineering feats, it also impacted and disrupted tens of thousands of years of natural history upon its completion. This dam removal could allow us to restore this remarkable natural history, which is innately tied to the human history that preceded the dam. The potential ecological benefits of this dam removal, in particular, have been identified by the TN Aquatic Connectivity Team - an organization made up of nonprofit, for profit, and government water quality professionals - as having the most potential for improving water quality in our state. Benefits of Dam Removal would include: - Improved natural flow variations and stream bank habitat Dams alter natural flow variations. Under unaltered conditions, streams have seasonally varying, high and low flows, and many native animal and plant species are adapted to this natural variation. Dam removal can help restore natural flow variations and natural stream bank habitat. - Improved natural temperatures and nutrients levels Dams alter stream temperature and nutrient levels. When water above a low-head dam pools, it alters water temperatures and pools nutrients. Many aquatic species are sensitive to temperature changes and nutrient loading. Dam removal can help restore natural temperatures in a stream and prevent nutrients from pooling above obstructions. - Restored natural sediment deposition Streams and rivers naturally experience sediment deposition. Faster waters carry more sediment downstream, while slower waters carry less. Because dams slow down water, they cause sediment to drop to the bottom of the stream, behind the dam. Dam removal can restore natural sediment deposition, reduce siltation of important spawning and feeding habitat, and allow debris and small rocks to pass through waters, as they do in healthy stream habitats. - Unobstructed species passage Dams disconnect the natural flow of water thus altering the natural life cycles of aquatic species. Migrating fish and mussel species, for example, are unable to pass, and as a result, populations become isolated. Strategic dam removals can open miles of new habitat to the many species that rely on free-flowing waters to live and reproduce. - Improved river recreation Poorly maintained dams can also be a safety hazard for river users. Dam removal can enhance recreation and safety on area waterways and provide paddlers with unobstructed passage. - Economic benefits Maintenance costs for an older dam often outweighs the cost of removing it. In addition, studies have found that property values are higher along free-flowing streams and rivers than they are next to impounded water resulting from low-head dams. Thank you for the opportunity to comment, Gray	Your support of Alternative B is noted.	Gray Perry	December 12, 2023
25	American Rivers is grateful to the Tennessee Valley Authority for the opportunity to comment on their draft environmental assessment (EA) for the Saulpaw Mill Dam removal project in McMinn County, Tennessee. Upon review of the document and consideration of the	Your support of Alternative B is noted.	Anabel Winitsky, Associate Conservation	December 15, 2023

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
	potential benefits in the Proposed Action, Alternative B scenario, American Rivers enthusiastically supports the managed removal of Saulpaw Dam. Life depends on rivers. Free-flowing rivers provide our nation's most important natural resource, clean water. Selective removal of dams, particularly those that are outdated or unsafe, is an economical and effective solution for eliminating public safety risk and dam-owner liability, while improving river health. Nothing brings a river back to life like removing a dam. Dam removal restores native aquatic life to rivers, increases climate resilience, and reduces the risk of dam failure. While many dams have important uses such as water supply, flood management, and hydropower, many others – including the Saulpaw Dam – have reached the end of their useful life and represent little to no benefit, but a high cost especially to the environment. As indicated in the EA, the Saulpaw Dam poses adverse risks to safety due to the unresolved risk of hazardous conditions with potential implications to economic, recreational, and environmental justice outcomes on Oostanaula Creek and the Hiwassee River. Importantly, the Saulpaw Dam creates adverse, continuous impacts to aquatic ecology in the watershed due to accumulating sediment behind the barrier and the disconnect of aquatic organism passage. All these concerns would be permanently alleviated by the dam's removal. While the cultural significance of the Saulpaw Dam as 19th century mill complex can be honored through appropriate mitigation like signage or reports, the comprehensive benefits to ecology support removal. Our mission to protect wild rivers, restore damaged rivers and conserve clean water for people and nature has never been more necessary or more urgent. We hope TVA will take this substantial step toward our shared vision of a nation of clean, healthy rivers that sustain and connect us – benefiting people and wildlife, cities and rural communities, the economy and the environment.		Director, American Rivers	
26	Please keep the dam.	Comment noted.	Max Worthey, Trout Unlimited	December 15, 2023
27	Saulpaw dam should not be removed. It is a historic site.	See response to Comment #2.	Debra Sue Allen-Hendrix	December 17, 2023
28	The Saulpaw Dam is a scenic place. At various times, I have seen a variety of wonderful wildlife including an osprey swooping into water, blue herons fishing along the bank side, water snakes swimming toward the shore, and a very large snapping turtle sunbathing, minding his own business. Throughout the year, fishermen and their families can be found fishing for relaxation. In the summertime, it is the launching point for Calhoun's Rivertown Festival's Duck Race. It's a special place that links the modern world with nature, and our present with our past. To lose the Saulpaw Dam would to be to lose a special piece of our shared natural and historical heritage. I encourage you to let it be and focus on another project.	Comment noted. The effects of dam removal on wildlife and recreational use of the area are described in Section 3.8 and 3.11 of the EA. Removal of the dam would not affect the use of the adjacent Hiwassee Road bridge as the launching point for the duck race.	Timothy A Womac	December 18, 2023
29	I am personally in favor of the removal of this dam. At the very least, a fish ladder should be installed. I live upstream and have fished Oostanalla/ or Eastanallee for years. All we have ever caught are sucker fish and hellbender salamanders. No migratory fish at all. I do however have questions about whether or not removing the obstacle will have any effect on the giant salamanders. Although useless as water game, they are quite unique.	Comment noted. As described in Section 3.9 of the EA, the removal of the dam is expected to improve the fishery in Oostanaula Creek. It could also improve habitat conditions for the hellbender.	Charles Barker	December 3, 2023
30	Please do not destroy our historical Saulpaw Mill Dam. It is a landmark in McMinn County, TN. I am begging you as a concerned citizen to please allow it to remain as it is standing now.	See response to Comment #2.	Glenda Rowland	December 18, 2023
31	Please accept this letter requesting that TVA reconsider removing the Saulpaw Mill Dam. The dam holds rich history and is a real life illustration of days gone by. The existence of the dam provides an opportunity to share information and stories of the past. The dam is a unique feature of the river system. From a perspective across the river in Bradley County, many of our residents enjoy the river and its unique personality. We value our historical assets and would be saddened to see this one removed. We also value our neighbors in Calhoun and know this is an important landmark in the history of the town. Thank you for your consideration of this request along with the many that have been sent.	See response to Comment #2.	Melissa Woody Vice President, Tourism Development, Cleveland/Bradley Chamber of Commerce	December 19, 2023
32	I want to add my voice to those who object to the removal of the Saulpaw mill dam. I have kayaked by the dam a number of times and enjoy thinking of the history of all who lived in the area all the way back to the first Cherokee mill in this place. I see no need to remove it. It has partially blocked that creek for 150 years.	See response to Comment #2.	Mary Alton	December 16, 2023

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
33	Please explore all options, decide on a course of action, do whatever is necessary to save the Historical Saulpaw Dam.	See response to Comment #2.	Karla Alton	December 16, 2023
34	The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the Tennessee Valley Authority's (TVA) Notice of Availability of a Draft Environmental Assessment (EA) – Saulpaw Mill Dam Removal. These documents cover the potential environmental, socioeconomic, and cultural impacts associated with the removal of the Saulpaw Mill Dam in McMinn County, Tennessee. TVA considered two alternatives: the proposed action, to remove the dam, and a no action alternative. The proposed action would involve site preparation and vegetation clearing, deployment of oil booms to restrict recreational boat access, installation of sediment and erosion control measures, stabilization of the streambanks and railroad abutment, and removal of the dam liftgate, pier, and main dam blocks to streambed level. TDEC is the environmental and natural resource regulatory agency in Tennessee with delegated responsibility from the U.S. Environmental Protection Agency (EPA) to regulate sources of air pollution; solid and hazardous waste; radiological health issues; underground storage tanks; and water resources. TDEC's comments are made in the context of the proposed action alternative. TDEC has reviewed the Draft EA and has the following comments: Generally, TDEC supports the removal of dams to restore stream connectivity and improve aquatic habitats. This specific dam removal would require an Aquatic Resource Alteration Permit (ARAP). Depending on the constituency of the sediment (e.g., silt, gravel, contaminated materials, etc.), it may not be permittable to place the excavated 130 cubic yards of silt in the stream channel. TDEC notes that this will be addressed in the ARAP process. TDEC appreciates the opportunity to provide comment on this Draft EA. These comments are not indicative of approval or disapproval of the proposed action, nor should they be interpreted as an indication regarding future permitting decisions by TDEC. Please contact me should you have any questions regarding these comments.	Environmental permitting requirements are described in Section 1.7 of the EA. The results of a chemical analysis of the accumulated sediment upstream of the dam are described in Section 3.4 of the EA.	Jennifer Tribble, Director, Office of Policy and Planning, Tennessee Department of Environment and Conservation	December 15, 2023
35	The Nature Conservancy (TNC) has reviewed the Environmental Assessment for the Saulpaw Mill Dam Removal and supports the action alternative of removing the dam. We believe TVA's approach to minimizing and mitigating impacts to historic resources will maintain or enhance the public's ability to access and appreciate the incredible history of this structure and site. Furthermore, we believe the benefits of removal outweigh the costs in terms of long-term improvement to water quality and habitat in Oostanaula Creek and the Hiwassee River, as well as public safety and recreation. TNC has worked closely with TVA and many other agencies and organizations as part of the Tennessee Aquatic Connectivity Team (TACT) to address the environmental and public safety issues created by lowhead dams that have outlived their intended purpose. TACT developed a statewide barrier prioritization tool that analyzes and ranks nearly 1,600 dams in the state based on expected habitat and species restoration potential from removal. Of all these dams, Sawpauh dam ranks in the top 12% of dam removal priorities statewide. Oostanaula Creek and the Hiwassee River are important tributaries to the Upper Tennessee River mainstem that provides habitat for nearly 130 different fish species, including 14 GCN fish species. These include the federally listed Laurel Dace and Bluemask Darter. Many of these GCN species have been extirpated from large portions of their historic range in the Tennessee Basin and now currently only exist in a small number of widely separated localities. Within the Hiwassee River watershed, Sawpaul Mill Dam represents a passage barrier to small body fish species, which are not only a critical link in the trophic order of the Oostanaula/Hiwassee system, but also act as host fish for numerous species of mussel glochidia (including 36 GCN species of mussels that occur in the Hiwassee watershed). The proposed dam removal addresses several factors that have led to a decline in fish diversity including habitat loss, declines in water quality, and loss of stream connectivity. TNC has conducted strategic GIS assessment of Oostanuala Creek and the Hiwassee mainstem and modeled the potential habitat occupancy footprints of GCN species based on the flowlines of known GCN occurrences below the dam and potential upstream habitat segments based on species mobility. This modeling suggests that the dam removal will expand nearly 51 linear miles of habitat for GCN fish species. Because of the deep historical significance of the site and structure, TNC offers support and urges TVA collaborate with partners and the local community on historic mitigation efforts that will document and preserve the historic features of the property, while making the site safer and re-connecting habitat in this globally significant aquatic ecosystem.	Your support of Alternative B is noted. As described in Section 3.9 of the EA, the removal of the dam is expected to improve the fishery and other aquatic life in Oostanaula Creek.	Rob Bullard, The Nature Conservancy in Tennessee	December 14, 2023

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
36	The decision to deface the historic site of the Saulpaw Mill and Dam cannot ethically be made without consideration of its role in the wider historical context of Calhoun and McMinn County, Tennessee and the homelands of the indigenous population of Cherokee people. Since the TVA's comprehensive analysis includes the ecological viability of the entire Oostanaula waterway as presented in the document *Saulpaw Mill Dam Removal Draft Environmental Assessment; McMinn County, Tennessee; 2023*, the assessment should encompass the historical context of the area surrounding the mill site. The history of the site called Millwood has evolved over two centuries. Prior to the 1819 Calhoun treaty and Hiwassee Purchase, lands north of the Hiwassee, including the water sources, were considered as communal property. Cherokees did not claim ownership of the land, but did own the improvements they had made, such as buildings, mills, orchard trees, and crops. The Oostanaula Creek flows toward the Hiwassee River through lands of the Cherokee people. A section of the Creek was tended from the early 1800s by John Walker, Senior, a Cherokee businessman and the grandson of Nancy ward, beloved woman of the Cherokee Nation. Walker was operating a grain mill along the creek, providing essential services to local Cherokees. The Calhoun Treaty of 1819 between U.S. Government and the Cherokee Nation included stipulations for certain Cherokees, upon forfeiture of their Cherokee citizenship and considered to be capable of managing their own affairs, to be granted ownership of a 640-acre reservation. These reserves were documented in surveys conducted in 1820. After the Hiwassee Purchase, at least three locations within the Hiwassee District along the Oostanaula Creek continued to support Cherokee families, by providing a clean water source and generating power for grain mills. Dr. Alan Burd Grubb was granted a 640-acre reserve in right of his Cherokee children, at what is now the crossroads of Co. Rd. 740 and Co. Rd. 730. Grubb, a Cherokee and Chickasaw interpreter, and a surgeon for the Cherokee regiment at the Battle of Horseshoe Bend, claimed his reserve at the location on Oostanaula to provide a water source for his farm. A textile mill was later built at this location by James Gettys, with the Oostanaula Creek providing a significant power source. (NRHP # 82001731) John Walker, a Cherokee leader, and friend of President Andrew Jackson, had served in a regiment of Cherokees during the War of 1812 and was commissioned as a major at the Battle of Horseshoe Bend in 1814. After the war, Walker returned to his home and continued to operate a profitable ferry down river from the mouth of the Oostanaula on a primary trade route of Cherokees and early white settlers. Major Walker, who had been instrumental in the negotiation of the Treaty, claimed his primary reserve at the site of his home and ferry. In 1819, walker founded the town of Calhoun and in March 1820, McMinn county was established at Walker's house. Because of his assistance to the U.S. government, Walker was granted an additional reserve at the site of his mill on the Oostanaula Creek. In 1825, Walker's son-in-law, Colonel Gideon Morgan, Jr., also a friend of President Jackson and the commander of the Cherokee Regiment at the Battle of Horseshoe Bend, purchased Walker's Mill Reservation property. The property was later purchased by Morgan's daughters and the ownership divided between Margaret Morgan Hanks (Eiffert) and Elizabeth Morgan McElrath (Eblin). The families established a home, Millwood, where Cherokee children were born and marriages conducted, and a grain mill and sawmill were built at the mouth of the Oostanaula. They were active members of the community and Margaret Hanks-Eiffert joined the Hiwassee Baptist Church located about two miles upriver. In 1869 in the aftermath of the civil war, the Hanks-Eiffert and McElrath-Eblin families decided to join their extended families who had re-located west in Oklahoma during the forced removal of the Indigenous tribes. The mill property was sold to Emeline and G.W. Saulpaw, an expert stone mason, bridge builder, and steamboat company operator. Saulpaw expanded the capacity of the mill with the installation of the most sophisticated equipment available, manufactured by Globe Iron Works Company in Dayton, Ohio. The Oostanaula provided the power to run three American Turbine wheels, grinding 600 bushels of grain every 24 hours equaling two train-car loads per week. The mill operation then continued to provide a food source for area families and a system for farmers to market their surplus grain.	See the response to Comment #2 on the historical significance of the dam and TVA's proposed mitigation of the impacts of dam removal.	Laura Bryan Spann, Tennessee Chapter President, National Trail of Tears Association, Board member Charleston-Calhoun-Hiwassee Historical Society; and nine other historical society Board members	December 18, 2023

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
	The mill, later operated by his son and grandson, G.L. Saulpaw and Grady Saulpaw, remained in the Saulpaw family until sold in 1932. In 1940, TVA construction of the Chickamauga Dam, creation of the Chickamauga Reservoir, and the raised level of the Hiwassee river spelled the closing of the business and demise of the Calhoun landmark. The building was purchased by TVA and destroyed, leaving the stone mill dam as the only remnant of the 70-year Saulpaw mill operation and the near 150-year history of grain production at the site. After the loss of the mill building, the mill dam site remained a place of unique scenic beauty viewed from either above while standing on the bridge over the Oostanaula Creek (called Eastanallee by locals), or observed by boaters passing on the Hiwassee. Even after the railroad spur was installed, disturbing the romance of the scene, locals continue to visit and appreciate the sound of the stream waters. I have had the opportunity to personally witnessed emotional response to the site by two Cherokee friends. Those occasions are the primary reason for this appeal for consideration. After the mill was sold by the Hanks-Eiffert and McElrath-Eblin families, they moved to Oklahoma, leaving behind “the bones of their ancestors”, their father, and of their children. The husband of Elizabeth, Hugh McDowell McGrath and two of their children rest in the Calhoun Community Cemetery. Margaret Hanks-Eiffert withdrew her membership in the Hiwassee Baptist Church and moved to Webbers Falls, Oklahoma where she was a founding member of the Webbers Falls Baptist Church. In 2014, I had the honor to meet and become friends with Troy Wayne Poteete, Executive Director of the National Trail of Tears Association. Troy Wayne, a former justice of the Cherokee Nation Supreme Court, was raised and continues to live in Webbers Falls, OK. He has conducted extensive research on the Hanks Family documenting their contributions to the Town of Webbers Falls and their association with Calhoun, TN. In 2019, I had the privilege to take Troy Wayne on his first tour of the Calhoun community, including the site of the Hanks family home. We traced the route Margaret Hanks would have taken by horse and cart from the Oostanaula Creek to the Hiwassee Baptist Church and he paid his respects to the Morgan, Hanks, and McElrath family members resting in the Calhoun Cemetery. He expressed to me that it had been a “lifelong goal” to visit the places where the Hanks family had lived and worshipped. Troy Wayne, as a representative of the Cherokee people, acknowledged that the current scene did not precisely reflect the physical locale of the 1860s, but the emotional connection was just as significant. Andrea Squires, a California resident and direct descendant of Major John Walker recently visited Calhoun and was brought to tears as she stood in the footsteps of her Cherokee ancestor. In closing, the complete history of the Walker-Morgan-Hanks-McElrath-Saulpaw home place and mill site is extensive with multiple property transactions. So much of the history has previously been lost by intentional dismantling in the name of progress, or by a tragic fire in 1971 which destroyed the beautiful Dutch- architecture mansion built in 1869. Leaving the Saulpaw Mill Dam untouched is an opportunity to salvage one of the few remaining pieces of Calhoun history and allow the Oostanaula to continue its flow over the uniquely quarried limestone blocks embedded into the riverbank of the beautiful Hiwassee. Those stones are not only the physical foundation of the historic site, but more importantly are the cornerstones of two centuries of local history.			
37	February 19, 1819 John C Calhoun who was Secretary of War for the United States signed a treaty with a group of Cherokee Chiefs ceding what is now McMinn County and several other counties to the United States. The Hiwassee District in which Calhoun was to be located was in the cession. One of the Cheifs who traveled to Washington was John Ross and his brother Lewis Ross. According to the terms of this treaty, any Cherokee who chose to become an honorary citizen of the United States would be awarded 640 acres of a personal dwelling. The county court was organized at the home of Major John Walker in Calhoun. Chief Walker was a mixed-blood Cherokee and accepted a 640 acre tract on the north bank of the Hiwassee River. Directly opposite on the South bank, Bank, Indian Agency for the District was located. Chief Walker donated his strategically located land for the county seat.	Comment noted. See the response to Comment #2. As stated in Section 1.1 of the EA, although TVA is not aware of any fatalities associated with the Saulpaw Mill Dam, according to the Brigham Young University Department of Civil and Environmental Engineering, more than 440 deaths have occurred as a result of the currents created by small dams since the 1950s (BYU 2015).	Text of Change.org petition with about 600 signatures by March 18, 2024. Originated by Brandy Bishop	n/a

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
	Major John Walker had two tracts of the 640 acres due to the land prior was already Cherokee Nation. John Walker is the grandson of Nancy Ward. The Saulpaw Mill was originally the property of Major John Walker. Tva says In their Purpose and Need For Action Chapter 1 section 1.1 Background "Constructed in 1869, the dam is eligible for listing on the National Register of Historic Places (NRHP)" They then go onto to state 1.2 Purpose and Need. The purpose of the proposed project is to provide safer conditions for the recreating public and improve aquatic habitat and habitat connectivity for stream fish. In over 169 years there has been ZERO incidents of injury or death at the Saulpaw Mill Dam nor has it hindered aquatic life. This body of water serves as no purpose to the main body ways and should remain as it is if not simply because it is OUR History then because it is where generations after generations of families enjoy the site as it is. I think History debunked TVA claims as the reasoning to remove the dam but without everyone rallying behind this petition then TVA wins and we will forever have yet another piece of history removed because someone didn't like muddy water after a good rain. Go online to www.tva.com/nepa and let your comments and thoughts be heard! Email: esmclamb@tva.gov let her hear your voice. Major John Walker isn't here with us to fight for us as he did in the war, it's up to us to fight for him now to preserve and protect what he worked and fought so hard for.			
38	This is history, we can't keep dismantling history just because someone doesn't like it. The TVA uses repeatedly the reason is because of POTENTIAL drowning hazard but yet even states there has been no incidents or deaths at Saulpaw Mill Dam. You can't just get rid of something because it could cause hazard. If that's the case Cars could cause accidents and fatalities. Soda may cause our teeth to rot. Sugar feeds cancer, cigarettes could cause cancer. All the things in life could cause harmful effects and yet here they all are. We can't ban something because it may case harm. They state in their Need For Purpose cause that if they leave the Dam they as in TVA will CONTINUE to maintain it and yet they aren't even doing that. They want to rip it out so they don't have to maintain it!	Comment noted. TVA maintenance of the dam is limited to occasional trash removal.	Brandy Bishop, addenda to Change.org petition signature	n/a
39	This is a great idea. If a place has history then why should we get rid of it? That's what is happening to every piece of history we are tearing it down and building houses, apartments, stuff that is just making money instead of having those history places for people to visit those cities. This is why people don't go visiting other states to see history because humans are getting rid of artifacts!	Comment noted.	Heather Lyons, addenda to Change.org petition signature	n/a
40	Moving to this area 4 plus years ago for its beauty and history upsets me that the TVA wants to remove vs repair the history of Calhoun.	Comment noted.	Frank Posca, addenda to Change.org petition signature	n/a
41	Resolution 23-02 A RESOLUTION TO TVA TO SAVE THE SAULPAW MILL DAM **WHEREAS,** TVA has proposed the removal of The Saulpaw Mill Dam; and **WHEREAS,** The Saulpaw Mill Dam has a major historical significance to the City of Calhoun, McMinn County and the surrounding areas; and **WHEREAS,** The Saulpaw Mill Dam has stood as a monument of time for 154 years; and **WHEREAS,** The Saulpaw Mill Dam is located on the 1819 John Walker's Mill Reserve (2nd of 2), Cherokee Treaty of 1819; and **WHEREAS,** John Walker established the town of Calhoun in 1819, being the grandson of Nancy Ward, Beloved Woman of the Cherokee; and **WHEREAS,** the Walker's Mill site was sold in 1825 to Gideon Morgan, member of Andrew Jackson's Cherokee Regiment in the Battle of Horseshoe Bend; and **WHEREAS,** the mill site remained in the Morgan-Hanks-Eiffert and McElrath families until 1869, all descendants of Cherokee families; and **WHEREAS,** the stonework of the Saulpaw Mill Dam was mined and quarried by George W. Saulpaw, a notable bridge builder in the State of Tennessee; and **WHEREAS,** The Saulpaw Mill Dam should be placed on the National Register of Historic Places; and **WHEREAS,** The Saulpaw Mill Dam provides a place of scenic beauty; and	Comment noted. See the responses to Comment #2 and #36.	John Walker, Mayor, The City of Calhoun	December 7, 2023

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
	WHEREAS, for these reasons, the Saulpaw Mill Dam holds a "sacred" place in Calhoun's, McMinn County's and the State of Tennessee's history; and **NOW, THEREFORE, BE IT RESOLVED,** that the City of Calhoun urges TVA not to remove the Saulpaw Mill Dam because of its historical significance; Cherokee Heritage, and Scenic Beauty. **NOW, THEREFORE, BE IT FINALLY RESOLVED,** that the City of Calhoun supports the process and application of the Saulpaw Mill Dam to the National Register of Historic Places to further preserve and ensure its historical significance. Adopted by City of Calhoun Commission, 12/7/2023			
42	We the undersigned express our opposition to TVA in the proposed removal of the historic Saulpaw Mill Dam. We recognize the historical significance of the mill dam not only related to its construction in 1869 by the Saulpaw family, but also its Cherokee importance as the original site of Cherokee John Walker's mill in the early 1800's and later operated by the Morgan and Hanks families also with Cherokee lineage. We believe the mill dam should be preserved as a National Historic Site.	See the response to Comment #2.	Text of paper-based petition with 105 signatures	December 13, 2023
43	I say go ahead and remove it. It has a negative (albeit small) environmental impact, and it has absolutely no usefulness to society as it creates no electricity or recreational benefits. Opponents to removal cite historical significance, but I've never heard of it, so it can't have been that important, and it's not exactly beautiful to look at or anything based on images I've seen of it. We can't just save every last old building (or in this case, dam) just because it's old. It would be one thing if it actually did have significance, like the Cherokee Hotel building in Cleveland currently being converted into the new city hall. But this dam doesn't really have any historical value. In conclusion, due to the environmental impact, and the lack of usefulness or historical significance, I believe it should be removed.	Your support for Alternative B is noted.	Alexander	February 27, 2024
44	There are not many things of historical significance that exist in our area, and you are evaluating the removal of the Saulpaw dam which is one of the few we have remaining. My father, I, my children, and many friends and acquaintances have fished or visited that site many times. To that point, upon cursory examination of about 30 river miles, (16 geographic miles), east and west of Oostanaula creek (i.e., the stream that flows over the dam), there are 22 named rivers, creeks, and branches. In addition, there are 62 unnamed tributaries and backwaters (see attached spreadsheet). My point is as follows, why is TVA interested in this one spot when sufficient tributaries and backwaters exist to promote native aquatic life? In addition, it is the TWRA's responsibility to assess, manage, and when necessary, replenish species that are missing or in decline. The federal government is this case would be usurping the role of the state agency. If TVA is truly interested in restoring native habitat, then I would suggest exploring the replenishment of all the sand and gravel dredged out of the Hiwassee over many years of my lifetime which was taken in very large barge laden quantities. To do so would restore the original shallow water in which native trout could once again thrive. Lastly, I would add that the aeration of the Oostanaula creek water is beneficial for the Hiwassee River as the Oostanaula is, and has been a polluted stream for a very long time. A reply is welcome.	Comment noted. The historical significance of Saulpaw Mill Dam is described in Section 3.16 of the EA and the beneficial effects of the removal of the dam on fish and other aquatic life in Oostanaula Creek are described in Section 3.9 of the EA. TVA and TWRA are members of the Tennessee Aquatic Connectivity Team (TACT) and have worked cooperatively for years to for years to improve habitat conditions and aquatic ecology in the Hiwassee River watershed and other Tennessee River watersheds. In its evaluation of over 1,500 stream barriers, the TACT identified Saulpaw Dam as high priority for removal.	David Stanfield	March 5, 2024
45	I support TVA in it's effort to remove the inoperable Saulpaw dam to restore local fish populations on the Oostanaula Creek.	Comment noted.	Derrick Painter	March 8, 2024
46	Thank You for coming to Calhoun Tennessee on March 7th to meet with us. We are senior members of this community and would urge you to reconsider your plan to remove the Dam. George was born in Calhoun in 1937 and has lived his entire life in this community. I am from North Carolina and my parents moved her in 1958 when my Dad became the Pastor at Calhoun First Baptist Church. We married in 1960 and made our home here. We both love our community and would ask that you reconsider getting rid of our Dam that has withstood the River's flow all these years. It must be constructed very well to still be standing....strong! Things are not built today as they were in years past. We would love to suggest that instead of using the enormous amount of money to destroy.....you would consider using those monies to build and create a beautiful RIVER WALKWAY that all our community could use and enjoy. It would also be enjoyed by many others from various surrounding communities as they visited our beautiful River Walkway.	TVA has recently discussed the feasibility of developing recreational opportunities on TVA-managed lands with the City of Calhoun. Any such developments are outside the scope of this dam removal project.	George & Rebecca Shamblin	March 18, 2024
47	I'd like to share my support for the removal of this dam. Dams impact the natural hydrology of streams, impact benthic habitat for macroinvertebrates by trapping sediment, fragment river ecosystems by preventing aquatic organism passage, alter stream temperatures and dissolved oxygen content, and pose a risk to public safety due to recreation hazards. Though this dam does have historical significance, I'd like to recognize the efforts to preserve that history by consulting with the appropriate agencies and organizations and proposing alternative restoration scenarios. I understand the community's concern about the loss of a historic resource, and I think a balance of recognizing the historic significance while enhancing the health of our rivers and community waters through impoundment removal can be achieved. The benefits of removal outweigh the costs of keeping the dam when considering the maintenance, impacts to water quality, and threats to public safety over our lifetime. Though it is praiseworthy to attempt to preserve our	Your support of Alternative B is noted	Gray Perry	March 6, 2024

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
	history as it is and keep the dam, it is also important to learn from our past impacts and find ways to conserve and improve our natural resources. As such, I support this dam removal and hope TVA will take this substantial step towards a cleaner, safer watershed.			
48	My name is Jason Saulpaw, I've just heard of the plans to destroy the Saulpaw Mill dam. Why is this necessary? This is the oldest remaining landmark in Calhoun of my great great grandfather	The purpose of the proposed dam removal is to provide safer conditions for the recreating public and improve aquatic habitat and habitat connectivity for stream fishes. This is described in detail in Section 1.2 of the EA. TVA acknowledges the historical significance of the dam and potential actions to mitigate the adverse effect of its removal are described in Section 3.16 of the EA.	Jason Saulpaw	December 19, 2023
49	I am new to the area but after doing some research I can't see any reason to remove the dam, it serves as a historical landmark, I do not believe it is harming the habitat & certainly not the people. It gives residents as well as visitors a place to go to relax & have a picnic – if you want to spend some money how about building a picnic area with a covered shelter & grills. Planting flowers and beautifying in general, adding a plaque with the history of the mill would be more valuable than removal. Destruction of historical landmarks is out of control – preserve our history for the younger generations.	See the response to Comment #48. Regarding recreational use of the dam site, TVA does not propose any actions to enhance recreational use of the area. TVA has, however, recently discussed the feasibility of developing recreational opportunities on other TVA-managed lands with the City of Calhoun. Any such developments are outside the scope of this dam removal project.	Susan Jones	March 7, 2024
50	The Saulpaw Mill Dam is one of the last historical landmarks in this area. Pre-USA – Native American heritage is very strong in this area. It has been here 200 years – please leave it.	See the response to Comment #2.	Debbie Moore, Past President of the Tennessee Trail of Tears	March 7, 2024
51	The Saulpaw dam is a historic treasure that we would be remissed to lose. The biodiversity and safety studies that have been done only work in hypotheticals. If these studies showed an actual negative impact I would support the removal, but since that does not exist I can not support this project.	Comment noted. As stated in Section 1.1, although TVA is not aware of any fatalities associated with the Saulpaw Mill Dam, according to the Brigham Young University Department of Civil and Environmental Engineering, more than 440 deaths have occurred as a result of the currents created by small dams since the 1950s (BYU 2015). Section 3.9 includes references supporting research (Sherman 2013) and the Oostanaula Creek Watershed Restoration Plan developed by the University of Tennessee Extension - Biosystems Engineering and Soil Science (Hagen, J., and F. Walker 2007) indicating that removal of the dam would benefit aquatic habitat and aquatic organisms.	Matt Adams	March 7, 2024
52	Please consider the History of the United States of America and the Hiwassee River when making this decision. If some of the handcut stones are removed please consider the History of the Trail of Tears and the Cherokee Indians and maybe donate some to the Historical Society for future generations.	See revised EA Sections 2.1.2 and 3.16 for information on the disposal of the stone blocks, including their use to mitigate the adverse effects on the historical significance of the dam.	Taye Callaway, Charleston-Calhoun-Hiwasee Historical Society	March 7, 2024

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
53	1) I appreciate the talk by the biologist 2) From a public relations point of view, you should have emphasized the natural wildlife restoration from the very beginning. When you announced the removal of the dam you raised passions and memories. 3) I wish there was a way to keep the dam and help the fish 4) If you do remove the dam transport the blocks/stones to the Calhoun/Charleston Historical Museum/Heritage Center. That would be a good-will gesture; it shows that you are not looting historical memories 5) Thank you for speaking to us & listening to us.	Comment noted. Also see the response to Comment #52.	Timothy A. Womac	March 7, 2024
54	The Tennessee Wildlife Federation appreciates the opportunity to submit our comments in reference to the environmental assessment (EA) for the Saulpaw Mill Dam removal. In short, we support the removal of the dam via the managed action alternative. Saulpaw Dam is negatively affecting the aquatic life in the Hiwassee River watershed due to accumulating sediment behind the barrier and the impact the dam has in disconnecting passage of aquatic organisms. Selective removal of dams, particularly those that are outdated or unsafe, is an economical and effective solution for eliminating public safety risk and dam-owner liability, while improving river health. The proposed dam removal addresses several factors that have led to a decline in fish diversity including habitat loss, declines in water quality, and loss of stream connectivity, as well as permanently relieving public safety and recreation risks. The Federation recognizes that while the dam no longer serves its originally intended purpose, there remains historic significance to the site. Therefore, we support the robust mitigation measures to maintain or enhance the public's ability to access and appreciate the history of the Saulpaw Mill dam structure, as called for in this proposal. We support TVA's commitment to collaboration with partners and the local community to meet these mitigation needs as a fundamental component of a comprehensive dam removal project. The benefits of removing the dam outweigh the costs in terms of long-term improvement to water quality and habitat in Oostanaula Creek and the Hiwassee River while simultaneously improving public safety at the site. We ask that TVA move forward with the removal of the dam.	Comment noted. Section 3.16 of the EA has been revised to better describe measures to mitigate the adverse effects to historic resources resulting from the dam removal.	Mike Butler, Chief Executive Officer, Tennessee Wildlife Federation	March 4, 2024
55	Hi my name is Stratos Lay. I was born and raised right up the road from the Saulpaw Mill Dam in Calhoun Tn. I recently read the plans to be taking in action on the possible removal of this listed dam. The listed reasons the dam needs to be taking down are mainly inadequate. As an avid outdoors man I can assure you based on common knowledge that no wildlife is suffering from this dam. When current is low in the Hiwassee river this adds just a little extra. This is one of the most plentiful places to fish that alone tells how much the wildlife enjoys it. This is not only a staple for the outdoors man but others too. This has been a spot for people to be able to go and enjoying nature reliving all stress and worry's just off the pure sounds and sites of this dam. I as well as many others who may not be able to email or stand vow to try to urge the plan to be a no action plan. Leave this dam for many generations to come.	Comment noted. TVA acknowledges the historic, recreational, aesthetic, and fish and wildlife-related qualities of the dam.	Stratos Lay	February 24, 2024
56	I am in favor of the complete removal and of the low head Saulpaw Dam and restoration of Oostanaula Creek. The dam structure serves no modern purpose: power generation, flood control, or water impoundment. Rather the only function it has is to restrict a natural waterway. The ecological impact may be minor but it is still worth restoring the creek to its natural splendor right at its terminus when it deposits into the Hiwassee River. TVA will certainly shoulder the upfront cost to remove the dam, however, it seems the right decision to remove a man made barrier from a by gone era. Finally, it mitigates any future liability from injury sustained by persons trying to traverse the obstruction.	Your support of Alternative B is noted.	Zach Thurman	February 27, 2024
57	The proposed plan to remove the historic Saulpaw Mill Dam is a horrible judgement call by one TVA employee who doesn't understand that this is a historic water feature built by Calhoun's most famous citizen. The employee who made this decision is probably the same person who decided to "save" Sand Island at Watts Bar from erosion by placing rip rock all the way around what was once the most famous beach in Tennessee and a favorite destination of our family. I own the Saulpaw Mill steamboat landing, which is on the farm directly across the river. I bought the farm in 1986. It would be a shame to see it destroyed. Please leave Saulpaw Mill Dam alone!	Comment noted.	W. Allan Jones, Jr	March 11, 2024
58	The Southern Environmental Law Center submits these comments in support of the Tennessee Valley Authority's ("TVA's") proposal to remove the Saulpaw Mill Dam at the confluence of Oostanaula Creek and the Hiwassee River in McMinn County, Tennessee. TVA has an important opportunity to restore natural riverine function and flow to Oostanaula Creek, benefit a wide range of aquatic species, increase floodplain capacity, promote public safety, and improve recreational opportunities by dismantling the Saulpaw Mill Dam	Your support of Alternative B is noted. See revised EA Sections 2.1.2 and 3.16 for information on the disposal of the stone blocks, including their use to mitigate the adverse effects on the historical	Stephanie Briggs and George Nolan, Southern Environmental Law Center	March 18, 2024

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
	and removing it from its current location. The environmental, ecological, public safety, and recreational benefits which would accrue from this action outweigh the cost of removing a historic structure. Yet in acknowledgement of the historic role that the Saulpaw Mill Dam played in the local community, TVA should take steps to commemorate the dam by placing dismantled dam blocks as well as explanatory signage on TVA-owned property next to the current dam site. Doing so strikes an appropriate balance between environmental restoration, public safety, and cultural preservation. I. Removing the Saulpaw Mill Dam Will Result in Significant Environmental Benefits. The Saulpaw Mill Dam is a run-of-river low head dam which stretches approximately 60 feet wide and 16 feet high across Oostanaula Creek at its confluence with the Hiwassee River in McMinn County, Tennessee. Constructed in 1869, the dam is a mason gravity structure comprised of locally-quarried limestone blocks. The Saulpaw Mill Dam was historically associated with a flourmill which was removed from the property decades ago. In its draft environmental assessment analyzing removal of the Saulpaw Mill Dam ("draft EA"), TVA acknowledges that the dam no longer serves its intended purpose and currently "serves no other practical purpose." Despite the Saulpaw Mill Dam's functional obsolescence, its continued existence has a significant impact on the local environment. Specifically, dams like the Saulpaw Mill Dam artificially disrupt riverine flow, alter in-stream water temperature, restrict natural sediment movement, impact floodplain connectivity, segment instream habitat, and isolate aquatic species populations upstream and downstream from the impoundment. TVA's draft EA acknowledges the negative impact that the Saulpaw Mill Dam continues to have on the local environment. For instance, the draft EA notes that Oostanaula Creek has consistently scored as either "poor" or "very poor" under TVA's Index of Biotic Integrity by exhibiting low species diversity, and "the presence of the Saulpaw Mill Dam presents a barrier to upstream fish and mussel dispersal or as a barrier to spawning refuges for lake-dwelling species in the Hiwassee River portion of the Chickamauga Lake such as Smallmouth and Black Buffalo." Removing the Saulpaw Mill Dam will yield considerable ecological and environmental benefits, including: • Restoring Oostanaula Creek to its natural flow regime; • Improving water quality in the formerly impounded area, including by restoring natural dissolved oxygen concentrations and water temperature; • Recovering natural riverine functions including but not limited to sediment release and transport; • Improving aquatic connectivity and allowing for instream migration of fish and other aquatic species; • Restoring instream habitat above and below the dam; and • Restoring hydraulic connection between Oostanaula Creek, Hiwassee River, and the surrounding floodplains. In addition to discrete environmental and ecological benefits, dam removal can trigger beneficial feedback loops such as through enhancing biological productivity, increasing species resiliency, and stabilizing ecosystem community dynamics. In the draft EA, TVA correctly notes that removing the Saulpaw Mill Dam will cause large, permanent benefits to surface water quality and aquatic ecology in the surrounding area. II. Removing the Saulpaw Mill Dam Will Increase Public Safety and Recreational Opportunities. Restoring the natural flow of Oostanaula Creek into the Hiwassee River will also yield recreational and safety benefits. Small, low-head dams like the Saulpaw Mill Dam are notorious public safety hazards which can cause dangerous downstream currents capable of entrapping and killing swimmers, kayakers, and other recreationalists. Low head dams have caused hundreds of drowning deaths in the United States over the past several decades, and removing these structures when they become obsolete is an effective and long-term solution to promote public safety in tandem with outdoor recreation. Removing the Saulpaw Mill Dam would yield recreational and safety benefits to the public. Oostanaula Creek and the area around the dam are used by anglers, paddlers, and swimmers. The draft EA notes that "this area is heavy with recreational traffic," and that the dam has become "an informal access point" for paddlers entering the waterway. Although, thankfully, no deaths appear to have been attributed to the Saulpaw Mill Dam, the well-known hazardous conditions which low-head dam structures create coupled with heavy public use of this area present a real risk that a tragedy could occur. Particularly given that the Saulpaw Mill Dam no longer serves any practical purpose, it would be in the public's best interest to remove this structure in service of safe recreational use of the area. III. TVA Should Construct an Onsite Public Display to Honor the Historic and Cultural Significance of the Saulpaw Mill Dam.	significance of the dam. TVA concurs that the proposed dam removal will have beneficial effects on several resources.		

Comment Number	Comment	TVA Response to Comment	Commentor Name	Date
	From an environmental, ecological, recreational, and safety perspective, it is in the public's best interest that TVA remove the Saulpaw Mill Dam. Yet TVA should do so in a way that honors the historic and cultural significance of the structure. The Saulpaw Mill Dam has been in Oostanaula Creek for over 150 years, and its historic association with the local milling industry has made it eligible for listing on the National Register of Historic Places. Appreciation of the structure is evident in the local press coverage TVA's proposal has generated and by TVA's decision to open an additional 30-day public review and comment period on its draft EA. TVA can strike the right balance between competing interests by removing the Saulpaw Mill Dam from within Oostanaula Creek but staging the removed dam blocks on TVA-owned land abutting the site. The draft EA suggests that TVA is considering doing so along with erecting signage detailing the historic import of the structure. This solution will restore aquatic connectivity, benefit habitat, improve public recreation, and increase public safety, all while acknowledging the important role that the Saulpaw Mill Dam has played in the local community. The Southern Environmental Law Center supports TVA's proposal to remove the Saulpaw Mill Dam from Oostanaula Creek. Removing this structure is in the public interest; however, we encourage TVA to undertake this action in tandem with a plan to acknowledge the historic and cultural significance of the dam through an onsite display. We appreciate the opportunity to provide this public comment.			
59	Harpeth Conservancy is pleased to comment on the Tennessee Valley Authority's environmental assessment (EA) for the Saulpaw Mill Dam. HC is a science-based public interest conservation organization. Our mission is to restore and protect clean water and healthy ecosystems for rivers in Tennessee by employing scientific and policy expertise and collaborative relationships to develop, promote, and support broad community stewardship and action. As relevant to the EA, HC is a member of the Tennessee Aquatic Connectivity Team (TACT) and has experience working on issues related to dam removal through our work on the former Harpeth River low-head dam near the City of Franklin. We understand that TVA is evaluating two alternatives (i.e., taking no action and removing the Saulpaw dam). For two primary reasons, we support the alternative action of managed removal of the dam. First, we're optimistic that the removal alternative can be consistent with maintaining the site's historic significance, though the dam no longer serves its originally purpose, especially if coupled with local collaboration and mitigation measures directed to maintaining or increasing public access. Second, long-term improvement to water quality and habitat in Oostanaula Creek and the Hiwassee River should be the guiding principle for the chosen alternative, and we believe it supports the removal alternative. Indeed, as indicated in the EA, this dam adversely impacts aquatic ecology in the watershed due to accumulating sediment and disconnecting aquatic organism passage. Moreover, we understand that removal has the co-benefit of improving public safety.	Your support of Alternative B is noted. See revised EA Sections 3.16 for information on mitigating the adverse effects on the historical significance of the dam and Section 3.11 for information on impacts to recreation, including public access. TVA concurs that the proposed dam removal will have beneficial effects on water quality aquatic ecology, and public safety.	Dorene Bolze, Ryan Jackwood, PhD, Anne Passino, Harpeth Conservancy	March 18, 2024

Appendix B – Permitting and Agency Coordination

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Project Review Form - TVA Bat Strategy *(06/2019)*

*This form should **only** be completed if project includes activities in Tables 2 or 3 (STEP 2 below). This form is not required if project activities are limited to Table 1 (STEP 2) or otherwise determined to have no effect on federally listed bats. If so, include the following statement in your environmental compliance document (e.g., add as a comment in the project CEC): "Project activities limited to Bat Strategy Table 1 or otherwise determined to have no effect on federally listed bats. Bat Strategy Project Review Form NOT required." This form is to assist in determining required conservation measures per TVA's ESA Section 7 programmatic consultation for routine actions and federally listed bats.*[1]

Project Name: Saulpaw Dam Removal **Date:** Nov 9, 2023

Contact(s): Erica McLamb, Freddie Bennett **CEC#:** **Project ID:** 41474

Project Location (City, County, State): Calhoun, McMinn County, TN

Project Description:

Removal of Saulpaw Dam that was built in 1869. Establishing staging and construction access areas, grading, left embankment terracing, and removal of the lift gate. Removing the dam and remaining pier and dam blocks to an elevation of approximately 678 feet. Approximately 0.02 acres of trees would be removed.

SECTION 1: PROJECT INFORMATION - ACTION AND ACTIVITIES

STEP 1) Select TVA Action. If none are applicable, contact environmental support staff, Environmental Project Lead, or Terrestrial Zoologist to discuss whether form (i.e., application of Bat Programmatic Consultation) is appropriate for project:

- ☐ 1 Manage Biological Resources for Biodiversity and Public Use on TVA Reservoir Lands
- ☐ 2 Protect Cultural Resources on TVA-Retained Land
- ■ 3 Manage Land Use and Disposal of TVA-Retained Land
- ☐ 4 Manage Permitting under Section 26a of the TVA Act
- ☐ 5 Operate, Maintain, Retire, Expand, Construct Power Plants
- ☐ 6 Maintain Existing Electric Transmission Assets
- ☐ 7 Convey Property associated with Electric Transmission
- ☐ 8 Expand or Construct New Electric Transmission Assets
- ☐ 9 Promote Economic Development
- ☐ 10 Promote Mid-Scale Solar Generation

STEP 2) Select all activities from Tables 1, 2, and 3 below that are included in the proposed project.

TABLE 1. Activities with no effect to bats. Conservation measures & completion of bat strategy project review form NOT required.

☐ 1. Loans and/or grant awards	☐ 8. Sale of TVA property	☐ 19. Site-specific enhancements in streams and reservoirs for aquatic animals
☐ 2. Purchase of property	☐ 9. Lease of TVA property	☐ 20. Nesting platforms
☐ 3. Purchase of equipment for industrial facilities	☐ 10. Deed modification associated with TVA rights or TVA property	☐ 41. Minor water-based structures (this does not include boat docks, boat slips or piers)
☐ 4. Environmental education	☐ 11. Abandonment of TVA retained rights	☐ 42. Internal renovation or internal expansion of an existing facility
☐ 5. Transfer of ROW easement and/or ROW equipment	☐ 12. Sufferance agreement	☐ 43. Replacement or removal of TL poles
☐ 6. Property and/or equipment transfer	☐ 13. Engineering or environmental planning or studies	☐ 44. Conductor and overhead ground wire installation and replacement
☐ 7. Easement on TVA property	☐ 14. Harbor limits delineation	☐ 49. Non-navigable houseboats

TABLE 2. Activities not likely to adversely affect bats with implementation of conservation measures. Conservation measures and completion of bat strategy project review form REQUIRED; review of bat records in proximity to project NOT required.

■ 18. Erosion control, minor	☐ 57. Water intake - non-industrial	☐ 79. Swimming pools/associated equipment
☐ 24. Tree planting	☐ 58. Wastewater outfalls	☐ 81. Water intakes – industrial
☐ 30. Dredging and excavation; recessed harbor areas	☐ 59. Marine fueling facilities	☐ 84. On-site/off-site public utility relocation or construction or extension
☐ 39. Berm development	☐ 60. Commercial water-use facilities (e.g., marinas)	☐ 85. Playground equipment - land-based
☐ 40. Closed loop heat exchangers (heat pumps)	☐ 61. Septic fields	☐ 87. Aboveground storage tanks
☐ 45. Stream monitoring equipment - placement and use	☐ 66. Private, residential docks, piers, boathouses	☐ 88. Underground storage tanks
☐ 46. Floating boat slips within approved harbor limits	☐ 67. Siting of temporary office trailers	☐ 90. Pond closure
■ 48. Laydown areas	☐ 68. Financing for speculative building construction	☐ 93. Standard License
☐ 50. Minor land based structures	☐ 72. Ferry landings/service operations	☐ 94. Special Use License
☐ 51. Signage installation	☐ 74. Recreational vehicle campsites	☐ 95. Recreation License
☐ 53. Mooring buoys or posts	☐ 75. Utility lines/light poles	☐ 96. Land Use Permit
☐ 56. Culverts	☐ 76. Concrete sidewalks	

Table 3: Activities that may adversely affect federally listed bats. Conservation measures AND completion of bat strategy project review form REQUIRED; review of bat records in proximity of project REQUIRED by OSAR/Heritage eMap reviewer or Terrestrial Zoologist.

☐ 15. Windshield and ground surveys for archaeological resources	■ 34. Mechanical vegetation removal, includes trees or tree branches > 3 inches in diameter	☐ 69. Renovation of existing structures
☐ 16. Drilling	■ 35. Stabilization (major erosion control)	☐ 70. Lock maintenance/ construction
☐ 17. Mechanical vegetation removal, does not include trees or branches > 3" in diameter (in Table 3 due to potential for woody burn piles)	■ 36. Grading	■ 71. Concrete dam modification
■ 21. Herbicide use	☐ 37. Installation of soil improvements	☐ 73. Boat launching ramps
■ 22. Grubbing	☐ 38. Drain installations for ponds	☐ 77. Construction or expansion of land-based buildings
☐ 23. Prescribed burns	☐ 47. Conduit installation	☐ 78. Wastewater treatment plants
☐ 25. Maintenance, improvement or construction of pedestrian or vehicular access corridors	☐ 52. Floating buildings	☐ 80. Barge fleeting areas
☐ 26. Maintenance/construction of access control measures	☐ 54. Maintenance of water control structures (dewatering units, spillways, levees)	☐ 82. Construction of dam/weirs/ levees
☐ 27. Restoration of sites following human use and abuse	☐ 55. Solar panels	☐ 83. Submarine pipeline, directional boring operations
☐ 28. Removal of debris (e.g., dump sites, hazardous material, unauthorized structures)	☐ 62. Blasting	☐ 86. Landfill construction
☐ 29. Acquisition and use of fill/borrow material	☐ 63. Foundation installation for transmission support	■ 89. Structure demolition
■ 31. Stream/wetland crossings	☐ 64. Installation of steel structure, overhead bus, equipment, etc.	☐ 91. Bridge replacement
☐ 32. Clean-up following storm damage	☐ 65. Pole and/or tower installation and/or extension	☐ 92. Return of archaeological remains to former burial sites
☐ 33. Removal of hazardous trees/tree branches		

STEP 3) Project includes one or more activities in Table 3? ○ **YES (Go to Step 4)** ○ **NO (Go to Step 13)**

STEP 4) Answer questions *a* through *e* below (applies to projects with activities from Table 3 ONLY)

a) Will project involve continuous noise (i.e., ≥ 24 hrs) that is greater than 75 decibels measured on the A scale (e.g., loud machinery)?
- (●) **NO** (NV2 does not apply)
- ( ) **YES** (NV2 applies, subject to records review)

b) Will project involve entry into/survey of cave?
- (●) **NO** (HP1/HP2 do not apply)
- ( ) **YES** (HP1/HP2 applies, subject to review of bat records)

c) If conducting **prescribed burning** (**activity 23)**, estimated acreage**:** [ ] and timeframe(s) below; ■ **N/A**

STATE	SWARMING	WINTER	NON-WINTER	PUP
GA, KY, TN	☐ Oct 15 - Nov 14	☐ Nov 15 - Mar 31	☐ Apr 1 - May 31, Aug 1- Oct 14	☐ Jun 1 - Jul 31
VA	☐ Sep 16 - Nov 15	☐ Nov 16 - Apr 14	☐ Apr 15 - May 31, Aug 1 – Sept 15	☐ Jun 1 - Jul 31
AL	☐ Oct 15 - Nov 14	☐ Nov 15 - Mar 15	☐ Mar 16 - May 31, Aug 1 - Oct 14	☐ Jun 1 - Jul 31
NC	☐ Oct 15 - Nov 14	☐ Nov 15 - Apr 15	☐ Apr 16 - May 31, Aug 1 - Oct 14	☐ Jun 1 - Jul 31
MS	☐ Oct 1 - Nov 14	☐ Nov 15 - Apr 14	☐ Apr 15 - May 31, Aug 1 – Sept 30	☐ Jun 1 - Jul 31

d) Will the project involve vegetation piling/burning?
- (●) **NO** (SSPC4/ SHF7/SHF8 do not apply)
- ( ) **YES** (SSPC4/SHF7/SHF8 applies, subject to review of bat records)

e) If **tree removal (activity 33 or 34)**, estimated amount: [0.02] (●)**ac** ( )**trees** ( )**N/A**

STATE	SWARMING	WINTER	NON-WINTER	PUP
GA, KY, TN	☐ Oct 15 - Nov 14	■ Nov 15 - Mar 31	☐ Apr 1 - May 31, Aug 1- Oct 14	☐ Jun 1 - Jul 31
VA	☐ Sep 16 - Nov 15	☐ Nov 16 - Apr 14	☐ Apr 15 - May 31, Aug 1 – Sept 15	☐ Jun 1 - Jul 31
AL	☐ Oct 15 - Nov 14	☐ Nov 15 - Mar 15	☐ Mar 16 - May 31, Aug 1 - Oct 14	☐ Jun 1 - Jul 31
NC	☐ Oct 15 - Nov 14	☐ Nov 15 - Apr 15	☐ Apr 16 - May 31, Aug 1 - Oct 14	☐ Jun 1 - Jul 31
MS	☐ Oct 1 - Nov 14	☐ Nov 15 - Apr 14	☐ Apr 15 - May 31, Aug 1 – Sept 30	☐ Jun 1 - Jul 31

If warranted, does project have flexibility for bat surveys (May 15-Aug 15): (●) **MAYBE** ( ) **YES** ( ) **NO**

**** For **PROJECT LEADS** whose projects will be reviewed by a Heritage Reviewer (Natural Resources Organization only), **STOP HERE**. Click File/ Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date", and submit with project information. Otherwise continue to Step 5. ****

SECTION 2: REVIEW OF BAT RECORDS (applies to projects with activities from Table 3 ONLY)

STEP 5) **Review of bat/cave records conducted by Heritage/OSAR reviewer?**

(●) **YES** ( ) **NO** (Go to Step 13)

Info below completed by:
- ☐ **Heritage Reviewer** (name) [ ] Date [ ]
- ☐ **OSAR Reviewer** (name) [ ] Date [ ]
- ■ **Terrestrial Zoologist** (name) [Elizabeth Hamrick] Date [Oct 21, 2022]

Gray bat records: ☒ None ☐ Within 3 miles* ☐ Within a cave* ☐ Within the County

Indiana bat records: ☒ None ☐ Within 10 miles* ☐ Within a cave* ☐ Capture/roost tree* ☐ Within the County

Northern long-eared bat records: ☒ None ☐ Within 5 miles* ☐ Within a cave* ☐ Capture/roost tree* ☐ Within the County

Virginia big-eared bat records: ☒ None ☐ Within 6 miles* ☐ Within the County

Caves: ☒ None within 3 mi ☐ Within 3 miles but > 0.5 mi ☐ Within 0.5 mi but > 0.25 mi* ☐ Within 0.25 mi but > 200 feet* ☐ Within 200 feet*

Bat Habitat Inspection Sheet completed? (●) **NO** ( ) **YES**

Amount of SUITABLE habitat to be removed/burned (may differ from STEP 4e): [0.02] **(**(●)**ac** ( )**trees)*** ( )**N/A**

STEP 6) Provide any additional notes resulting from Heritage Reviewer records review in Notes box below then . . . . . Go to Step 13

Notes from Bat Records Review (e.g., historic record; bats not on landscape during action; DOT bridge survey with negative results):

Based on USFWS ArcGIS Endangered Bats of Tennessee map, queried Oct 2023, Indiana bat and NLEB are not likely to occur in the project area.

STEPS 7-12 To be Completed by Terrestrial Zoologist (if warranted):

STEP 7) Project will involve:

- ☐ Removal of suitable trees within 0.5 mile of P1-P2 Indiana bat hibernacula or 0.25 mile of P3-P4 Indiana bat hibernacula or any NLEB hibernacula.
- ☐ Removal of suitable trees within 10 miles of documented Indiana bat (or within 5 miles of NLEB) hibernacula.
- ☒ Removal of suitable trees > 10 miles from documented Indiana bat (> 5 miles from NLEB) hibernacula.
- ☐ Removal of trees within 150 feet of a documented Indiana bat or northern long-eared bat maternity roost tree.
- ☒ Removal of suitable trees within 2.5 miles of Indiana bat roost trees or within 5 miles of Indiana bat capture sites.
- ☐ Removal of suitable trees > 2.5 miles from Indiana bat roost trees or > 5 miles from Indiana bat capture sites.
- ☐ Removal of documented Indiana bat or NLEB roost tree, if still suitable.
- ☐ N/A

STEP 8) Presence/absence surveys were/will be conducted: ○ **YES** ◉ **NO** ○ **TBD**

STEP 9) Presence/absence survey results, on _____ ○ **NEGATIVE** ○ **POSITIVE** ◉ **N/A**

STEP 10) Project ○ **WILL** ◉ **WILL NOT** require use of Incidental Take in the amount of _____ ○ **acres or** ○ **trees** proposed to be used during the ○ **WINTER** ○ **VOLANT SEASON** ○ **NON-VOLANT SEASON** ◉ **N/A**

STEP 11) Available Incidental Take (prior to accounting for this project) as of _____

TVA Action	Total 20-year	Winter	Volant Season	Non-Volant Season
3 Manage Land Use and Disposal of TVA-Retained Land				

STEP 12) Amount contributed to TVA's Bat Conservation Fund upon activity completion: $ _____ OR ◉ **N/A**

TERRESTRIAL ZOOLOGISTS, after completing SECTION 2, review Table 4, modify as needed, and then complete section for Terrestrial Zoologists at end of form.

SECTION 3: REQUIRED CONSERVATION MEASURES

STEP 13) Review Conservation Measures in Table 4 and ensure those selected are relevant to the project. If not, manually override and uncheck irrelevant measures, and explain why in ADDITIONAL NOTES below Table 4.

Did review of Table 4 result in ANY remaining Conservation Measures in **RED**?

- ○ **NO** (Go to Step 14)
- ◉ **YES** (STOP HERE; Submit for Terrestrial Zoology Review. Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date", and submit with project information).

Table 4. TVA's ESA Section 7 Programmatic Bat Consultation Required Conservation Measures

The Conservation Measures in Table 4 are automatically selected based on your choices in Tables 2 and 3 but can be manually overridden, if necessary. To Manually override, press the button and enter your name.

Manual Override

Name: Elizabeth Hamrick

Check if Applies to Project	Activities Subject To Conservation Measure	Conservation Measure Description
■	15, 16, 17, 18, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 45, 47, 48, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96	**NV1** - Noise will be short-term, transient, and not significantly different from urban interface or natural events (i.e., thunderstorms) that bats are frequently exposed to when present on the landscape.
■	33, 34	**TR4*** - Removal of suitable summer roosting habitat within potential habitat for Indiana bat or northern long-eared bat will be tracked, documented, and included in annual reporting. Project will therefore communicate completion of tree removal to appropriate TVA staff.
■	69, 77, 89, 91	**AR2** - Additional bat P/A surveys (e.g., emergence counts) conducted if warranted (i.e., when AR1 indicates that bats may be present).
■	91	**AR3** - Bridge survey protocols will be implemented, either by permittee (e.g., state DOT biologists) or qualified personnel. If a bridge is determined to be in use as an unconventional roost, subsequent protocols will be implemented.
■	16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 48, 50, 51, 52, 53, 54, 55, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 70, 71, 73, 76, 77, 78, 80, 81, 82, 83, 86, 87, 88, 89, 90	**SSPC2** - Operations involving chemical/fuel storage or resupply and vehicle servicing will be handled outside of riparian zones (streamside management zones) in a manner to prevent these items from reaching a watercourse. Earthen berms or other effective means are installed to protect stream channel from direct surface runoff. Servicing will be done with care to avoid leakage, spillage, and subsequent stream, wetland, or ground water contamination. Oil waste, filters, other litter will be collected and disposed of properly. Equipment servicing and chemical/fuel storage will be limited to locations greater than 300-ft from sinkholes, fissures, or areas draining into known sinkholes, fissures, or other karst features.
■	17, 18, 21, 22, 24, 25, 26, 30, 31, 33, 34, 35, 36, 40, 46, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 66, 67, 68, 69, 70, 72, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 87, 88, 91, 93, 95, 96	**SSPC5** (**26a, Solar, Economic Development only**) - Section 26a permits and contracts associated with solar projects, economic development projects or land use projects include standards and conditions that include standard BMPs for sediment and contaminants as well as measures to avoid or minimize impacts to sensitive species or other resources consistent with applicable laws and Executive Orders.
■	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	**L1** - Direct temporary lighting away from suitable habitat during the active season.
■	16, 26, 36, 37, 38, 39, 48, 50, 52, 59, 60, 62, 66, 67, 69, 72, 75, 77, 78, 79, 86	**L2** - Evaluate the use of outdoor lighting during the active season and seek to minimize light pollution when installing new or replacing existing permanent lights by angling lights downward or via other light minimization measures (e.g., dimming, directed lighting, motion-sensitive lighting).

[1]Bats addressed in consultation (02/2018), which includes gray bat (listed in 1976), Indiana bat (listed in 1967), northern long-eared bat (listed in 2015), and Virginia big-eared bat (listed in 1979).

Hide All Unchecked Conservation Measures

- (•) HIDE
- ( ) UNHIDE

Hide Table 4 Columns 1 and 2 to Facilitate Clean Copy and Paste

- ( ) HIDE
- (•) UNHIDE

NOTES (additional info from field review, explanation of no impact or removal of conservation measures).

Field review by TVA TZ observed a small amount of possible guano under the middle of the bridge under Hiawassee Rd (80 ft from the dam). Due to location, confirmation of guano was not possible. Concrete seams under bridge are over 1 ft deep. No bats were audible or visible at the time of survey (mid October 2022). Bridge is well traveled, next to RR tracks, and next to loud boats speeding by.

STEP 14) Save completed form (Click File/Save As, name form as "ProjectLead_BatForm_CEC-or-ProjectIDNo_Date") in project environmental documentation (e.g. CEC, Appendix to EA) AND send a copy of form to batstrategy@tva.gov Submission of this form indicates that Project Lead/Applicant:

_____ (name) is (or will be made) aware of the requirements below.

- Implementation of conservation measures identified in Table 4 is required to comply with TVA's Endangered Species Act programmatic bat consultation.
- TVA may conduct post-project monitoring to determine if conservation measures were effective in minimizing or avoiding impacts to federally listed bats.

For Use by Terrestrial Zoologist Only

☒ Terrestrial Zoologist acknowledges that Project Lead/Contact (name) Erica McLamb, Freddie Ben has been informed of any relevant conservation measures and/or provided a copy of this form.

☐ For projects that require use of Take and/or contribution to TVA's Bat Conservation Fund, Terrestrial Zoologist acknowledges that Project Lead/Contact has been informed that project will result in use of Incidental Take _____ ○ ac ○ trees and that use of Take will require $ _____ contribution to TVA's Conservation Fund upon completion of activity (amount entered should be $0 if cleared in winter).

For Terrestrial Zoology Use Only. Finalize and Print to Noneditable PDF.

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TENNESSEE HISTORICAL COMMISSION
STATE HISTORIC PRESERVATION OFFICE
2941 LEBANON PIKE
NASHVILLE, TENNESSEE 37243-0442
OFFICE: (615) 532-1550
www.tnhistoricalcommission.org

2023-11-21 08:48:32 CST

Dr. Michaelyn Harle
Tennessee Valley Authority
mharle@tva.gov

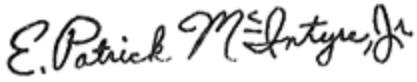
RE: Tennessee Valley Authority (TVA), Saulpaw Mill Dam Removal, Chickmauga Reservoir, TVA Tracking Number- CRMS 34346177546, Project#: SHPO0003912, McMinn County, TN

Dear Dr. Michaelyn Harle:

In response to your request, we have reviewed the documents submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicants for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739) .

Considering available information, we concur that the Saulpaw Mill Dam is eligible for listing in the National Register of Historic Places under Criterion A and that the removal of this dam would be an adverse effect. You should continue to consult with our office to resolve the adverse effect. Please direct questions and comments to Kelley Reid at Kelley.Reid@tn.gov. We appreciate your cooperation.

Sincerely,



E. Patrick McIntyre, Jr.
Executive Director and
State Historic Preservation Officer

Ref:MSG10991832_Pr5Z4OtG8WjK87EfFw0

TENNESSEE VALLEY AUTHORITY

400 West Summit Hill Drive, Knoxville, Tennessee 37902

July 1, 2024

Mr. E. Patrick McIntyre, Jr.
Executive Director
and State Historic Preservation Officer
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), DRAFT MEMORANDUM OF AGREEMENT (MOA), SAULPAW MILL DAM REMOVAL, CHICKAMAUGA RESERVOIR, MCMINN COUNTY, TENNESSEE, (35.29102, -84.73623), (TVA TRACKING NUMBER – CRMS 34346177546)

In a letter dated October 24, 2024, TVA consulted with your office regarding TVA's proposal to remove a portion of the Saulpaw Mill Dam in Calhoun, McMinn County, Tennessee. TVA determined that the proposed undertaking would result in an adverse effect to the Saulpaw Mill Dam and invited your office to participate in the development of an MOA to mitigate the potential adverse effects to the resource. Your office concurred with TVA's findings and agreed to participate in the MOA process in a response letter dated November 21, 2024. Please find attached a draft of the MOA for your review.

Please contact Derek Reaux by email, djreaux@tva.gov with your comments.

Sincerely,

Michaelyn Harle
Manager, Cultural Projects, Economic Development, and Environment
Deputy Federal Preservation Officer
Cultural Resources, External Strategy & Regulatory Oversight

DJR:ERB
Enclosures
cc (Enclosures):
Ms. Jennifer Barnett
Tennessee Division of Archaeology
1216 Foster Avenue, Cole Bldg. #3
Nashville, Tennessee 37210

July 7, 2024

Michaelyn Harle
Deputy Federal Preservation Officer
Cultural Resources
Tennessee Valley Authority
400 West Summit Hill Drive, WT 11A-K
Knoxville, TN 37902

Ref: *Saulpaw Mill Dam Removal Project*
McMinn County, Tennessee
ACHP Project Number: 021184

Dear Ms. Harle:

On June 28, 2024, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the potential adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, *Criteria for Council Involvement in Reviewing Individual Section 106 Cases*, of our regulations, "Protection of Historic Properties" (36 CFR Part 800) implementing Section 106 of the National Historic Preservation Act, does not apply to this undertaking. Accordingly, we do not believe our participation in the consultation to resolve adverse effects is needed.

However, if we receive a request for participation from the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Should the undertaking's circumstances change, consulting parties cannot come to consensus, or you need further advisory assistance to conclude the consultation process, please contact us.

Pursuant to Section 800.6(b)(1)(iv), you will need to file the final Section 106 agreement document (Agreement), developed in consultation with the Tennessee SHPO and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the Agreement and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions or require our further assistance, please contact Christopher Daniel at (202) 517-0223 or by e-mail at

cdaniel@achp.gov and reference the ACHP Project Number above.

Sincerely,

Dana Daniels
Historic Preservation Technician
Office of Federal Agency Programs

MEMORANDUM OF AGREEMENT
AMONG THE TENNESSEE VALLEY AUTHORITY, THE TENNESSEE STATE HISTORIC PRESERVATION OFFICER, AND THE CHARLESTON-CALHOUN-HIWASSEE HISTORICAL SOCIETY REGARDING THE RESOLUTION OF ADVERSE EFFECTS ON HISTORIC PROPERTIES ASSOCIATED WITH THE REMOVAL OF THE HISTORIC SAULPAW MILL DAM IN MCMINN COUNTY, TENNESSEE

WHEREAS, the Tennessee Valley Authority (TVA) proposes to remove a portion of the historic Saulpaw Mill Dam to improve recreational safety at the site and allow for the unimpeded movement of aquatic organisms between the Oostanaula Creek and the Hiwassee River. The undertaking consists of the removal of the check dam and a portion of the retaining walls of the Saulpaul Mill Dam; and

WHEREAS, TVA determined that the area of potential effects (APE) for the undertaking to be the approximately 0.6-acre footprint of the Saulpaul Mill Dam (Appendix A); and

WHEREAS, TVA determined that the undertaking would have an adverse effect on the Saulpaw Mill Dam, which was determined as Eligible for listing in the National Register of Historic Places (NRHP), and has consulted with the Tennessee State Historic Preservation Officer (TN SHPO) pursuant to 36 CFR Part 800, of the regulations implementing Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108)); and

WHEREAS, Pursuant to 36 C.F.R. Part 800.3(f)(2), TVA consulted with the following federally recognized Indian tribes regarding historic properties within the proposed project's APE that may be of religious and cultural significance and are eligible for the NRHP: Absentee Shawnee Tribe of Indians of Oklahoma, Alabama-Coushatta Tribe of Texas, Cherokee Nation, Coushatta Tribe of Louisiana, Eastern Band of Cherokee Indians, Eastern Shawnee Tribe of Oklahoma, Jena Band of Choctaw Indians, Kialegee Tribal Town, The Muscogee (Creek) Nation, The Seminole Nation of Oklahoma, Shawnee Tribe, Thlopthlocco Tribal Town, and the United Keetoowah Band of Cherokee Indians in Oklahoma and received no objections to the proposed undertaking; and

WHEREAS, no Tribes requested to be a concurring party to this MOA; and,

WHEREAS, TVA has consulted with the Charleston-Calhoun-Hiwassee Historical Society regarding the effects of the undertaking on historic properties and has invited them to participate in the development and signing of the MOA as a concurring party; and

WHEREAS, in accordance with 36 CFR Par 800.6(a)(1), TVA has notified the Advisory Council on Historic Preservation (the Council) of the adverse effect finding by providing documentation specified in 36 CFR § 800.11(e), notified the Council of TVA's proposal to develop this Memorandum of Agreement (MOA), and invited the Council to participate in the development of the MOA, and the Council has elected not to participate pursuant to 36 CFR Part 800.6(a)(1)(iii); and

NOW, THEREFORE, TVA and the TN SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the adverse effect of the undertaking on historic properties.

STIPULATIONS

TVA shall ensure that the following stipulations are carried out.

I. SECTION 106 REVIEW COORDINATION AND QUALIFICATIONS

A TVA Cultural Resources staff member shall be TVA's point of contact with TN SHPO for all matters pertaining to the implementation of this MOA. TVA will ensure that all consultants performing work supporting this MOA meet or exceed the Secretary of the Interior's Professional Qualification Standards for the appropriate discipline (archaeology, history, historic architecture, or architectural history).

II. MINIMIZATION OF ADVERSE EFFECTS

TVA will only remove the portions of the Saulpaw Mill Dam that are necessary to meet the proposed goals of the project. All remaining portions of the dam will be left preserved in place. Appendix B provides before and after images highlighting the portions of the dam that will be removed as a part of the proposed project.

III. MITIGATION OF ADVERSE EFFECTS

A. Creation of a Traveling Exhibit

1. TVA shall produce a traveling exhibit on the history of the Saulpaw Mill Dam, highlighting its significance to the Cherokee and the founding and development of Calhoun, McMinn County, Tennessee. The traveling exhibit will consist of three to five retractable displays (Appendix C). TVA shall be responsible for research, development, and design of the displays. TVA will be responsible for creating print quality electronic files in pdf format as back up files.

2. The displays will be professionally designed and will present information and graphics developed through background research carried out by persons meeting the Secretary of the Interior’s Professional Qualification Standards for history, architectural history, or historic architecture.

3. Draft text, images, and layout will be provided to TN SHPO and relevant Tribes for review and comment. The retractable displays shall be produced within one year of receipt of comments from the TN SHPO. Once printed, the retractable displays and pdfs will be delivered to the Charleston-Calhoun-Hiwassee Historical Society, or designee thereof. TVA also will produce a second set of display panels for TVA’s use at public outreach events within the region.

B. Disposal of the Removed Saulpaw Mill Dam Blocks

1. TVA, in response to the public comments and per requests from the Charleston-Calhoun-Hiwassee Historical Society, will preserve, to the extent practicable, the limestone blocks removed during the demolition of the dam. Any blocks, that in TVA’s judgment, are too large or damaged to be safely provided to the City of Calhoun, will be disposed of at a commercial disposal site.

2. TVA will transport and deliver the sample of limestone blocks to the City of Calhoun (via the Charleston-Calhoun-Hiwassee Historical Society) to be used in future educational displays. TVA will deliver the blocks to a paved surface at the Hiwassee Meadowlands Park in Calhoun.

3. A TVA Cultural Resources staff member will work with the City of Calhoun to ensure that the blocks are delivered to a location in the park with no potential to affect any previously recorded or undiscovered historic properties.

IV. DURATION

This MOA will expire if its terms are not carried out within four (4) years from the date of its execution. Prior to such time, TVA may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation V below.

V. DISPUTE RESOLUTION

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the way the terms of this MOA are implemented, TVA shall consult with such party to resolve the objection. If TVA determines that the objection cannot be resolved, TVA will:

A. Forward all documentation relevant to the dispute, including TVA's proposed resolution, to the Council. The Council shall provide TVA with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, TVA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the Council, the signatory, and the concurring parties, and provide them with a copy of this written response. TVA will then proceed according to its final decision.

B. If the Council does not provide its advice regarding the dispute within the thirty (30) day time period, TVA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, TVA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatory and concurring parties to the MOA and provide them and the Council with a copy of such written response.

C. TVA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

VI. AMENDMENTS

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the Council.

VII. TERMINATON

If either signatory to this MOA determines that the terms will not or cannot be carried out, that party shall immediately consult with the other party to attempt to develop an amendment in

accordance with Stipulation VII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

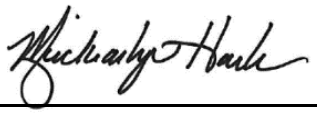
Once the MOA is terminated, and prior to work continuing on the undertaking, TVA must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments provided by the Council under 36 CFR § 800.7. TVA shall notify the signatories as to the course of action TVA will pursue.

If the MOA is terminated prior to TVA's completion of the undertaking or prior to TVA's completion of Stipulations II and III, TVA shall continue to follow the procedures outlined in 36 CFR Part 800 for the resolution of adverse effects on historic properties resulting from the undertaking.

EXECUTION of this MOA by TVA and the TN SHPO, the submission of documentation and filing of this MOA with the Council in accordance with 36 CFR Part 800.6(b)(1)(iv), and implementation of its terms evidence that TVA has, in accordance with Section 106 of the National Historic Preservation Act, taken into account the effects of this undertaking on Historic Properties and afforded the Council an opportunity to comment. TVA will submit a copy of the executed MOA, along with the documentation that is specified in 36 CFR § 800.11(f), to the Council.

Signatory

TENNESSEE VALLEY AUTHORITY



Michaelyn Harle
Manager, Cultural Projects, Economic Development, and Environment
Deputy Federal Preservation Officer
Cultural Resources

08/23/2024

(Date)

Concurring Parties:

Charleston-Calhoun-Hiwassee Historical Society

Joe Bryan

Mr. Joe Bryan

Calhoun, Tennessee City Manager

Charleston-Calhoun-Hiwassee Historical Society, President

August 21, 2024

(Date)

Signatory

TENNESSEE STATE HISTORIC PRESERVATION OFFICER

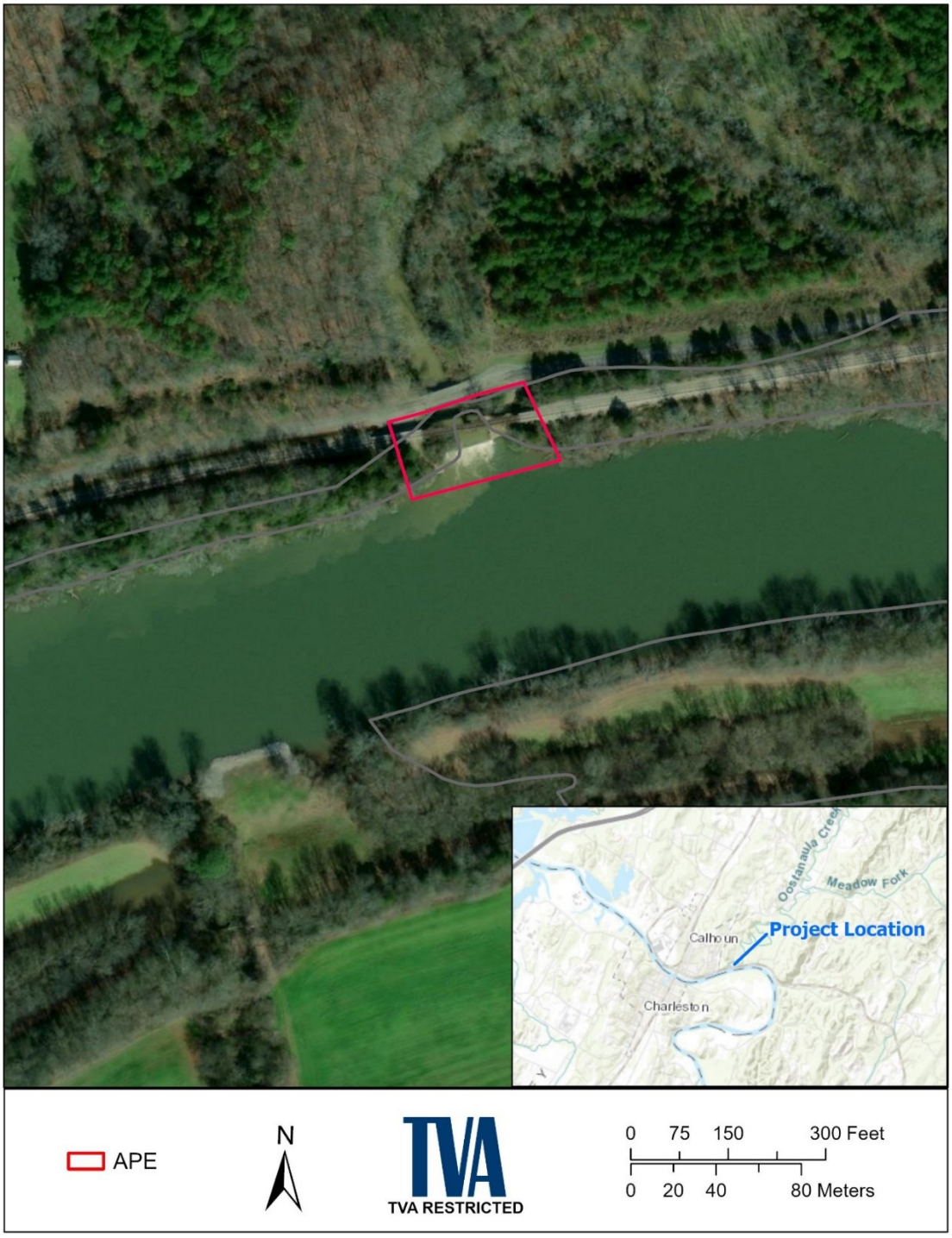
E. Patrick McIntyre, Jr.

State Historic Preservation Officer

8/13/24

(Date)

Appendix A. Project Area Location



Appendix B. PROPOSED PROJECT PLANS

Appendix C. Example of a Traveling Display