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OCOEE 1 HYDRO CONSOLIDATION
DRAFT ENVIRONMENTAL ASSESSMENT
POLK COUNTY, TENNESSEE

Prepared by:
TENNESSEE VALLEY AUTHORITY
Chattanooga, Tennessee

February 2020

For further information, contact:
J. Taylor Cates
NEPA Compliance
Tennessee Valley Authority
1101 Market Street BR 2C-C
Chattanooga, TN 37402
E-mail: jtcates@tva.gov

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Symbols, Acronyms, and Abbreviations

ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
APE	Area of Potential Effects
AST	Aboveground Storage Tanks
BMP	Best Management Practices
CAA	Clean Air Act
CCSM	Climate Change Sentinel Monitoring
CEQ	Council on Environmental Quality
CWA	Clean Water Act
dBA	Decibels
EA	Environmental Assessment
EO	Executive Order
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right to Know Act
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
GPR	Ground Penetrating Radar
GPS	Global Positioning Systems
HABS	Historic American Buildings Survey
HUC	Hydrologic Unit Map
IPaC	Information for Planning and Consultation
IPP	Integrated Pollution Prevention
IT	Information Technology
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NLEB	Northern Long-Eared Bat
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register Historic of Historic Places
NPS	National Park Service
NWI	National Wetlands Inventory
O&M	Operation & Maintenance
OH1	Ocoee 1 Hydro Dam
OHSA	Occupational Safety and Health Act
RCRA	Resource Conservation and Recovery Act
SFHA	Special Flood Hazard Areas
SHPO	State Historic Preservation Office
SOI	Secretary of the Interior
SPCC	Spill Prevention Control and Countermeasure
SREG	Strategic Real Estate & Governance
SREP	Strategic Real Estate Plan
SWPPP	Storm Water Pollution Prevention Plan
TDEC	Tennessee Department of Environment and Conservation
TDOT	Tennessee Department of Transportation
THC	Tennessee Historical Commission

TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resource Agency
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
WOTUS	Waters of the U.S.
WPA	Works Progress Administration
WOTUS	Waters of the U.S.

CHAPTER 1 – PURPOSE AND NEED FOR ACTION

Background

The Ocoee 1 Hydro Dam (O1H), located in Polk County, TN, was completed in 1911 and has a summer net dependable capacity of 24-megawatts. The construction of the dam began in 1910, lasted about 18 months, and was built 135 feet high and stretches 845 feet across the Ocoee River (National Register Historic of Historic Places (NRHP) 1990). The powerhouse is a thirty-five foot wide by 165 foot long three-story building composed of a concrete substructure, brick and steel (NRHP 1990) (Figure 1-1). During the construction of the dam, a small town consisting of the 1,500 workers, their families, police station, hospital, stores, and waterworks were built. A railroad was also built across the Ocoee River to transport materials and workers and remains of the railroad are still visible today (NRHP 1990).

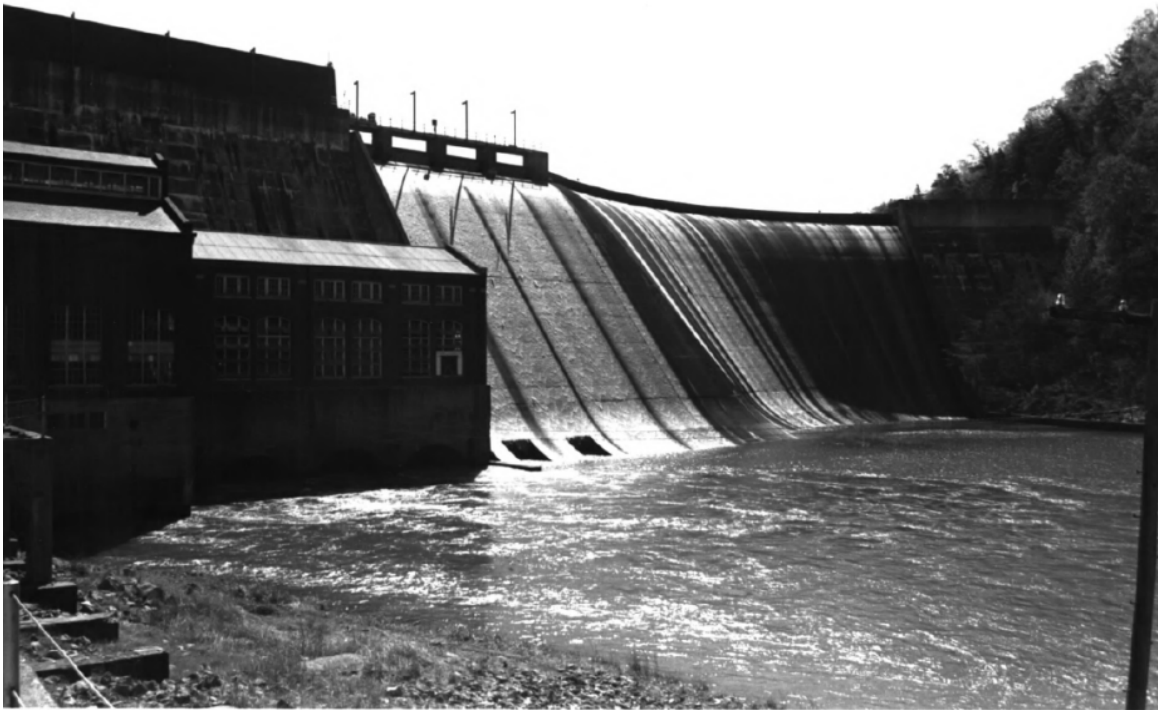

Figure 1-1 Photograph of Ocoee Dam #1 (NRHP 1990)

O1H was completed by the East Tennessee Power Company, later known as the Tennessee Electric Power Company, in a series of hydro-dam projects on the Ocoee River in Tennessee. The Tennessee Valley Authority (TVA) acquired O1H in 1939 (TVA n.d). O1H is the first of the three hydropower projects on the Ocoee River. The river begins in Georgia as the Toccoa River, then changes names at the Tennessee-Georgia state line to become the Ocoee River. The Ocoee River empties into the Hiwassee River, and ultimately drains into the Tennessee River. The dam was created to help with flood control of the watershed and generate electricity. The dam notably began delivering electricity to Chattanooga, Cleveland, Knoxville, Nashville, TN and Rome and Dalton, GA for nearly two decades prior to the creation of TVA (Stitton 2012).

O1H, also known as the Parksville Dam, is listed in the NRHP (#90001003). According to the NRHP registration form, the dam is described as the following:

"The O1H site is unique inasmuch as it is one of the oldest operating hydroelectric facilities in the TVA system. Not only is this true, but much of its generating machinery is original to the plant in 1912. According to one industrial archaeologist and expert in the material culture of the field, O1H is a classic mainly-intact turn of the century hydroplant with a concrete gravity dam, a lavish array of control equipment and switchgear, characteristic of turn of the century engineering practice, all of which is still not only in place, but in present operation. The site survives as the oldest and most original of the power plants in the TVA system".

The hydro-power plant initially powered surrounding areas, but the power generated from the dam now serves approximately 9 million customers (TVA n.d). Since the construction of the O1H, the dam has undergone minor changes including generator upgrades in the 1930s and 1991. The O1H property is surrounded by the Cherokee National Forest, South Cherokee State Wildlife Management Area (WMA), and Sugarloaf Mountain Park.

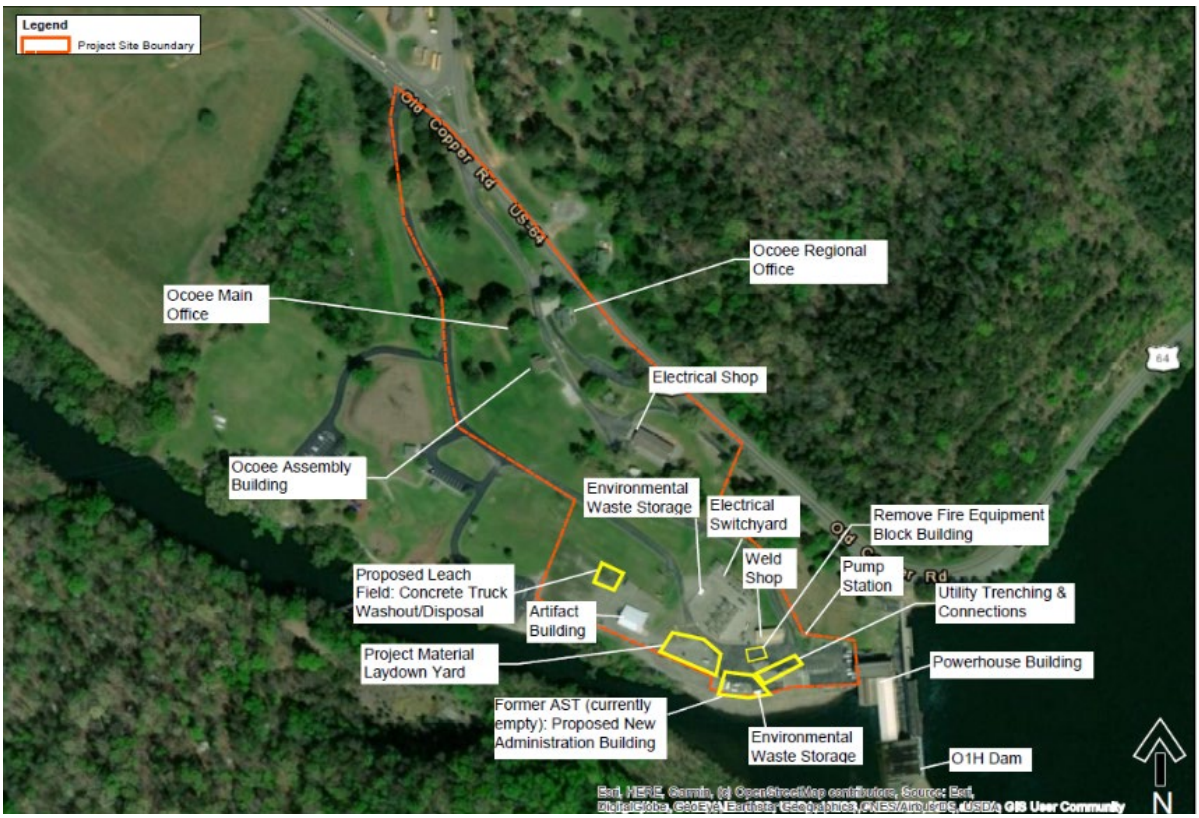

Figure 1-2 Structures Located on O1H

The O1H site includes three houses, several warehouses and buildings (Stitton 2012). Currently, the three houses serve as administration buildings for TVA personnel and are known as O1H PSS Building AEM8474 (White House, or Ocoee Assembly Building), O1HTODA Building AEM8475 (Rock House, or Ocoee Main Office), and O1H Plant Office O1PO (Plant House or Ocoee Regional Office). The administration houses were constructed following the 1929 purchase of the property by the Tennessee Electric Power Company. The Plant Office/Ocoee Regional Office is the main office, which is used as a visitor stopping point

and as office space. The White House/Ocoee Assembly Building is used for office space, conferences, and contains a kitchen. The Rock House/Ocoee Main Office is used for office space, contains a kitchen, contains an attic, which is used for trainees, and a basement for computer and/or technology storage. Located near the administration buildings is a warehouse primarily used as an electrical shop. Figure 1-2 illustrates the buildings and other structures located on O1H.

Near the dam is a fenced area with several structures and equipment that are associated with the daily functions and operations of the dam. The fenced area contains a warehouse known as the Artifact Building, which contains a boat and storage of discontinued equipment, a fenced electrical switchyard which contains an environmental waste storage area, and a warehouse known as the Weld Shop that is used for welding and equipment repair. The fenced area also includes a containment barrier that was formerly occupied by above-ground storage tanks (AST), an environmental waste storage area, the Pump Station, and the Powerhouse Building. Adjacent to the Artifact Building is a grassed and graveled area designated as the septic system's proposed leach field. Figure 1-3 illustrates a closer view of structures located in the fenced area.

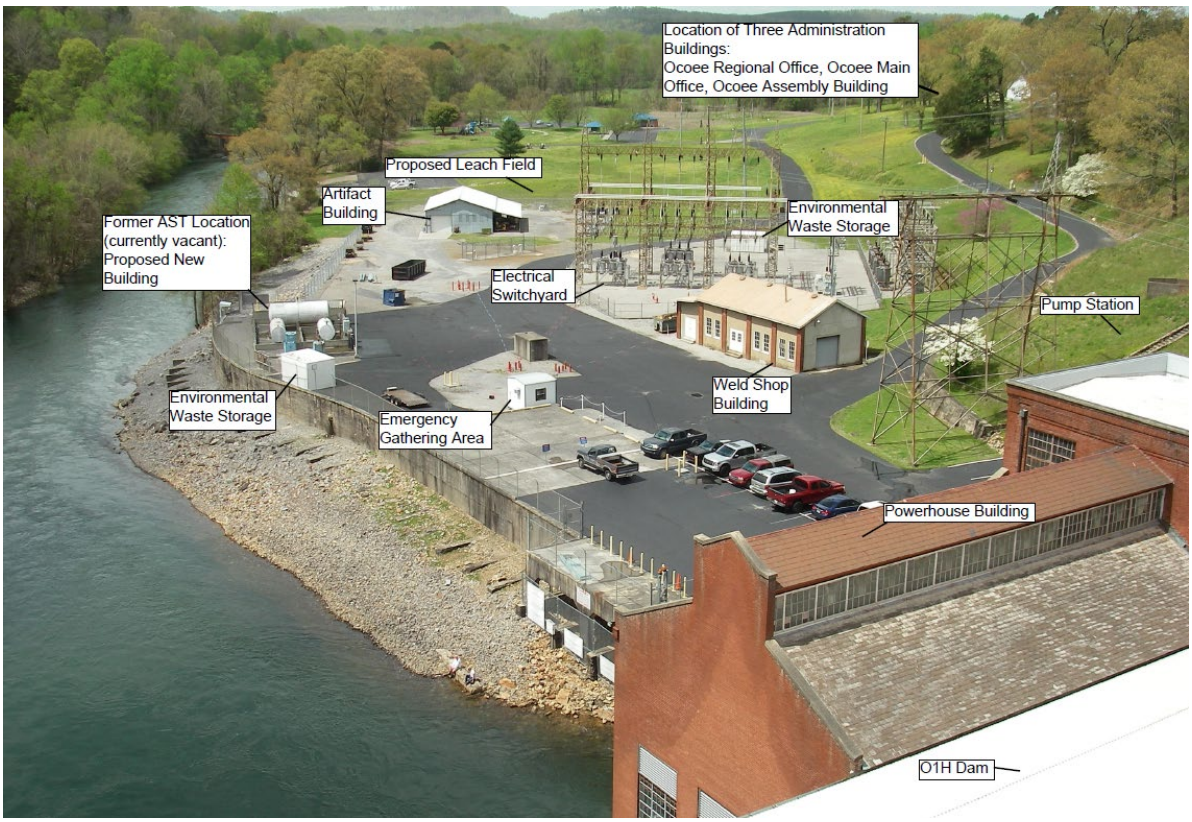

Figure 1-3 Overview of O1H

In 2013, TVA developed a plan to effectively manage, reduce costs, and maximize revenue on TVA's real estate assets, which include office space. As part of this plan, TVA is proposing to combine personnel and functions from three existing O1H administrative buildings (Ocoee Assembly Building, Ocoee Main Office, and Ocoee Regional Office) into a new building and potentially dispose of the buildings once they are vacated. At that time, TVA would no longer need the three administrative buildings and it would be cost prohibitive to maintain three

empty structures. TVA is considering alternatives to continue operations in the three buildings; dispose of the buildings via license agreement or easement grant; or dispose of the buildings via demolition. The property disposal methods may occur individually or together. While consideration was given to relocation of the buildings, that potential alternative was eliminated due to possible interments identified beneath the area and structural concerns with physically moving the buildings.

The project boundary for the proposed TVA O1H consolidation is an approximate 15-acre boundary that commences from Old Copper Road and continues along the existing paved road in a southeasterly direction encompassing the fenced area and continuing along the existing paved road in a northeasterly direction until reaching Old Copper Road.

Specifically, the project boundary includes the buildings and structures within the entire fenced area, the three O1H administration buildings, the electrical shop building, maintained grass lawn, several ornamental trees, and two paved roads. Figure 1-4 shows the limits of the proposed action project area. The proposed new building would be located within the fenced area, in the paved former location of the fuel ASTs, which were removed in 2019. In addition to the proposed new building, a project material laydown area, utility trenching, and location of the concrete truck washout/disposal would occur on the existing paved lot within the fenced area. The three O1H administration buildings are located on a maintained grass lawn surrounded by ornamental trees.

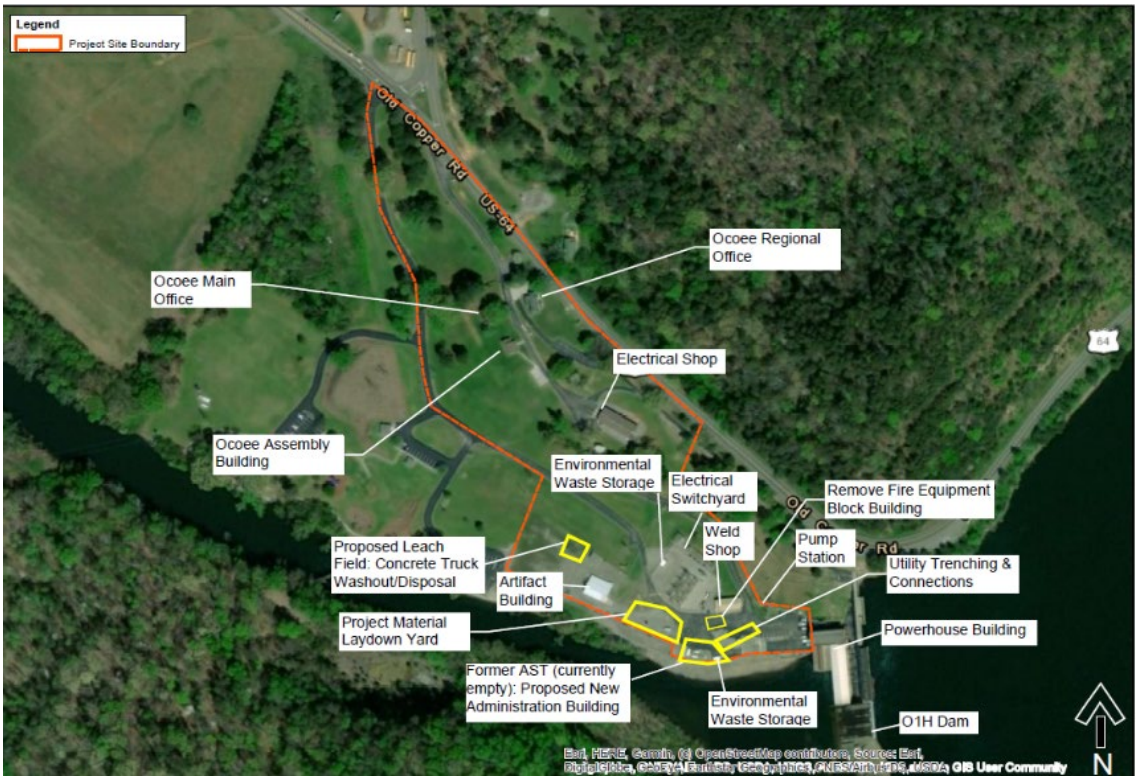

Figure 1-4 Proposed Project Boundary (2018 Aerial Image)

Current NRHP boundaries are limited to the footprints of the O1H dam and powerhouse; however, a 2019 report titled, *Historical Architectural Resource Survey for the Proposed Pole Replacements along a Single Segment of the Ocoee East Cleveland Transmission Line, Polk*

County, Tennessee, recommended that the NRHP boundary be expanded to include the three administration houses and a fourth additional house (also constructed in 1929 as part of the Tennessee Electric Power Company purchase and located across Highway 64) as contributing buildings (Reynolds 2020). Historically, all four houses were used as residences for staff at Tennessee Electric Power Company. After the TVA acquisition, the houses were leased to the U.S Forest Service. From 1986 forward, the three houses located on O1H have been used for administrative purposes for TVA staff. The fourth house currently serves as the Polk County Emergency Communications District Office (Reynolds 2020) and is located outside of the proposed action area. Since all four houses are associated with the early history of O1H, the four houses are considered eligible for listing in the NRHP under Criterion A (Reynolds 2020).

In addition, many other documented activities from the 19th and 20th century occurred outside of the NRHP listed boundaries. During the early 1900's, work on the O1H began and three segregated labor camps were constructed to the north and south of the Ocoee River (NRHP, 1990). As discussed above, a nearby town was established to support construction workers and the remains of a railroad trestle, historically used to transport materials from Sugarloaf Mountain to O1H, still exists today (Stitton 2012). In 1916, the Parksville Steam Plant was built adjacent to the O1H dam to provide power generation during periods of low river flow. The steam plant was last used in 1954 and later removed (Stitton 2012).

The Works Progress Administration (WPA) report lists all cemeteries in Polk County, Tennessee and provides a short description of each cemetery (Reynolds 2020). The WPA report, which was compiled by Lawrence McConkey and provided by the memories of Polk County residents, lists a potential cemetery reportedly located within the boundaries of the project, but the exact whereabouts is hearsay and the exact location is unclear. The cemetery is reportedly located near the three administration houses, but other research also indicates the cemetery is likely near the former location of a railroad spur (Reynolds 2020). The cemetery is known as the Shields-Parksville Cemetery or Shields Cemetery or Parksville Cemetery. The cemetery was established and discontinued before 1900, by Robert Shields. Robert Shields owned a grist mill located at Parksville, TN and the cemetery reportedly contains at least six graves, likely members of the Shields family (TNGenWeb 2020). A ground penetrating radar (GPR) study was conducted by Wood Environment and Infrastructure Solutions, Inc. in July to identify anomalies that may indicate the location of the cemetery and to ensure that the cemetery is not impacted during any demolition activities (Wampler and Wood 2020). The cemetery does not have any association with O1H and would not be considered a contributing resource to the NRHP-eligible O1H property. There is insufficient information to make an individual NRHP evaluation of the cemetery (Reynolds 2020). Cultural resources and impacts related to the proposed action will be further discussed in Chapter 3.

1.2 Purpose and Need

Currently, staff and operations at O1H are inefficiently divided between the three antiquated administrative buildings O1H PSS Building AEM8474 (White House, or Ocoee Assembly Building), O1HTODA Building AEM8475 (Rock House, or Ocoee Main Office), and O1H Plant Office O1PO (Plant House or Ocoee Regional Office). In order to function in a more efficient and economical manner, TVA is proposing to consolidate people and functions from the three existing buildings into one new building and potentially dispose of the three vacated structures. The proposed consolidation of the buildings stems directly from the real estate strategy to effectively manage, reduce costs, and maximize revenue. The three O1H houses used for the Hydro Plant's administrative functions were targeted by Strategic Real Estate &

Governance (SREG) in 2017. Reducing the administrative space aligns with TVA's Strategic Real Estate Plan (SREP), which proposes to reduce Operation & Maintenance (O&M) expenses, right-size portfolio, reduce the footprint, reduce and avoid capital expenditures, and provide economic development opportunities. Additional benefits of this project include consolidating functions inside the security perimeter, reducing renovation costs associated with building upkeep, and elimination of aging infrastructure that does not meet modern-day building codes.

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. The decision TVA must make is whether to consolidate the three administrative buildings into one, newly constructed building (action alternative) or continue forward under the no action alternative. If an action alternative is selected, TVA must decide whether to abandon the three administrative buildings by license / easement grant or demolition, which could occur individually or together.

1.4 Proposed Action

TVA proposes to consolidate people and functions from the three existing O1H administrative houses into a new administration building and then dispose of the vacated buildings. The proposed new one-story administration building at O1H would be about 18 feet in height, 98 feet in width, and 32 feet in depth. This new building would house the relocated administrative functions, allowing the three houses to be vacated. The proposed vacating of these three houses would result in options for disposal, further discussed in detail in the Alternatives.

1.5 Scope of the Environmental Assessment and Summary of Proposed Action

This EA evaluates the potential impacts of the consolidation of the functions and operations of the three administration houses into a newly constructed building and the disposal of the three administration houses. One alternative for disposal is to dispose of the administration houses via license and/or easement grant. The second alternative is to dispose of the administration houses via demolition. The property disposal methods may occur individually or together.

TVA prepared this EA to comply with the National Environmental Policy Act (NEPA) and regulations promulgated by the Council on Environmental Quality (CEQ) 1978 Regulations and TVA's procedures for implementing NEPA. 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, and assessed the potential impacts on these resources in detail in this EA.

- Aquatics
- Terrestrial Zoology
- Managed and Natural Areas
- Terrestrial Zoology
- Wetlands
- Cultural and Historic Resources
- Floodplains
- Parks and Recreation
- Surface Water and Soil Erosion
- Transportation
- Air Quality
- Climate Change
- Noise
- Geology/Groundwater
- Solid & Hazardous Waste & Hazardous Material
- Visual Resources

Given the nature of the project, the following resources are not found in the study area or would not be impacted by any of the project alternatives. These include:

- Socioeconomics/Environmental Justice: Given the scope of the proposed actions, there would be no discernable impact to demographic and community characteristics as the surrounding workforce and regional economy are not expected to change as a result of the proposed action.

- Land Use/Prime Farmland: The 1981 Farmland Protection Policy Act requires all federal agencies to evaluate impacts to prime and unique farmland prior to permanently converting to land use incompatible with agriculture. The proposed actions areas would not occur in areas having soils with prime farmland characteristics per the U.S Department of Agriculture Natural Resources Conservation Service (NRCS). Access roads are already existing on site. The addition of the proposed new administration building would not result in the conversion of any land uses as this action is proposed on an existing paved lot, in the former location of the ASTs. Under Alternative A, the three administration structures would remain on the property, but no longer be a part of O1H. Under Alternative B, the three administration buildings would be eliminated via demolition. Short term impacts to land use from the removal of the three administration buildings via demolition would be minor since this area is previously disturbed.

- Public Health & Safety: Workplace health and safety regulations are designed to eliminate personal injuries and illnesses from occurring in the workplace. The Occupational Safety and Health Act (OSHA) is the main statue protecting the health and safety of workers in the workplaces. OSHA and TVA's Safety Standard Programs and Processes would be strictly adhered to during the proposed actions.

TVA's action would satisfy the requirements of Executive Order (EO) 11988 (Floodplain Management), EO 11990 (Protection of Wetlands), EO 12898 (Environmental Justice), EO 13112 as amended by 18751 (Invasive Species) and applicable laws including the National Historic Preservation Act (NHP), Endangered Species Act (ESA), and Clean Water Act (CWA).

1.6 Public and Agency Involvement

TVA issued a draft EA for public review and comment. The TVA draft EA was announced in the Polk County News newspaper and also posted on the TVA's website. Notifications and/or copies of the draft EA were also sent to the U.S Fish and Wildlife Service (USFWS), U.S Army Corps of Engineers (USACE), Tennessee Department of Agriculture, Tennessee Department of Environment and Conservation (TDEC), Tennessee Department of Transportation (TDOT), Tennessee Historical Commission (THC), which is the State Historic Preservation Office (SHPO), Tennessee Wildlife Resources Agency (TWRA), and Federally recognized tribes.

1.7 Other Environmental Reviews and Documentation

Several supplemental technical studies have been reviewed for the actions related to the operation of the O1H. The contents of these documents, which are described below, help describe the O1H history, the relevance of the proposed action, and are incorporated by reference.

National Register of Historic Places Registration Form (NRHP Nomination Form 1990). The NRHP registration form was filed on June 1, 1990 and submitted the O1H ("Parksville Dam") for nomination to be included on the NRHP list. The O1H pre-TVA hydroelectric station was submitted to SHPO as significant under Criterion A for commerce in the State of Tennessee, as it represents the transition from private possession of property to public ownership of public utilities that occurred from 1901 to 1933 in Tennessee. Additionally, the Ocoee No. 1 Dam is significant under Criterion A for flood control planning, as manifest by the creation of the first artificial lake in Tennessee. Finally, Ocoee No. 1 Dam was found to be significant under Criterion C for engineering for its design and type that was typical of hydroelectric projects in Tennessee during the early twentieth century.

Ocoee No. 1 Hydro Plant, Admin Building Refurbishment (TVA 2012). The purpose of the Admin Building Refurbishment was to remove and replace the asbestos siding, repair windows and doors, apply caulking, apply prime and finish coating. A categorical exclusion checklist was prepared by Mr. Herbert L. Hooper of PSO – Facilities Management for these activities.

Integrated Pollution Prevention (IPP) Plan and Spill Response Plan (TVA 2018). The purpose of the O1H IPP Plan is to minimize the potential for the release of pollutants to the waters of the State of Tennessee in compliance with the Clean Water Act (CWA) and specifically the National Pollutant Discharge Elimination System (NPDES) Permit # TN0027499. The Plan consolidates and fulfills the regulatory requirements of the NPDES Best Management Practices (BMP), Storm Water Pollution Prevention Plan (SWPPP), and the Spill Prevention Control and Countermeasure (SPCC) Plans. The IPP Plan details precautionary measures for the tank farm at the location of the new Administrative building. The IPP Plan precedes the removal of the Tank Farm.

Ocoee 1 Tank Farm Removal (TVA 2019). The purpose of the Ocoee 1 Tank Farm Removal was to remove the aboveground storage tanks and follow the preventative measures set forth through the IPP Plan. A categorical exclusion checklist was prepared by Mr. Kevin Davenport and managed by Mr. Wesley A. McDonald with the P&NR – Realty Services, GIS & Land. The ASTs were in good condition and the tanks were lifted out by a general contractor and recycled by the contractor. Once the tanks were removed, the IPP Plan was to be updated within six months of the removal.

Technical Studies Report for the Proposed Ocoee Number One Hydro Houses Disposal In Polk County, Tennessee (Reynolds, 2020): The purpose of the technical study for the O1H houses was to complete background research and to fully understand the significance and integrity of the houses. The technical report recommends that the three administration houses and the house across the road (across Highway 64) be eligible for listing in the NRHP and included in the O1H NRHP boundary.

2020 Geophysical Investigation at TVA Ocoee 1 (Rock House, White House, and Rail Spur) Polk County, Tennessee (Wood Environment and Infrastructure Solutions, Inc.): The purpose of the geophysical study at O1H was to identify the possible locations of the cemetery. Extensive archival and anecdotal research that the cemetery is located either below one of the three administration O1H houses or along the former railroad spur, now the O1H Reservation Road. Based on the geophysical study, 15 subsurface anomalies were identified during the investigation, but only two subsurface anomalies that appeared to be human burials were identified near the Rock House. Additionally, subsurface anomalies that are

likely human remains were identified under the former railroad spur; however, this area is located outside the TVA project boundary.

1.8 Permits, Licenses, and Approvals

TVA would obtain all necessary permits, licenses, and approvals required for the alternative selected. Depending on the decisions made respecting the proposed actions, TVA may have to obtain the following permits:

- A General Permit for Storm Water Discharges Associated with Construction Activities may be required for the construction of the new administrative building under Alternative A or for the demolition of the three administrative buildings and the construction of the new administrative building under Alternative B. Section 403 of the Clean Water Act would detail the specifications of the General Permit as it is likely required due to construction potentially impacting more than an acre of land. A SWPPP would be required to detail sediment and erosion control best management practices (BMP).

- A Building Permit may be required for the construction of the new administrative building under Alternative A and Alternative B.

- An Oversize and Overweight Vehicle Permit may be required from the TDOT based on the construction equipment required for the new administrative building and demolition activities. Potential local County notifications also required.

- Solid Waste Handling/Landfill permit

- Septic Permit (County and TDEC) - constructing, installing, altering, extending or repairing a subsurface sewage disposal system

- Tennessee Division of Air Pollution Control (TDEC) – 10-day prior asbestos removal and demolition notification

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CHAPTER 2 - ALTERNATIVES

2.1 Description of Alternatives

This EA evaluates three alternatives: the No Action Alternative and the Proposed Action Alternatives A and B. These alternatives are described in more detail below.

2.1.1 The No Action Alternative

Under the No Action Alternative, TVA would not perform the proposed consolidation at O1H. The current operations of the three O1H administration houses (O1H PSS Building AEM8474 White House/Ocoee Assembly Building, O1HTODA Building AEM8475 Rock House/Ocoee Main Office, and O1H Plant Office O1PO/Ocoee Regional Office) would continue and the new administration building would not be constructed.

2.1.2 Alternative A – Consolidation via License or Easement Grant

Under the Proposed Action Alternative A, TVA proposes to consolidate the operations and functions from the three existing O1H administration houses (O1H PSS Building AEM8474 [White House/Ocoee Assembly Building], O1HTODA Building AEM8475 [Rock House/Ocoee Main Office], and O1H Plant Office O1PO/Ocoee Regional Office) into a new building and dispose of the three O1H administration buildings via license or easement grant of the buildings (individually or together). The license or easement grant consists of a realty transaction for permanent rights that would not include an underlying land fee (i.e. short-term agreement between TVA and another party). The easement grant and license grant are similar in that both do not include a land fee; however, the easement grant is considered of a more long-term agreement. The three Administrative Buildings would remain in place on the property; however, they would no longer be considered part of the O1H facilities. Site preparation and construction will include a laydown area and a concrete truck washout and disposal area. The new building will be connected to a new underground septic system and potable water supply. The existing paved drive will be extended and potentially cut in order to gain access to the new building. The new building will be secured with badge readers, cameras and upgraded Information Technology (IT) connectivity. The bottle gas storage will be relocated on-site. Figure 2-1 details the proposed changes associated with the Proposed Action Alternatives. Appendix A includes the building exterior elevation and building floorplan of the proposed new administration building.

2.1.3 Alternative B – Consolidation via Demolition

Under the Proposed Action Alternative B, TVA proposes to consolidate the operations and functions from the three existing O1H administration houses (O1H PSS Building AEM8474 [White House/Ocoee Assembly Building], O1HTODA Building AEM8475 [Rock House/Ocoee Main Office], and O1H Plant Office O1PO/Ocoee Regional Office) into a new building and dispose of the three O1H administration houses via demolition (either individually or together). Site preparation for the construction of the new building are consistent with those outlined in Alternative A.

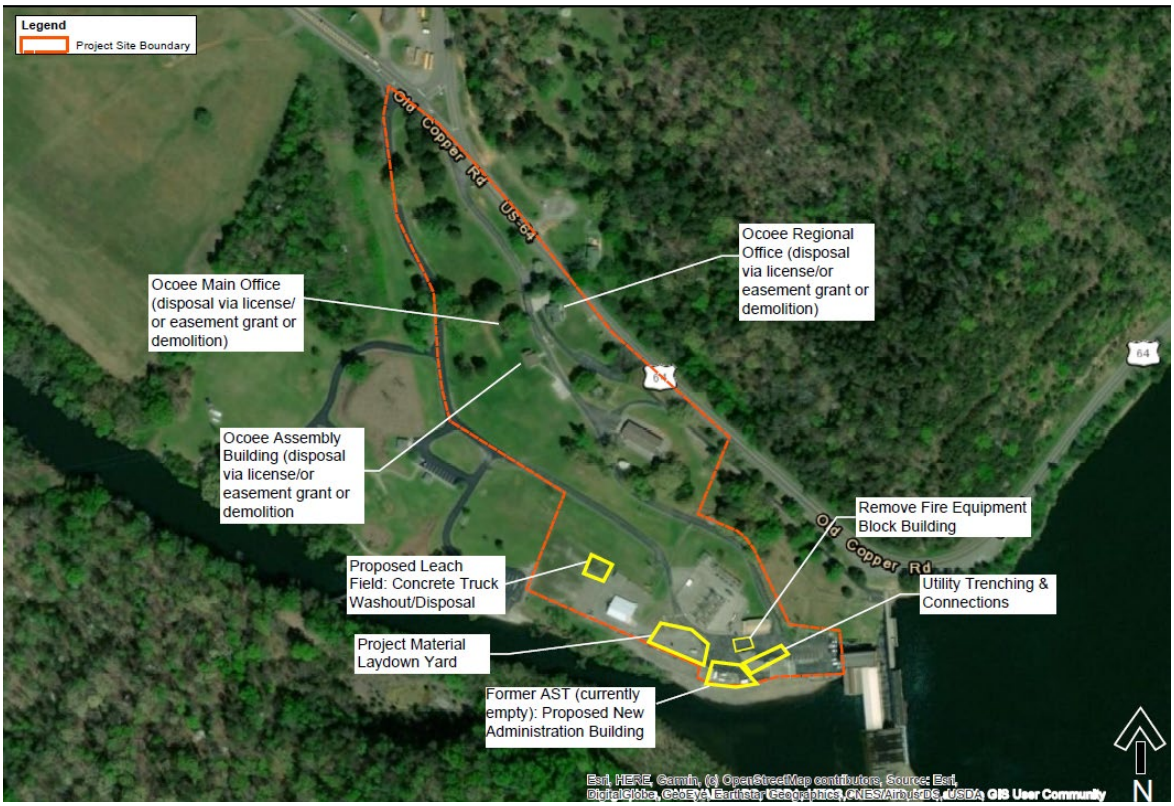

Figure 2-1 Layout for Proposed Action Alternatives A and B

2.2 Description of Alternatives Considered but Eliminated

Four other alternatives were initially considered but were eliminated from further analysis.

- Rebuild the Existing Welding Shop (01WF5): This alternative would consist of redeveloping and repurposing the existing welding shop, which is located inside the O1H security perimeter, and possibly disposing of the three existing O1H administration houses. Based on initial assessment of the welding building, the foundation of the structure was determined to be failing and renovation of the building was determined not feasible. In addition, this alternative would involve construction of a new welding shop. Finally, the option was not further studied because of the close proximity of adjacent transmission lines.

- Powerhouse Renovation: This alternative would consist of maximizing unused space within the existing powerhouse building, which is located inside the O1H security perimeter and possibly disposing of the three existing O1H administration houses. This option was originally the preferred option due to the better utilization of existing square footage within the plant. TVA determined that the costs associated with this action would exceed the budget by approximately 3 times due to the need for an elevator and blast protection from a potential switchyard hazard. Additionally, the noise and vibration from the powerhouse plant could not be eliminated.

- Adaptive Reuse of the Houses: This alternative would consist of consolidating staff and functions in two of the existing O1H administration house and vacating the remaining house. This alternative was considered but not pursued in detail because

the existing buildings are aging infrastructure that does not meet modern-day building codes, insufficient size, and the alternative does not support TVA's efforts to reduce O&M costs. The structures do not satisfy the programmatic needs of the 01H daily operations, and similar to the welding shop, would need to be completely re-built to satisfy the program and long-term occupancy and Americans with Disabilities Act (ADA) requirements. Most importantly, the houses were not located in a fenced, protected area of the power plant.

- Relocation of the Houses: Consideration was given to the potential relocation of the administrative buildings from their current locations; however, that potential alternative was eliminated due to possible interments identified beneath the area and the logistical and structural concerns with moving the buildings.

2.3 Comparison of Alternatives

The environmental impacts anticipated under No Action and the Action Alternatives are compared and summarized below in Table 2-1. These summaries are derived from the information and analyses provided in the Affected Environment and Environmental Consequences sections of each resource evaluated in Chapter 3.

Table 2-1 Comparison of Alternatives and Affected Resource

Environmental Resource	No Action Alternative	Alternative A – Consolidation via License or Grant Easement	Alternative B – Consolidation via Demolition
Aquatics	No impact	Temporary minor impacts from sedimentation run-off from ground disturbing activities	Temporary minor impacts from sedimentation run-off from ground disturbing activities
Botany	No impact	Temporary minor impacts from ground disturbing activities	Temporary minor impacts from ground disturbing activities

Environmental Resource	No Action Alternative	Alternative A – Consolidation via License or Grant Easement	Alternative B – Consolidation via Demolition
Managed and Natural Areas	No impact	Temporary impacts (construction traffic, noise, and run-off) to Sugarloaf Mountain Park, Cherokee National Forest, and South Cherokee National Forest and WMA)	Temporary impacts (construction traffic, noise, and run-off) to Sugarloaf Mountain. Park, Cherokee National Forest, and South Cherokee National Forest and WMA)
Terrestrial Zoology	No impact	No significant impact to terrestrial animals and no impact to migratory birds of conservation concern; No impact to federally listed species. A honey-bee colony was observed within the Rock House/Ocoee Main Office and would be relocated prior to disposal	No significant impact to terrestrial animals and no impact to migratory birds of conservation concern; No impact to federally listed species. A honey-bee colony was observed within the Rock House/Ocoee Main Office and would be relocated prior to demolition
Wetlands	No impact	No impact	No impact
Cultural and Historic Resources	Potential adverse effect impact to the three O1H structures due to structural deterioration; no impact to archaeological resources	Adverse impacts to O1H setting; the recently discovered interments associated with the former cemetery would remain in place, so long as mitigation was complete	Adverse impacts to O1H structures and setting; the recently discovered interments associated with the former cemetery would be avoided during demolition with an established 50’ buffer

Environmental Resource	No Action Alternative	Alternative A – Consolidation via License or Grant Easement	Alternative B – Consolidation via Demolition
Floodplains	No impact	No impact; however, any demolition material resulting from the project would be disposed of at a location outside of 100-year floodplain.	No impact; however, any demolition material resulting from the project would be disposed of at a location outside of 100-year floodplain.
Parks and Recreation	No impact	Temporary impacts (construction traffic, noise, run-off) to Sugarloaf Mountain Park	Temporary impacts (construction traffic, noise, run-off) to Sugarloaf Mountain Park
Surface Water and Soil Erosion	No impact	Minor impacts from construction/demolition and runoff from impervious surface of new building	Minor impacts from construction/demolition and runoff from impervious surface of new building
Transportation	No impact	Minor temporary impacts from increased traffic during construction, but no increase in traffic from an operation standpoint	Minor temporary impacts from increased traffic during construction and demolition, but no increase in traffic from an operation standpoint
Air Quality	No impact	Minor temporary impacts in local air emissions from construction activities, but no impacts to air quality from an operation standpoint	Minor temporary impacts in local air emissions from construction and demolition activities, but no impacts to air quality from an operation standpoint
Climate Change	No impact	Negligible increase in carbon dioxide from heavy equipment vehicles	Negligible increase in carbon dioxide from heavy equipment vehicles

Environmental Resource	No Action Alternative	Alternative A – Consolidation via License or Grant Easement	Alternative B – Consolidation via Demolition
Noise	No impact	Negligible temporary noise impacts from construction	Negligible temporary noise impacts from construction and demolition
Geology/Groundwater	No impact	Negligible impacts from septic leach field	Negligible impacts from septic leach field
Solid & Hazardous Waste & Hazardous Materials	No impact	Minor impact from generation of solid waste during construction	Minor impact from generation of solid waste during construction and demolition
Visual Resources	No impact	Minor impacts to surrounding National Forests, WMA, and State Park during construction; new building may adversely affect the landscape character of O1H	Minor impacts to surrounding National Forests, WMA, and State Park during construction; new building may adversely affect the landscape character of O1H

2.4 Identification of Mitigation Measures

Mitigation measures identified in Chapter 3 are summarized below. TVA's analysis includes mitigation, as required, to avoid or minimize adverse effects. Project-specific BMP's are also identified.

- To minimize impacts to surface waters, the following mitigation measures will be incorporated:
    - TVA would implement BMPs as described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority (TVA 2017), Tennessee Erosion and Sediment Control Handbook (TDEC 2012)*, and SWPP would be implemented before any ground disturbing activities in order to minimize stormwater impacts.
    - Stabilization of the project area would be completed using non-invasive native vegetation species after demolition and construction to further prevent stormwater runoff

- To minimize impacts to cultural resources, the following mitigation measures would be incorporated:
    - State-level Historic American Buildings Survey (HABS) documentation of each affected building would be completed for this project.
    - The existing NRHP documentation completed in 1990 for the O1H facility would be updated to include the recommended expansion of the NRHP boundary.
    - A full evaluation of all resources within the recommended NRHP boundary expansion would be completed to determine which resources would be contributing and non-contributing.
    - A detailed avoidance plan for potential physical effects to unmarked human burials would be developed in consultation with the SHPO and any consulting parties.
    - SHPO and Tribal consultation will occur to seek concurrence on the proposed mitigation measures. It is possible that the mitigation measures outlined in this document will be revised based upon the results of consultation and mitigation of effects to be outlined in a Memorandum of Agreement (MOA) between TVA and the SHPO, as well as any interested tribes who participate in consultation.
- To minimize impacts to floodplains, the following mitigation measures will be incorporated:
    - Any demolition material resulting from the project would be disposed of at a location outside of 100-year floodplains
- To minimize impacts to terrestrial species and federally threatened and federally listed terrestrial species, the following mitigation measures will be incorporated:
    - Trained experts will remove and relocate the honeybee colony from the Rock House/Ocoee Main Office prior to demolition
    - Bat surveys will be conducted of the attics within the Rock House/Ocoee Main Office and White House/Ocoee Assembly Building in the summer months prior to demolition. Any common bats found will be excluded using techniques approved by Tennessee Wildlife Resources Agency. Conservation Measures including those related to building demolition are identified on the TVA Bat Strategy Project Screening Form and will be followed in accordance with TVA's programmatic consultation with the U.S. Fish and Wildlife Service (USFWS) on routine actions and federally listed bats in accordance with ESA Section 7(a)(2) and completed in April 2018.

2.5 The Preferred Alternative

TVA's preferred alternatives are the Action Alternatives, either Alternative A – Consolidation via License or Grant Easement or Alternative B – Consolidation via Demolition. The action alternatives may apply to the structures either individually or together.

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CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Project Overview

No Action Alternative
Under the No Action Alternative, TVA would not perform any consolidations at O1H and current operations would continue. As a result, no new work would be conducted that could potentially alter project-related environmental conditions within the project area.

Proposed Action Alternative A – Consolidation via License or Easement Grant
Under Action Alternative A, TVA would dispose of the three existing O1H administration houses via license or easement grant of the buildings (individually or together) and/or the land, and proceed with consolidation efforts by constructing the new building. The construction of the new building would include a laydown area, construction of the septic system and use of leech field, connection to water supply, and extending existing pavement for building access which would occur on a previously disturbed gravel and paved areas. Environmental consequences anticipated for Action Alternative A are outlined in each subchapter.

Proposed Action Alternative B – Consolidation via Demolition
Under this action, TVA would dispose of the three existing O1H administration houses via demolition of the buildings and proceed with consolidation efforts by constructing the new building. The construction of the new building would be consistent with activities described in Action Alternative A. Environmental consequences anticipated for Action Alternative B are outlined in each subchapter.

3.2 Aquatics

Affected Environment

Aquatic Ecology
This section addresses the aquatic species that are located within or immediately adjacent to the project area. The O1H and the immediate surrounding areas are located at the boundary of the Ridge and Valley physiographic province and Blue Ridge Mountains province. The Blue Ridge Mountains province is known for containing beautiful high gradient streams with exceptional water quality, but the diversity of aquatic organisms is insignificant compared to other regions, and the amount of rare, threatened or endangered species is also insignificant. The Ocoee River, however, begins the transition into the part of the Tennessee River system where species diversity increases as you move into larger streams with a greater diversity of habitat. The Tennessee River system as a whole contains the most diverse collection of freshwater animal species in the country, and may possibly represent the most diverse temperate freshwater assemblage in the world. However, dams like the O1H are known to alter river systems to a point where physical habitat is degraded and life history strategies are interrupted.

Aquatic Threatened and Endangered Species

A query of the TVA Natural Heritage Database and the USFWS Information for Planning and Consultation (Ipac) indicated one federally listed species and three state listed species occurring within the potentially affected 10-digit HUC watershed adjacent to the proposed project area (Table 3-1). In streams where dams have been in place for many decades, significant reductions in species diversity are to be expected. However, this stretch of stream may still be occupied by state listed species where suitable habitat is present. Because all proposed activities take place on land, there will be no in-stream activities that could directly impact state or federally listed aquatic species known to occur within the Ocoee River 10-digit HUC watershed.

Table 3-1 Records of federal and state-listed aquatic animal species within the Ocoee (0602000302) 10-digit HUC watershed[1]

Common Name	Scientific Name	State Rank[2]	State Status[3]	Element Rank[4]	Federal Status[5]
Snail Darter	*Percina tanasi*	S2S3	T	E	LT
Tangerine Darter	*Percina aurantiaca*	S2	E	H?	-
Tennessee Dace	*Chrosomus tennesseensis*	S3	D	E	-
Wounded Darter	*Etheostoma vulneratum*	S1	E	E	-

[1] Source: TVA Natural Heritage Database and IPac
[2] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable
[3] State Status Codes: D = Deemed In Need of Management; E = endangered; T = Threatened
[4] Heritage Element (=population) Rank: E = extant record ≤25 years old; H = historical record >25 years old; ? = uncertain status
[5] Federal Status: LT = Listed Threatened

Environmental Consequences

No Action Alternative
No significant environmental consequences would occur under the No Action Alternative.

Proposed Action Alternative A – Consolidation via License or Easement Grant
No significant impacts to aquatic resources would occur under Action Alternative A.

Proposed Action Alternative A - Consolidation via Demolition
No significant impacts to aquatic resources would occur under Action Alternative B.

3.3 Botany

Affected Environment
This section addresses the botanical species that are located within or immediately adjacent to the project area. Botany is the study of plants that deals with plant structure, properties, biochemical process, and plant interactions with their environment (Steere n.d). Because the proposed activities will occur on land, there may be direct, indirect, and temporary impacts to plant species stemming from onsite construction activities and lay-down areas.

The O1H and the immediate surrounding areas are located at the boundary of the Ridge and Valley physiographic province and Blue Ridge Mountains province. The Ridge and Valley Physiographic Province is characterized by its long north-northeasterly trending ridges dominated by eastern hemlock and yellow birch. The Blue Ridge Mountains are known for its peaks and ridges and example forests types include broadleaf deciduous cove forests, stunted oak forests on ridges, and oak-history forests (New Georgia Encyclopedia 2020).

Vegetation

The vegetation within a 3-mile radius surrounding the O1H area was evaluated with land use information obtained from the National Land Cover Database. Land cover in the vicinity is primarily dominated by evergreen and deciduous forest. The land cover within a 3-mile radius is summarized in Table 3-2 and illustrated in Figure 3-1.

Table 3-2 Land Cover of the Proposed O1H Dam Project Area and Within the Vicinity of the Dam.

Land Cover Type	3-Mile Radius (acres)
Open Water	1,237.1
Developed, Open Space	971.4
Developed, Low Intensity	113.8
Developed, Medium Intensity	22.6
Developed, High Intensity	3.1
Barren Land	18.9
Deciduous Forest	5,739.5
Evergreen Forest	3,083.7
Mixed Forest	4,381.3
Shrub/Scrub	364.2
Herbaceous	544.6
Hay/Pasture	2,720.5
Cultivated Crops	431.2
Woody Wetlands	9.5
Emergent Herbaceous Wetlands	4.4

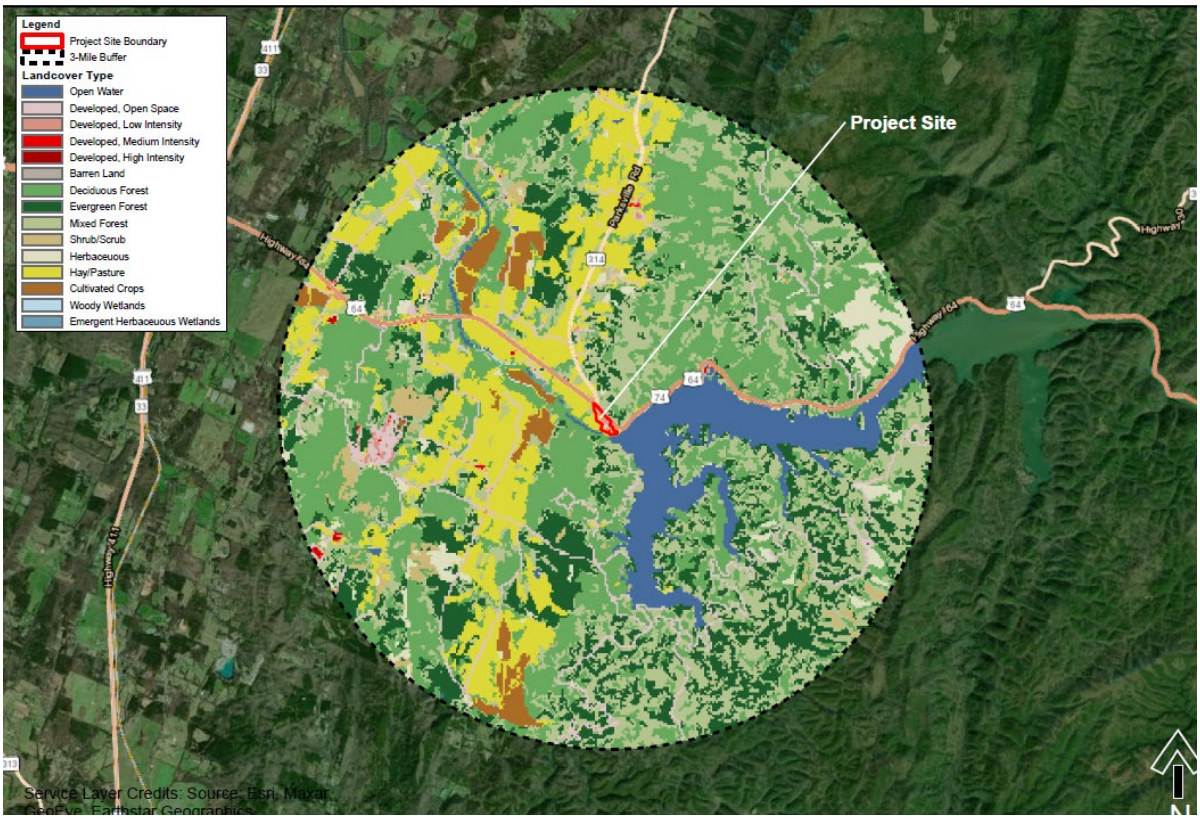

Figure 3-1 Land Cover within Vicinity of O1H in a 3-mile Radius.

Land cover within the O1H area was also mapped utilizing recent photographs provided for the project location and aerial imagery. Land cover in the approximate 15-acre project area consists of a manicured grass lawn with scattered trees and non-vegetated surfaces such as buildings and roads. The project area consists of a mixed combination of Bermuda and bahia grass, scattered trees, and impervious surface. The land cover within the project area is summarized in Table 3-3 and illustrated in Figure 3-2.

Table 3-3 Land Cover Observed Within in the O1H Dam Project Area

Common Name	Scientific Name	Acres
Bermuda and bahia grass	*Cynodon dactylon; Paspalum notatum*	10.1
Unidentified Oak	*Quercus* spp.	-
Unidentified Pine	*Pinus* spp.	-
Structures	-	0.6
Impervious surface	N-	4.3

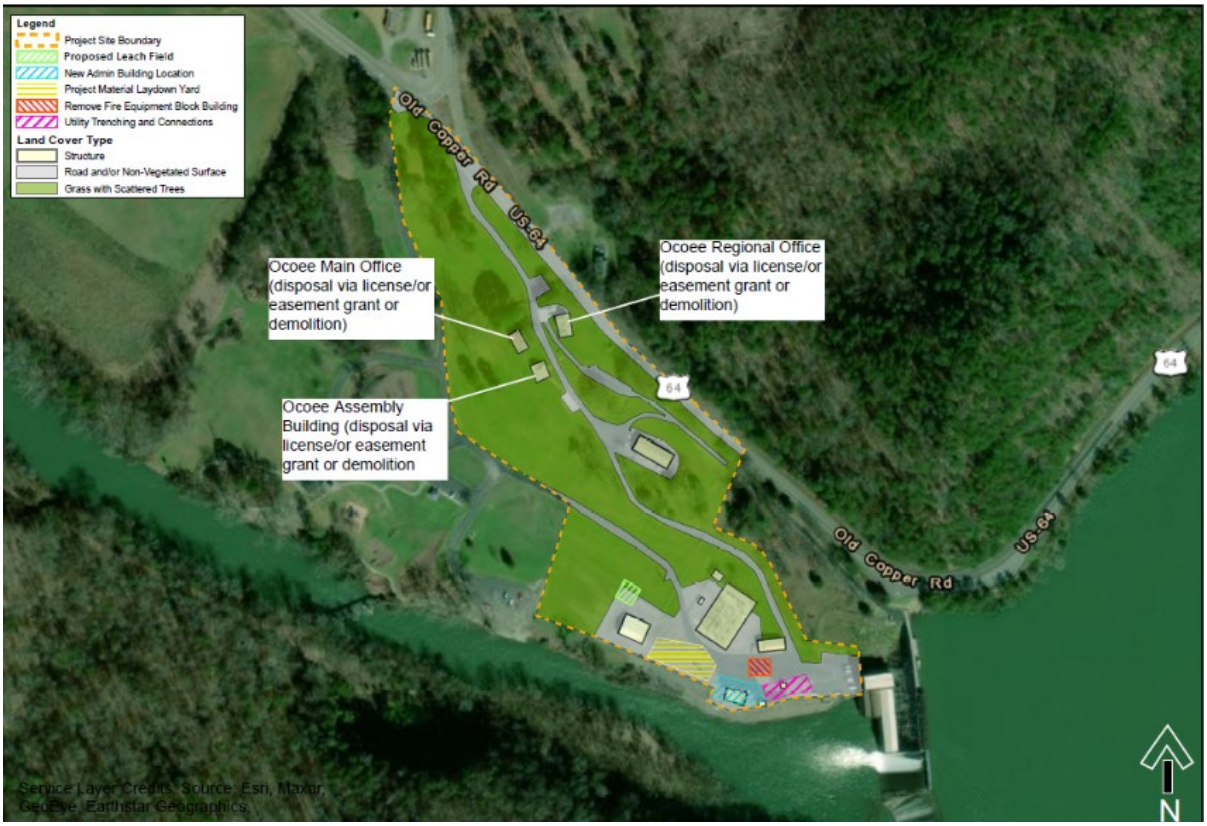

Figure 3-2 Land Cover Type within O1H Project Area.

Federally Threatened and Endangered Species (Plants)

A review of data from the IPaC identified two federally listed species as occurring within or immediately adjacent to the project area (Table 3-4).

Table 3-4 Record of Federally Listed Plant Species occurring within Ocoee County[1]

Common Name	Scientific Name	State Rank[2]	State Status[3]	Federal Status[4]	Habitat Description
Ruth's Golden Aster	*Pityopsis ruthii*	S1	T	E	Found within soil-filled cracks in phyllite boulders along river banks and in rivers. This species is shade intolerant and adapted to annual high-water flows; requires periodic flooding and scouring to remove competing vegetation (NatureServe, 2009)

Common Name	Scientific Name	State Rank[2]	State State[3]	Federal Status[4]	Habitat Description
White Fringeless Orchid	*Platanthera integrilabia*	S2S3	E	E	Found in generally wet, flat, boggy areas in acidic muck or sand; found in partially, but not fully shaded areas at the head of streams or seepage slopes (NatureServe, 2013)

[1] Source: IPac and TDEC Rare Species by Quadrangle
[2] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Abundant
[3] State Status Codes: E = endangered; T = Threatened; S = Special Concern
[4] Federal Status: LT = Listed Endangered

State Listed Species (Plants)
A review from the TDEC Rare Species by Quadrangle identified nine state listed plant species as occurring within or immediately adjacent to the project area (Table 3-5).

Table 3-5 Record of State-Listed Plant Species occurring within Ocoee County[1]

Common Name	Scientific Name	State Rank[2]	State State[3]	Federal Status[4]	Habitat Description
Trailing Trillium	*Trillium decumbens*	S1	E	-	Found in thin, open rocky wooded slopes of mature deciduous hardwoods. Also found in floodplains of small streams and adjacent slopes near river entrance (NatureServe, 2019)
Eastern Turkeybeard	*Xerophyllum asphodeloides*	S3	T	-	Found in dry oak-hickory woods associated with a component of *Pinus virginiana* and *Pinus echinata* (NatureServe, 1994)

Common Name	Scientific Name	State Rank[2]	State State[3]	Federal Status[4]	Habitat Description
Fraser's Yellow Loosestrife	*Lysimachia fraseri*	S2	E	-	Found in wet areas such as alluvial meadows, moist stream and riverbanks. Also found in habitats are naturally or anthropogenically disturbed such as pastures and roadside ditches (NatureServe, 2017)
Yellow Crested Orchid	*Platanthera cristata*	S2S3	S	-	Found in sunny, wet areas with acidic soils. Preferred habitat includes swamps, seeps, wet meadows, and boggy areas (U.S Forest Service, n.d)
Nestronia (Indian Olive)	*Nestronia umbellula*	S1	E	-	Habitat varies from inhabiting upland mixed pine to hardwood stands (U.S Forest Service, n.d.)
Chokecherry	*Prunus virginiana*	S1	S	-	Found in a large geographic area and grows abundantly in many habitat types (US. Forest Service, n.d)
Nevius's Stonecrop	*Sedum nevii*	S1	E	-	Preferred habitat for seedling establishment is a moist and mossy substrate; Often found in crevices on partially to fully shaded slopes of mixed hardwood forest (NatureServe, 2002).

Common Name	Scientific Name	State Rank[2]	State State[3]	Federal Status[4]	Habitat Description
American ginseng	*Panax quinquefolius*	S3S4	S	-	Primarily occurs in rich, cool, moist wet woods under a closed canopy; Typically occurs on slopes over a limestone or marble bedrock (NatureServe, 2005)
Purple Gerardia	*Agalinis plukenetii*	S1	E	-	Found in moist sandy fields, rocky shores, and serpentine barrens (NatureServe, 2020)

[1] Source: IPac and TDEC Rare Species by Quadrangle
[2] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Abundant
[3] State Status Codes: E = endangered; T = Threatened; S = Special Concern
[4] Federal Status: LT = Listed Endangered

The areas containing the three buildings for disposal are surrounded by manicured grass lawns and ornamental trees. The areas proposed for development with the new building are covered entirely in pavement with no vegetation present. Potential habitat for federal and state listed species was not identified within the project footprint. No rare plant communities are known to occur within the study area.

Executive Order 13112 (Invasive Species), as amended by EO 13751, defines an invasive species as any species that is not native to that ecosystem and whose introduction is likely to cause economic or environmental harm or harm to human health. Some of the common invasive plants identified in the project area include Bermuda and bahia grass. These species are commonly used in the U.S. as turf grass. These species have the potential to affect the native plant communities adversely because of their ability to spread rapidly and displace native vegetation.

Environmental Consequences

No Action Alternative
No significant environmental consequences would occur under the No Action Alternative.

Proposed Action Alternative A – Consolidation via License or Easement Grant
Under this action, no adverse effects are anticipated for listed species and vegetation. The mature trees located adjacent to the administration buildings will not be removed. Construction activities have the potential to temporarily affect storm water runoff, which could result in temporary disturbances that affect surrounding plant and environment interactions. These disturbances have the potential for invasive species to rapidly spread and displace native vegetation; however, these activities will be managed under the implementation of a SWPPP or a Construction Best Management Practices Plan (CBMPP). Revegetation using non-invasive native plants and seed mixtures would be required. Proper implementation of best management practices would result in only minor temporary impacts to plant species onsite and immediately adjacent.

Proposed Action Alternative B – Consolidation via Demolition
Under this action, no adverse effects are anticipated for listed species and vegetation. The removal of the three administration houses via demolition would impact plant species from the placement of construction equipment and workers which would disturb adjacent vegetation. The mature trees located adjacent to the buildings will not be removed. Implementation of BMP's consisting of erosion control measures and use of native seed mixes to establish desirable vegetation would minimize impacts. Revegetation using non-invasive native plants and seed mixtures would be required. The disposal of the three existing O1H administrative houses via demolition and construction of the new building would result in only minor temporary impacts if best management practices are implemented.

3.4 Managed and Natural Areas

Affected Environment
This section addresses natural areas (managed areas and sites) that are on, immediately adjacent to (within 0.5 miles), or within the region of the project area (3-mile radius). Natural areas include ecologically significant sites; federal, state, or local park lands; national or state forests; wilderness areas; scenic areas; wildlife management areas (WMAs); recreational areas; greenways; trails; Nationwide Rivers Inventory (NRI) streams; and wild and scenic rivers. Managed areas include lands held in public ownership that are managed by an entity (e.g., TVA, U.S. Department of Agriculture, United States Forest Service, State of Tennessee) to protect and maintain certain ecological and/or recreational features. 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. NRI streams are free-flowing segments of rivers recognized by the National Park Service (NPS) as possessing remarkable natural or cultural values.
A review of data from the TVA Natural Heritage Project that there are four natural areas within the defined project area (Table 3-5):

Table 3-6 Record of Managed and Natural Areas

Distance from Project	Managed Area Name	Managed Area Type
0.06	*Sugarloaf Mountain Park*	State Park
0.09	*Cherokee National Forest*	National Forest
0.09	*South Cherokee National Park*	National Forest and State Park
1.21	*Merrie J. Farm (Darden) – Conservation Easement Land Trust of Tennessee*	Conservation Easement

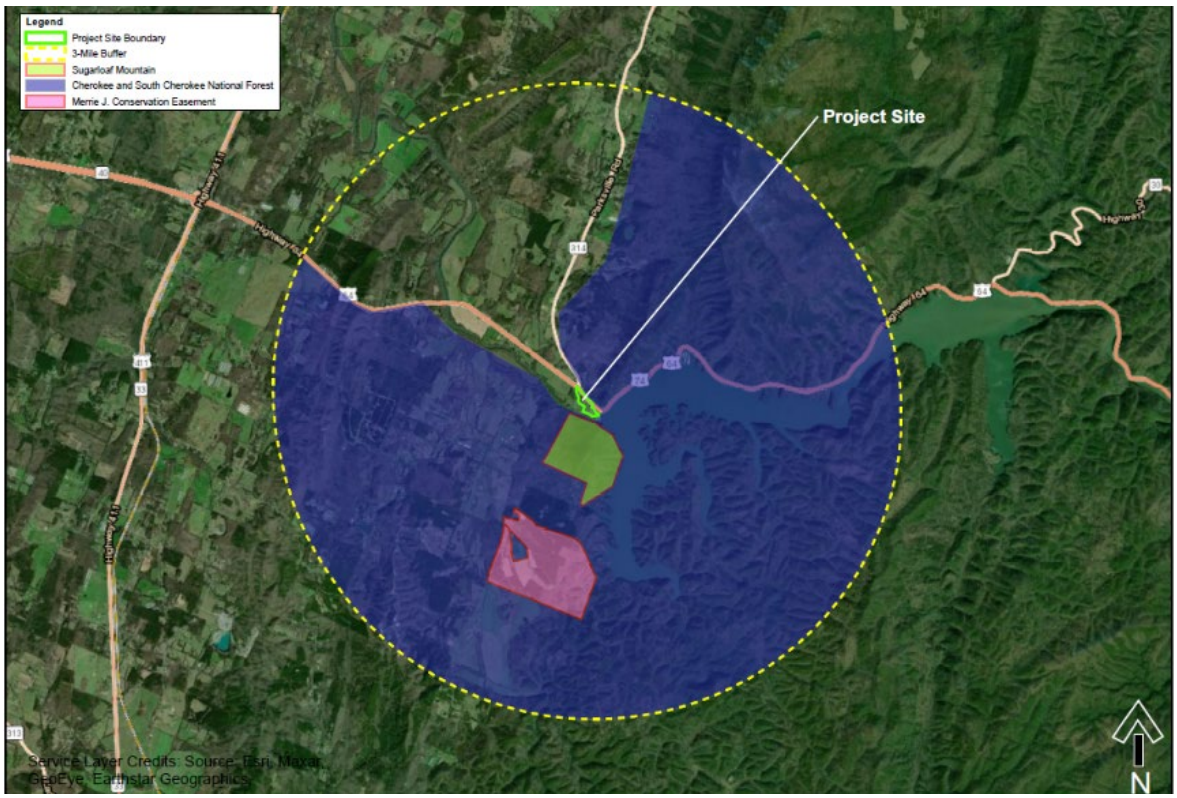

Figure 3-3 Map of Managed and Natural Areas within a 3-Mile Radius.

- Sugarloaf Mountain Park is located directly south and adjacent to the proposed project. This park is situated along the Ocoee River and features a 1:10 scale model of the 1996 Olympic Whitewater Course built at the Ocoee Whitewater Center. The park is also managed for public recreation, including hiking and swimming.

- Cherokee National Forest is located directly north and adjacent to the proposed project. This 655,598-acre area is managed for wildlife and recreation.

- South Cherokee National Forest and State WMA is a sub-portion of the Cherokee National Forest that overlaps with the national forest described above. The state of Tennessee manages this portion of the national forest for wildlife and hunting.

- Merrie J Farm conservation easement is located 1.21 miles southwest of the proposed project area. This conservation easement protects the scenic and conservation value of the 393-acre working farm.

Environmental Consequences

No Action Alternative

No significant environmental consequences would occur under the No Action Alternative.

Proposed Action Alternative A – Consolidation via License or Easement Grant

Three natural areas are located immediately adjacent (< 0.01-miles) to the proposed project site – Sugarloaf Mountain Park, Cherokee National Forest, and South Cherokee State WMA. There will be no direct impacts to these sites as no activities will occur within the boundaries

of these natural areas. Indirect impacts such as construction runoff will be eliminated via the use of standard BMPs. In addition, there could be minor impacts due to construction traffic and construction noise, but any indirect impacts will be temporary in nature and will not impact the overall integrity of the nearby sites. There will be no impacts to Merrie J Farm conservation easement as it is located a sufficient distance from the proposed project area.

Overall cumulative impacts to natural areas as the result of this project will be negligible and insignificant.

Proposed Action Alternative A - Consolidation via Demolition
Similar to Alternative A, Alternative B would result in indirect impacts such as construction noise and traffic. These impacts will be temporary and will not impact the overall integrity of the nearby sites.

3.5 Terrestrial Ecology

Affected Environment
The Area of Potential Effects (APE) is comprised of three existing buildings with surrounding landscaping (grass, shrubs, and trees), and paved areas adjacent to the Ocoee River and the Cherokee National Forest.

The large, older trees surrounding the houses in the APE and other landscaping provide habitat for common birds such as Carolina chickadee, Carolina wren, cedar waxwings, eastern blue bird, eastern towhee, northern cardinal, northern flicker, northern mockingbird, tufted titmouse, and white-throated sparrow (National Geographic 2002). Mammals found in these habitats include common raccoon, eastern gray squirrel, hispid cotton rat, nine-banded armadillo, and Virginia opossum (Whitaker 1996). Common amphibian and reptile species also use similarly disturbed habitats including American toad, eastern box turtle, eastern garter snake, and Fowler's toad (Powel et al. 2016).

Some wildlife are known to use man-made structures opportunistically. Common invertebrates and mammals have been observed using parts of buildings abandoned or used infrequently by humans. A honeybee colony has been active in the wall of the Rock House/Ocoee Main Office for several years. Mouse droppings were observed in the attics and/or crawl spaces of the houses in the APE. Woodchucks have been observed borrowing in the earthen crawl space under the assembly building. Several species of bats commonly found in this region may roost in abandoned, dark or quiet attics of these buildings (Harvey et al. 2011). However, no bats, guano, or staining was observed during December 2019 field surveys of accessible areas of each building. Migratory birds may also roost in buildings or areas of buildings used infrequently; however, no nests were observed in or on any of the buildings during field surveys. Other mammals and reptiles that may opportunistically utilize human structures include rat snake, deer mouse, and eastern gray squirrel.

Review of the TVA Regional Natural Heritage database in January 2020 indicates that no records of caves, wading bird colonies, or osprey nests exist within three miles of the project area.

Review of the USFWS's IPAC website in January 2020 resulted in the identification of six migratory bird species of conservation concern that have the potential to occur in the project action area (bald eagle, eastern whip-poor-will, prairie warbler, rusty blackbird, wood thrush, and yellow-bellied sapsucker). The vegetation in the APE is comprised of mature trees and

ornamental bushes in planned landscaping with mowed grass lawn. Suitable habitat does not exist in the action area for rusty blackbird, eastern whip-poor will, prairie warbler, or wood thrush. No bald eagles or their nests were observed in or adjacent to the APE during field surveys. Please refer to the T&E section for review of potential impacts to bald eagle. Yellow-bellied sapsucker could use the mature trees for foraging in winter months when it is present in the region.

Terrestrial Threatened and Endangered Species (Animals)

Review of the TVA Natural Heritage Project Database in January 2020 indicated that there are records of two state-listed terrestrial animal species (northern pine snake and seepage salamander) within 3 miles of the APE. Two federally listed terrestrial animal species (gray bat and northern long-eared bat) and one federally protected terrestrial animal species (bald eagle) have also been reported within Polk County, Tennessee. The USFWS determined that the federally listed Indiana bat also has the potential to occur in Polk County. Thus, impacts to this species will be evaluated. (Table 3-6).

Table 3-7 Federal and State-Listed Terrestrial Animal Species located within Polk County, Tennessee and other species of concern documented within three miles of the Ocoee 1 Hydro Consolidation project.[1]

Common Name	*Scientific Name*	Federal Status	State Status	State Rank
AMPHIBIANS				
Seepage salamander	*Desmognathus aeneus*	--	D	S1
BIRDS				
Bald Eagle	*Haliaeetus leucocephalus*	DM	D	S3
MAMMALS				
Gray bat[4]	*Myotis grisescens*	LE	E	S2
Indiana bat[5]	*Myotis sodalis*	LE	E	S1
Northern long-eared bat[4]	*Myotis septentrionalis*	LT	T	S1S2
REPTILES				
Pituophis melanoleucus melanoleucus	Northern Pine Snake	--	T	S3

[1] Source: TVA Regional Natural Heritage Database and USFWS Information for Planning and Consultation (https://ecos.fws.gov/ipac/), extracted 01/21/2020.
[2] Status Codes: D = Deemed in need of management; DM = Delisted, recovered, and still being monitored; E = Endangered; LE = Listed Endangered; LT = Listed Threatened; T = Threatened.
[3] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable.
[4] Federally listed or protected species known from Polk County, Tennessee, but not within three miles of the project APE.
[5] Federally listed species that is not yet known from Polk County, Tennessee, but is thought to occur in this county.

Seepage salamanders inhabit seepages or forested habitats adjacent to small streams. They are found in moist, thick leaf litter where they hunt for invertebrates or beneath logs, rocks, and mats of moss (Niemiller and Reynolds 2011; Petranka 1998). The closest occurrence record of this species is approximately 2.9 miles away. Based on TVA field surveys performed on December 10, 2019, no suitable habitat exists in the APE for seepage salamander.

Northern pine snakes are generally found in areas of sandy, well-drained soils where they can borrow easily to hunt for prey. In mountainous areas like the project area, they are likely

found in dry, rocky areas (Dorcas and Gibbons 2005). The closest occurrence record of northern pine snake is approximately 2.6 miles away. Based on TVA field surveys performed on December 10, 2019, no suitable habitat exists in the APE for northern pine snake.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (USFWS 2013). This species is associated with larger mature trees capable of supporting its massive nests. These are usually found near larger waterways where the eagles forage (USFWS 2007). Records document the occurrence of one bald eagle nest in Polk County, Tennessee, approximately 4.1 miles away. Potential nesting trees occur in the large pines within the APE and suitable foraging habitat occurs over the Ocoee River adjacent to the APE. However, no bald eagles or bald eagle nests were observed during TVA field surveys of the APE on December 10, 2019.

Gray bats roost in caves year-round and migrate between summer and winter roosts during spring and fall (Brady et al. 1982, Tuttle 1976a). Bats disperse over bodies of water at dusk where they forage for insects emerging from the surface of the water (Tuttle 1976b). Although uncommon, gray bats have been reported using buildings as roosting sites (Gunier and Elder 1971). Locally, gray bats have been reported from mist net captures in Cherokee National Forest in 1999 approximately 3.85 miles away.

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 (Pruitt and TeWinkel 2007, Kurta et al. 2002). Indiana bats are known to change roost trees frequently throughout the season, while still maintaining site fidelity, returning to the same summer roosting areas in subsequent years (Pruitt and TeWinkel 2007). Although less common, Indiana bats have also been documented roosting in buildings (Butchkoski and Hassinger 2002). No records of Indiana bat are known from Polk County, Tennessee. The closest known Indiana bat occurrence records are approximately 24.5 miles away in Cherokee National Forest.

The northern long-eared bat (NLEB) predominantly overwinters in large hibernacula such as 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, NLEBs 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 NLEB 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 known NLEB records across Cherokee National Forest. The closest of these occurrence records is approximately 3.85 miles away.

No caves are known from the project APE or were observed during field surveys. None are known within three miles of the project. Following the 2019 Range-Wide Indiana Bat Survey Guidelines (USFWS 2019), TVA surveyed trees and man-made buildings for potential habitat for federally listed bats on December 10, 2020. Most of the trees surrounding the buildings are large and old with crevices from broken limbs, woodpeckers holes, or scars. Eight individual trees and a row of planted, mature, pine trees within close proximity to the buildings were identified as having exfoliating bark and/or crevices/holes that are suitable roosting habitats for Indiana bat and NLEB. No evidence of bat use was observed inside or on the

exterior of the buildings within the APE. While the attic of the Rock House/Ocoee Main Office does not provide suitable habitat for winter roosting bats, it may provide suitable roosting habitat for summer roosting bats or as transitional sites for foraging or migrating bats. Access holes and suitable roosting locations in the attic were present. The attic of the assembly building was not able to be surveyed due to access issues. While no suitable foraging habitat for gray bat occurs in the APE; the trees in the APE offer suitable foraging habitat for Indiana bat and NLEB. Additional foraging habitat and sources of drinking water for all three bat species exists over the Ocoee River immediately adjacent to the APE.

Environmental Consequences

No Action Alternative
No significant environmental consequences would occur under the No Action Alternative.

Proposed Action Alternative A – Consolidation via License or Easement Grant

Terrestrial Animals: In order to prepare the site for this type of disposal, the honey bee colony would be removed from the Rock House/Ocoee Main Office using trained experts that would relocate the colony prior to disposal. Removal of this colony in an appropriate manner would minimize the potential for impacts to the colony by future property owners. Mice and other mammals currently using the buildings would continue to use the building in its current state and would not be impacted by proposed actions as no improvements or renovations would occur prior to disposal. While no bats, guano, or staining were observed during field surveys the attic of the Rock House/Ocoee Main Office does have the potential to host a summer colony of bats or a transitional colony during migration. At the time of the TVA field survey, the attic of the assembly building was not surveyed due to access issues. In order to properly identify all potential wildlife resources impacted by this alternative, additional bat surveys of the attics for both buildings (Rock House/Ocoee Main Office and assembly building) would occur in summer months prior to disposal. Should a colony of common bats be identified, TVA would explore humane techniques approved by the Tennessee Wildlife Resources Agency to exclude this colony from the attic during appropriate species-specific seasons prior to disposal. Exclusion of any potential colonies using species-specific human techniques would minimize the potential for impacts to the colony by future property owners.

One of the migratory bird species of conservation concern identified by USFWS (yellow-bellied sapsucker) has the potential to occur in trees found in the APE during winter months. Tree removal is not proposed under this alternative. Disposal of the buildings by license, or easement grant would not impact habitat for yellow-bellied sapsucker. Under this alternative, no impacts to migratory bird species of conservation concern are anticipated.

Additional surveys and use of appropriate relocation and/or exclusion techniques would minimize adverse impacts to wildlife using buildings and trees in the APE. No significant impacts to wildlife are anticipated under Action Alternative A.

Federally T&E Terrestrial Animals: Based on field surveys performed on December 10, 2019, no suitable habitat exists in the APE for seepage salamander or northern pine snake. These species would not be impacted under Action Alternative A.

Proposed actions under this alternative would not impact nesting bald eagles as no nests were observed in the APE during field surveys and no nests are known within a mile of the action area. While foraging habitat for bald eagles exists over the Ocoee River, no impacts

to the river are anticipated with the use of BMPs during proposed actions. Actions, as proposed, are in compliance with the National Bald Eagle Management Guidelines. Bald eagles would not be significantly impacted by proposed actions under Action Alternative A.

Three additional federally listed or protected species have the potential to occur in the project footprint. All of these (gray bat, Indiana bat, and northern long-eared bat) have the potential to utilize the project area. No caves or other winter hibernacula for gray bat, Indiana bat, or northern long-eared bat exist in the project footprint or would be impacted by the proposed actions. No tree removal is proposed at this time therefore no impacts to forested summer roosting habitat for Indiana bat or northern long-eared bat is anticipated. In addition, with the use of BMPs no impacts to the Ocoee River are anticipated. Therefore, no impacts to terrestrial or aquatic foraging habitat are anticipated. No evidence of bat use was observed inside or on the exterior of the buildings within the APE. While the attic of the Rock House/Ocoe Main Office does not provide suitable habitat for winter roosting bats, it may provide suitable roosting habitat for summer roosting bats or as transitional sites for foraging or migrating bats. Access holes and suitable roosting locations in the attic were present. The attic of the assembly building was not surveyed due to access issues. Additional bat surveys of the attics of both buildings (Rock House/Ocoee Main Office and White House/assembly building) would occur in summer months prior to disposal.

A number of activities associated with the proposed project, including building demolition, were addressed in TVA's programmatic consultation with the USFWS on routine actions and federally listed bats in accordance with ESA Section 7(a)(2) and completed in April 2018. For those activities with potential to affect bats, TVA committed to implementing specific conservation measures. These activities and associated conservation measures are identified on pages 5 and 6 of the TVA Bat Strategy Project Screening Form (Appendix B) and need to be reviewed/implemented as part of the proposed project.

Proposed Action Alternative A – Consolidation via Demolition

Terrestrial Animals: The honeybee colony would be relocated prior to demolition. Additional bat surveys of the attics of the Rock House/Ocoee Main Office and White House/assembly building would occur in summer months prior to demolition. Should a colony of common bats be identified, TVA would perform humane exclusion techniques approved by the Tennessee Wildlife Resources Agency to exclude this colony from the attic during the appropriate season prior to demolition. Additional effects under this alternative include the loss of habitat and potential mortality to individual mice and wood chucks during demolition. Loss of a small number of common house mice and woodchucks would not impact populations of these species in the area.

One of the migratory bird species of conservation concern identified by USFWS (yellow-bellied sapsucker) has the potential to occur in trees found in the APE during winter months. Tree removal is not proposed under this alternative at this time. Demolition of these buildings may disturb individual sapsuckers using nearby trees causing the birds to flush. No direct impacts are anticipated as no tree removal is proposed and any adults on site would be able to fly if disturbed. Under this alternative, no impacts to migratory bird species of conservation concern are anticipated.

Additional surveys and use of appropriate relocation and/or exclusion techniques would minimize adverse impacts to wildlife using buildings and trees in the APE. No significant impacts to wildlife are anticipated under Action Alternative B.

Federally T&E Terrestrial Animals: All resulting effects to Threatened and Endangered Species under this alternative are identical to those described under Action Alternative A.

3.6 Wetlands

Affected Environment

Wetlands are areas inundated by surface or groundwater often enough to support vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, mud flats, and natural ponds.

Activities in wetlands are regulated under Section 404 of the CWA, as well as Executive Order 11990. Under Section 404, the USACE established a permit system to regulate activities in Waters of the United States, including wetlands. In order to conduct specific activities in wetlands authorization under either a Nationwide General Permit or an Individual Permit from the Corps is required. Section 401 water quality certification issued by the Tennessee Department of Environment and Conservation is also required. Executive Order 11990 requires all Federal agencies to minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities.

A desktop analysis of National Wetland Inventory maps, aerial photography, and soils data indicates there are no wetlands present within the areas proposed for disturbance. Figure 3-4 illustrates mapped wetlands documented near the project area.

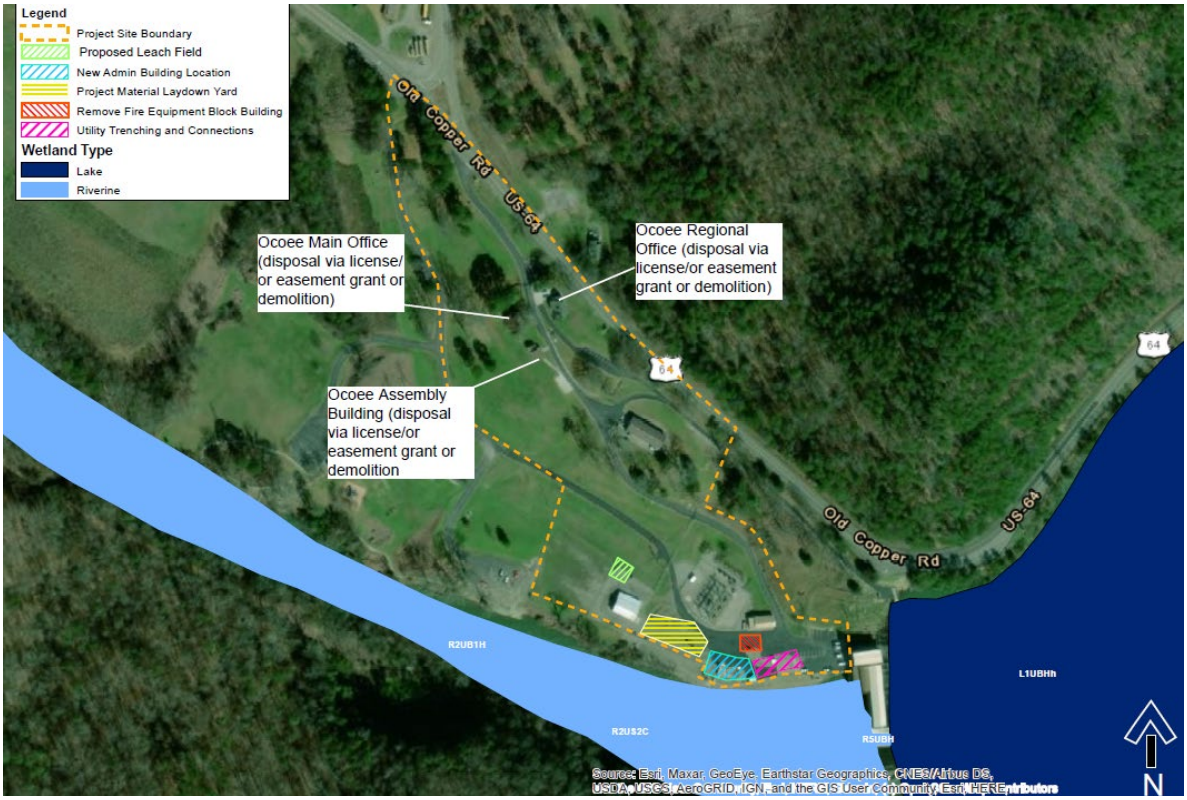

Figure 3-4 NWI Map of O1H Project Area.

Environmental Consequences

No Action Alternative
No significant environmental consequences would occur under the No Action Alternative.

Proposed Action Alternative A – Consolidation via License or Easement Grant

Under Action Alternative A, there would be no impacts to wetlands as there are no wetlands presents within the proposed project area.

Proposed Action Alternative A – Consolidation via Demolition
Under Action Alternative B, there would be no impacts to wetlands as there are no wetlands presents within the proposed project area.

3.7 Cultural and Historic Resources

Affected Environment

Cultural resources or historic properties include prehistoric and historic archaeological sites, districts, buildings, structures and objects as well as locations of important historic events. Federal agencies, including TVA, are required by National Historic Preservation Act (NHPA) (16 USC 470) and by NEPA to consider the possible effects of their undertakings on historic properties. “Undertaking” means any project, activity, or program and any of its elements, which has the potential to have an effect on a historic property and is under the direct or indirect jurisdiction of a federal agency or is licensed or assisted by a federal agency. An agency may fulfill its statutory obligations under NEPA by following the process outlined in the regulations implementing Section 106 of NHPA at 36 CFR Part 800. Additional cultural resource laws that protect historic resources include the Archaeological and Historic Preservation Act (16 USC 469-469c), Archaeological Resources Protection Act (16 USC 470aa-470mm) and the Native American Graves Protection and Repatriation Act (25 USC 3001-3013).

Section 106 of the NHPA requires that federal agencies 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 carried out in consultation with the SHPO and other interested consulting parties, including federally recognized Indian tribes.

Cultural resources are considered historic properties if they are listed or eligible for listing in the National Register of Historic Places (NRHP). The NRHP eligibility of a resource 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, association and

a. Are associated with events that have made a significant contribution to the broad patterns of our history; or
b. Are associated with the lives of persons significant in our past; or
c. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic value; or
d. Have yielded, or may yield, information (data) important in prehistory or history.

A project may have effects on a historic property that are not adverse, if those effects do not diminish the qualities of the property that identify it as eligible for listing on the NRHP. However, if the agency determines (in consultation with the SHPO and other parties) that the undertaking's effect on a historic property within the area of potential APE would diminish any of the qualities that make the property eligible for the NRHP (based on the criteria for evaluation at 36 CFR Part 60.4 above), the effect is said to be adverse. Examples of adverse effects would be ground-disturbing activity in an archaeological site or erecting structures within the viewshed of a historic building in such a way as to diminish the structure's integrity of feeling or setting.

Federal agencies must resolve the adverse effects of their undertakings on historic properties. Resolution may consist of avoidance (such as choosing a project alternative that does not result in adverse effects), minimization (such as redesign to lessen the effects), or mitigation. Adverse effects to archaeological sites are typically mitigated by means of excavation to recover the important scientific information contained within the site. Mitigation of adverse effects to historic structures sometimes involves thorough documentation of the structure by compiling historic records, studies and photographs. Agencies are required to consult with SHPOs, tribes and others throughout the Section 106 process and to document adverse effects to historic properties resulting from agency undertakings.

For the purposes of this assessment, TVA determined the area of potential effects (APE) to be the entirety of the O1H facility (the National Register of Historic Places [NRHP]-eligible boundary except for the one former operator's house across from the facility, which is no longer associated with the TVA plant). This is slightly larger than the Project Boundary for this project. The only historic architectural resource within view of the location of the new administration building is the O1H facility itself; therefore, an architectural viewshed analysis is not required for this project.

Cultural Resources (Archaeological and Historic Architectural Resources):
Historic Architectural Resources

Four above-ground (historic architectural) cultural resources, all previously-recorded, are located within the APE. These include Ocoee No. 1 (O1H), three houses associated with O1H (O1H PSS Building AEM8474 [White House/Ocoee Assembly Building], O1HTODA Building AEM8475 [Rock House/Ocoee Main Office], and O1H Plant Office O1PO/Ocoee Regional Office). Figure 3-5 depicts the locations of the four cultural resources.

O1H was listed in the NRHP in 1990 as the Ocoee Number One Hydroelectric Station under the *Pre-TVA Hydroelectric Development in Tennessee, 1901–1933* multiple property documentation form (Jones 1989; Jones 1990). A recent assessment of O1H by Cultural Resource Analysts, Inc. (CRA) recommended that O1H retains integrity to remain listed and that the NRHP boundary should include the entire O1H property as well as a house across US Highway 64/74/TN-40 (Reynolds 2020:51-52). The following pages include photographs of the buildings.

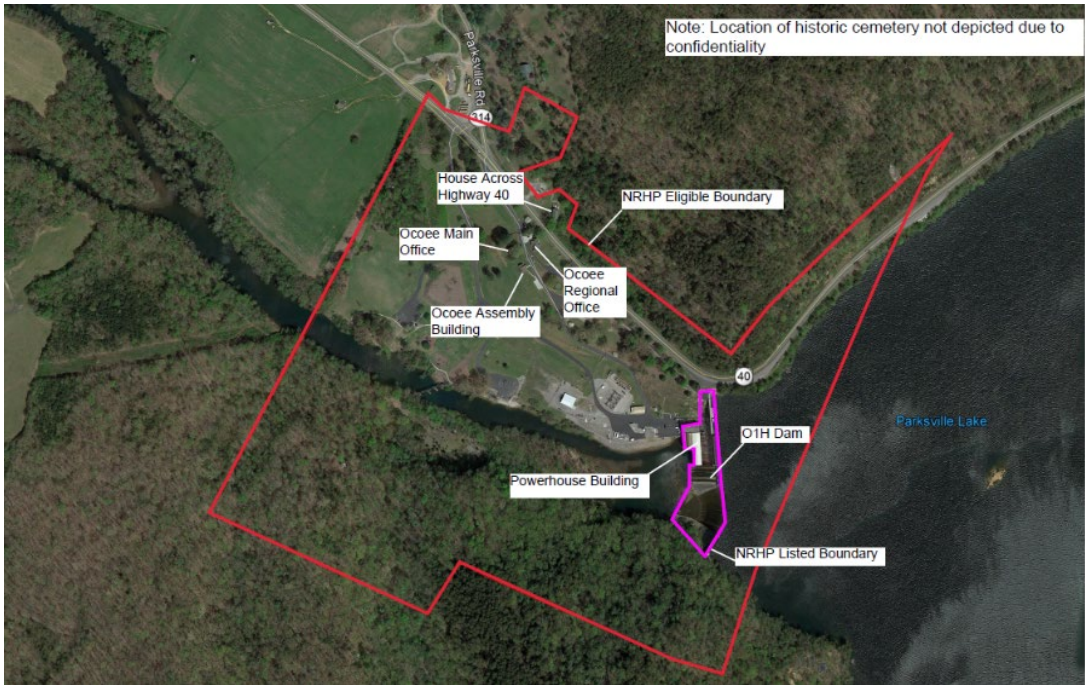

Figure 3-5 Five cultural resources identified in the project area including O1H, three O1H administration houses (contributing to O1H), and Shields-Parksville Cemetery (not shown)

View of O1HTODA Building AEM8475 (Rock House/Ocoee Main Office), facing west/southwest.

View of O1H PSS Building AEM8474 (White House/Ocoee Assembly Building), facing north/northwest.

View of O1H Plant Office O1PO/Ocoee Regional Office, facing south/southeast.

View of fourth house associated with O1H is located across the highway from the remainder of the O1H facility.

Archaeological Resources

One portion of the APE has been subject to archaeological investigations previously. TVA contracted with the Archaeological Research Laboratory of the University of Tennessee in 2017 for a phase I archaeological survey of three tracts to be affected by proposed changes in whitewater recreation agreements (Altizer et al. 2017). One of the survey tracts (XTOCR-14RE) partially overlaps the Project Boundary, along both sides of the entrance road to the Ocoee Main Office, Assembly Building, and Electrical Shop. The survey included visual examination and systematic shovel testing; it did not identify any archaeological resources within the Project Boundary. However, the survey did not include the areas where the current Ocoee Administration buildings are located, nor the areas of the proposed new Administration Building or associated drain field.

One previously-recorded archaeological site, the Shields-Parksville Cemetery (also called the Shields Cemetery or Parksville Cemetery), is located in the APE. This cemetery is documented by a 1940 Works Progress Administration report and several later sources. The Shields-Parksville Cemetery pre-dates development of the O1H facility. Furthermore, research conducted by both CRA and Wood at O1H did not reveal any above-ground components (such as monuments) associated with the Shields-Parksville Cemetery. Therefore, the cemetery should not be assessed or documented as an above-ground resource, but rather as an archaeological resource.

Based on documentary sources, the Shields-Parksville Cemetery may contain six or more graves, and was in use from prior to the Civil War until ca. 1900. The cemetery was located somewhere in the vicinity of the (later constructed) Rock House, White House, or rail spur

areas along a road in the O1H reservation. Extensive archival and anecdotal research indicates a few possible locations for the cemetery (Reynolds 2020:51).

Visual examination of these areas by TVA archaeologists failed to identify any grave markers or grave depressions. Given the cemetery's period of use, it is not related to the hydro facility and is not a contributing resource to O1H. TVA currently does not have enough information to determine its individual evaluation under NRHP.

TVA retained Wood Environment and Infrastructure Solutions, Inc. (Wood) to perform an archaeogeophysical investigation at two areas within the TVA O1H facility (Wampler and Martin 2020) in an effort to identify the location of the Shields-Parksville Cemetery. The two areas investigated showed the highest probability of containing the cemetery, based on background research. The study relied on electrical resistivity survey in selected sampling grids surrounding the three hypothetical cemetery locations, supplemented by ground-truthing with tile probes. The investigation identified nine anomalies in the APE that may represent unmarked burials. No formal cemetery limits were identified in the geophysical data.

The investigation identified two areas, separated by approximately 700 feet that contain potential unmarked graves. One of the areas is near the Rock House; the other is just southeast of the Electrical Shop. The two areas contain a combined total of at least nine possible graves. TVA has determined that both areas are part of the historically-documented Shields-Parksville Cemetery. All nine potential unmarked graves were identified near the edges of geophysical survey blocks. Thus, additional potential graves could be located just outside of the survey area or underneath the Rock House, which was inaccessible for remote sensing. TVA finds that there is not enough information at this time to assess the total size or potential NRHP eligibility of the Shields-Parksville Cemetery and that its NRHP eligibility status should be considered undetermined.

Despite previous disturbance from the development and construction of the O1H facility, TVA finds there is a potential for deeply buried cultural deposits in this area, based on examinations of historic and current USGS topographic quadrangles and on our understanding of how O1H was constructed. In addition, it is possible that there are areas within the O1H facility that may not have been disturbed during the construction of the facility.

TVA archaeologists conducted a field review for this project on December 2, 2020 which included pedestrian walkover of accessible areas of the O1H reservation where construction-related activities could take place. This includes areas where historical research suggests the presence of unmarked cemeteries (Reynolds 2020). The goal of the field review was to identify any unknown cultural resources that could be affected by construction to include the proposed administration building and associated utility lines or drainfields. Opportunistic shovel testing, deep auger testing, and pedestrian survey were conducted outside of the possible cemetery locations near the proposed construction, but where asphalt and crushed rock pavement did not cover the landform. No artifacts were collected during the course of this investigation. All field notes, photographs, and other materials will be digitally curated in the TVA Integrated Cultural Database.

The results of the field review are outlined in a report (Nichols 2020). The report finds that there is ample fill soil and documentary evidence that the entire middle terrace landform within the APE has been extensively modified by construction and that there is little potential for intact deep deposits. If there are intact non-cemetery cultural deposits that could be

affected by the proposed construction, they would most likely be historic railroad-related deposits. Therefore, it is TVA's finding that the Project Boundary contains one archaeological site, the Shields-Parksville Cemetery, and that this cemetery is of undetermined NRHP eligibility.

TVA is consulting with the TN SHPO regarding these findings and determinations in a letter dated January 26, 2020. Pursuant to 36 C.F.R. Part 800.3(f)(2), TVA is also consulting 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 United Keetoowah Band of Cherokee Indians in Oklahoma (Appendix C).

Environmental Consequences

No Action Alternative

Under the No Action Alternative, the three houses at the O1H facility would continue to be utilized in their current state, as offices to support the O1H facility. Deferred maintenance of these houses could result in deterioration eventually leading to an adverse effect as outlined in 36 CFR Part 800.5 (a)(2)(vi). This potential adverse effect would trigger a need for mitigation. Given that there would be no ground disturbance associated with this alternative, there would be no potential for this alternative to impact archaeological resources.

Proposed Action Alternative A – Consolidation via License of Easement Grant

Consolidation of the administrative spaces at O1H into a new administration building (Action Alternatives A and B) would change the character of the property's physical features that contribute to its historic significance. The construction of the new administration building would introduce new materials and design to the site that differ from the historic nature of the property, diminishing the integrity of setting and design of the NRHP-listed property. Therefore, TVA finds that this action would result in an adverse effect on O1H.

Disposal of the three houses via license or easement grant of the buildings, individually or together, and/or the land (Action Alternative A), could further result in adverse effects. If alterations or renovations to the buildings by the potential lessee(s) are not in keeping with the Secretary of the Interior's (SOI) standards for the treatment of historic properties (36 CFR Part 68, SOI Standards). In addition, the removal of the houses from federal control could result in adverse physical impacts to the identified portions of the Shields-Parksville Cemetery, or unidentified portions of the cemetery. Although the cemetery's NRHP eligibility status is undetermined, it may be eligible, and even if not eligible, TVA recognizes that is has other kinds of value and should be preserved to the extent possible.

Should TVA decide to dispose of the houses via license or easement grant, we propose to include language in the lease/easement documents that requires review of plans and alterations by TVA's Cultural Compliance staff. This review would require that any alterations or renovations carried out by the licensee or easement holder be in keeping with the SOI Standards. The language also would prohibit any ground disturbance within the 50-meter buffer around potential burials and within the footprint of each house, where geophysical survey could not be completed. This language would specify that if these areas cannot be

avoided, or if the SOI Standards cannot be met, TVA would assist in the development and completion of appropriate mitigation to offset adverse effects to the three houses. This language would commit the licensee or easement holder legally to the restrictions.

Alternative B – Consolidation via Demolition
Under Action Alternative B, TVA would dispose of the houses through demolition under Action Alternative B. Demolition would not only result in a direct and visual effect to O1H through the loss of contributing resource, but it could also result in physical effects to the cemetery. A treatment plan, developed in consultation with the Tennessee State Historic Preservation Officer, would be required to outline the measures for the avoidance or minimization of adverse effects to potential burials associated within the cemetery during demolition of the structures.

3.8 Floodplains

Affected Environment

A floodplain is the relatively level land area along a stream or river that is subject to periodic flooding. Flood hazard areas are identified on the Flood Insurance Rate Map (FIRM) as Special Flood Hazard Areas (SFHA). SFHA are defined as areas that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred as the 100-year flood. The area subject to a 0.2 percent chance of flooding in any given year is normally called the 500-year floodplain.

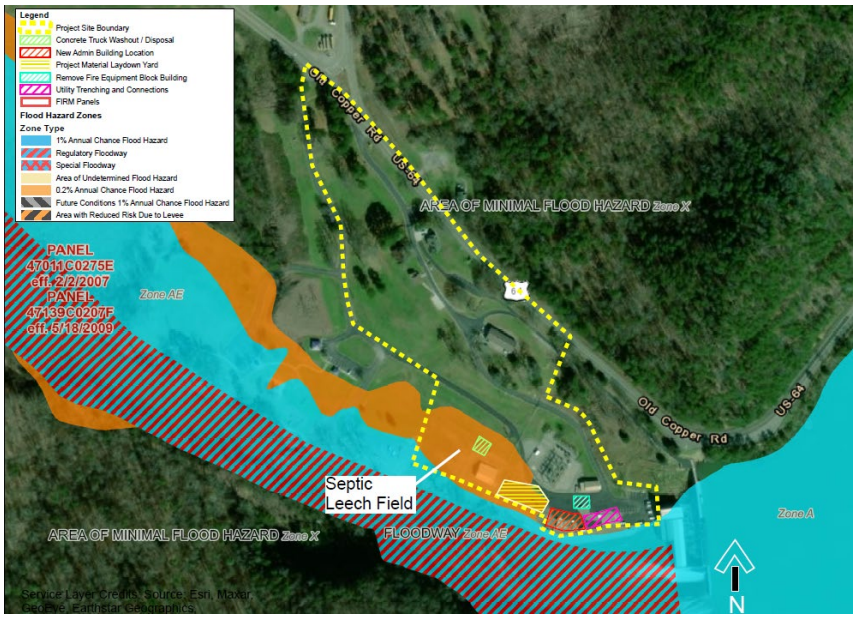

Figure 3-6 Map of FEMA Flood Hazard Zone Map.

Environmental Consequences
As a federal agency, TVA adheres to the requirements of EO 11988, Floodplain Management. The objective of EO 11988 is "… to avoid the extent possible the long- and short-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative" (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.

No Action Alternative
No new impacts to 100-year floodplains would occur under the No Action Alternative.

Action Alternatives A and B
Based on a review of the 2009 Polk County, Tennessee, Flood Insurance Rate Map Panel 47139C0207F, effective 5/18/2009, the proposed disposal of existing structures and construction of a septic field and administration building, and use of a laydown area would be located outside the limits of the 100-year floodplain (Figure 3-6), which would be consistent with EO 11988. To minimize adverse indirect impacts, any demolition material resulting from the project would be disposed of at a location outside of 100-year floodplain. Therefore, there would be no direct impacts on floodplains and their natural and beneficial values.

3.9 Parks and Recreation

Affected Environment
Sugarloaf Mountain Park, managed by the State of Tennessee, is located directly adjacent to the southern boundary of the project area. Park facilities include a boat launching area, picnic tables, trails, and play equipment. The park is situated in a semi-developed setting and is located just downstream from the Ocoee No. 1 Dam and hydro plant. Ocoee Outdoors, a commercial river outfitter, is located approximately .25 miles north of the project area. U. S. Highway 64 also separates the project area from Ocoee Outdoors.

Environmental Consequences

No Action Alternative
Under the no action alternative, the proposed project would not be implemented and no impacts on nearby recreation areas would occur.

Proposed Action Alternative A - Consolidation via License or Easement Grant
Under Action Alternative A, the project would be implemented, and TVA would dispose of the three existing O1H administrative houses via license, or easement grant of the buildings (individually or together) and/or the land. TVA would proceed with the consolidation efforts at O1H.

Access to the Sugarloaf Park would not be affected by project implementation and the overall character of the area would not be significantly changed. Some project activities such as noise associated with building construction or demolition could have minor impacts on park users, but any impacts should be minor and temporary in nature. Because the Ocoee Outdoors commercial operation is located north of the project area and across Highway 64, no impacts on this operation are anticipated.

Proposed Action Alternative B
Under this action, the disposal of the three existing O1H administrative houses would occur via demolition and TVA would proceed with the consolidation efforts at O1H. Some project activities such as noise associated with building construction and demolition could have minor

impacts on park users, but any impacts should be minor and temporary in nature. Because the Ocoee Outdoors commercial operation is located north of the project area and across Highway 64, no impacts on this operation are anticipated.

3.10 Surface Water and Soil Erosion

Affected Environment

This project area is located in Polk County, TN and drains to water ways within the Ocoee (0602000302) 10-digit Hydrologic Unit Map (HUC) watershed. The surface water streams in the vicinity of this project are listed below in Table 3.1.

Precipitation in the general area of the proposed project averages about 53.8 inches per year. The wettest month is December with approximately 5.0 inches of precipitation, and the driest month is October with 3.31 inches. The average annual air temperature is 58.8 degrees Fahrenheit, ranging from a monthly average of 46.9 degrees Fahrenheit to 70.7 degrees Fahrenheit (US Climate Data, 2019). Stream flow varies with rainfall and averages about 31.52 inches of runoff per year, i.e., approximately 2.32 cubic feet per second, per square mile of drainage area (USGS 2008).

The CWA requires all states to identify all 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 the US Environmental Protection Agency (EPA). The term “303(d) list” refers to the list of impaired and threatened streams and water bodies identified by the state. The Ocoee River in the vicinity of the project is currently listed on Tennessee’s 303(d) list for low flow alterations, due to upstream impoundment; zinc, iron, copper and sedimentation/siltation due to mill tailings, mine tailings, contaminated sediments and impacts from abandoned mine lands. (TDEC, 2018).

As part of its Reservoir Ecological Health Monitoring Program, TVA monitors ecological conditions on its 31 reservoirs on a two-year cycle. The health ratings are based on five factors: dissolved oxygen, chlorophyll, fish, bottom dwellers, and sediment. The ecological heath rating at Parksville Reservoir was rated “fair” in 2017 due to lower scores for dissolved oxygen and chlorophyll. In 2017, dissolved oxygen, chlorophyll, and fish were rated fair; bottom life was rated good; and sediment was rated poor. The past mining practices in the Copper Basin have left a legacy of high concentrations of metals in the sediment.

The Ocoee River in the vicinity of the project is also listed as an Exceptional Waters of Tennessee. Table 3-7 provides a listing of local streams with their state (TDEC 2013) designated uses.

Table 3-8 Designations for Streams in the Vicinity of the Proposed TPS Project Viper EA

Stream		Use Classification[1]						
	NAV	DOM	IWS	FAL	REC	LWW	IRR	TS
Ocoee River		X	X	X	X	X	X	

[1] Codes: DOM = Domestic Water Supply; IWS = Industrial Water Supply; FAL = Fish and Aquatic Life; REC = Recreation; LWW = Livestock Watering and Wildlife; IRR = Irrigation, NAV = Navigation, TS = Trout Stream
[2] Not in project area, shown for flow network.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, no buildings would be demolished or built, therefore, no environmental impacts to surface water would occur.

Alternative A – Consolidation via License or Easement Grant

Under Action Alternative A, TVA proposes to dispose of the three existing O1H administrative houses via license or easement grant of the buildings (individually or together) and/or the land. TVA would proceed with the consolidation efforts at O1H. These proposed actions would include the following: Site preparation and construction for the new building, including a laydown area.

Construction/Demolition Impacts:

Surface Runoff - Demolition and construction activities have the potential to temporarily affect surface water via storm water runoff. Soil erosion and sedimentation can clog small streams and threaten aquatic life. TVA would comply with all appropriate state and federal permit requirements. Appropriate BMPs would be followed, and all proposed project activities would be conducted in a manner to ensure that waste materials are contained, and the introduction of pollution materials to the receiving waters would be minimized. A general construction storm water permit would be needed if more than 1 acre is disturbed. This permit also requires the development and implementation of a Storm Water Pollution Prevention Plan. Because this project is in the vicinity of either impaired or exceptional waters, than additional protective measures may be required, such as expanded buffer zones. Please refer to the TDEC General Construction Storm Water permit (TDEC 2016b) for details. The SWPPP would identify specific BMPs to address construction-related activities that would be adopted to minimize storm water impacts. Additionally, BMPs, as described in *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority* (TVA 2017) and in the Tennessee Erosion and Sediment Control Handbook (TDEC 2012), would be used to avoid contamination of surface water in the project area.

Additionally, impervious buildings and infrastructure prevent rain from percolating through the soil and result in additional runoff of water and pollutants into storm drains, ditches, and streams. Because of the footprint of this project, the potential demolition of the unused buildings could reduce impervious surface area, while the development of the new administration building would appear to not change impervious surface area significantly. Under the action alternative, any future development would need to be properly treated with either implementation of the proper BMPs or to provide an engineered discharge drainage system that could handle any increased flows prior to discharge into the outfall(s). Additionally, the project area, after demolition/construction, would need to be permanently stabilized with non-invasive native grasses.

Domestic Sewage - Portable toilets would be provided for the construction workforce as needed. These toilets would be pumped out regularly, and the sewage would be transported by tanker truck to a publicly owned wastewater treatment works that accepts pump out. However, the facility would be expected to have restroom facilities added to accommodate the staff of the finished facility. Depending on if public septic services are available, this waste would either be handled by a septic tank and drainage field lines or would be discharged and handled by a local publicly owned treatment works. The type and size of the

system implemented would determine the type of permits required for engineering, construction and maintenance of this septic system.

Equipment washing and dust control discharges would be handled in accordance with BMPs described in the Storm Water Pollution Prevention Plan for water-only cleaning.

Operational Impacts:
Operational impacts to surface waters should be minor during operation. This facility should ensure that all chemicals handled are properly contained, covered and disposed of, so that they are not at risk of entering surface waters. Under the action alternative, any future development would need to be properly treated with either implementation of the proper BMPs or to provide an engineered discharge drainage system that could handle any increased flows prior to discharge into the outfall(s). Additionally, the project area, after construction, would need to be permanently stabilized with non-invasive native grasses.

Alternative B – Consolidation via Demolition
Under this action, impacts associated with this alternative would be similar to those outlined under Alternative A. Building demolition could include the removal of asbestos, PCBs, and/or the closure of septic facilities. If these are required as part of this proposed project than they would be performed per regulatory requirements. Additionally, the project area, after demolition/construction, would need to be permanently stabilized with non-invasive native grasses. Proper implementation of controls is expected to result in only minor, temporary impacts.

3.11 Transportation

This section addresses effects on transportation located within or immediately adjacent to the project area. Available data collected from the Tennessee Department of Transportation (TDOT) and other entities were used to assess the existing roadway networks around the subject location and impacts that may occur due to development of the site. Utilizing the TDOT website, existing traffic, projected traffic, heavy vehicle volumes, distances and specific routes to and from the National Truck Network were assessed (AADT Maps, 2020). Three annual average daily traffic (AADT) stations were located nearby the O1H entrance and exits and are located along the only roads to the O1H. Figure 3-7 shows the AADT stations.

The station (Station No. 000033) located on Parksville NW in Polk County is the closest station to the O1H site. The station (Station No. 000030) is located northwest of the site along U.S. Hwy 64 and is one of the three main entrances and exits to the site. The station (Station No. 000034) is located northeast of the site along U.S. Hwy 64 and is one of the three main entrances and exits to the site. The AADT counts have been maintained since 1985. The AADT is listed in Table 3-8.

Figure 3-7 Map of the AADT Stations in Relation to O1H

Table 3-9 AADT Counts from Three Traffic Stations

Year	000033	000030	000034
1985	1,150	4,545	3,175
1986	1,041	4,803	3,169
1987	1,131	4,374	3,701
1988	997	4,400	4,028
1989	1,157	4,744	3,698
1990	1,457	4,078	4,419
1991	1,058	6,095	3,485
1992	1,248	5,441	4,413
1993	1,007	5,705	3,800
1994	1,760	6,762	4,740
1995	1,112	5,800	3,940
1996	1,267	5,272	4,263
1997	1,294	7,031	4,781
1998	1,223	6,391	4,849
1999	1,361	6,409	4,917
2000	1,357	5,868	4,861
2001	1,306	6,677	4,671
2002	1,270	6,718	4,461
2003	1,714	9,757	5,211
2004	1,455	7,718	5,153
2005	1,291	7,606	4,710
2006	1,463	6,024	5,005
2007	1,478	6,951	5,209
2008	1,495	6,749	5,072
2009	1,484	7,212	4,864
2010	1,298	7,866	4,457

2011	1,140	6,562	4,069
2012	1,172	6,696	4,110
2013	1,212	5,806	3,517
2014	1,157	6,695	3,395
2015	1,229	5,972	3,786
2016	1,241	6,390	4,139
2017	1,249	6,477	4,274
2018	1,090	7,206	4,529

The percentage increase or decrease was calculated annually and averaged over the course of the data history. The annual increase was 1%, 3%, and 2% for the three stations, respectively. Utilizing these average percent increases, Table 3-9 shows predicted AADT over the next 10 years.

Table 3-10 Predicted AADT over the Next 10-Years.

Year	000033	000030	000034
2019	1,100	7,422	4,619
2020	1,111	7,644	4,711
2021	1,123	7,874	4,806
2022	1,134	8,110	4,902
2023	1,145	8,353	5,000
2024	1,157	8,604	5,100
2025	1,168	8,862	5,202
2026	1,180	9,128	5,306
2027	1,192	9,402	5,412
2028	1,204	9,684	5,520

In the year 2028, the predicted traffic counts are 1,204, 9,684, and 5,520 for the three stations, respectively.

Environmental Consequences

No Action Alternative
Under the no-action alternative, impacts on AADT are not anticipated.

Proposed Action Alternative A - Consolidation via License or Easement Grant
Under this action, TVA proposes new construction and construction related traffic is anticipated. The construction of the new building would include construction and preparation including a laydown area, connection to the main septic system, connection to water supply, and extending existing pavement for building access. The construction phase will last at least two months and will only take place during working hours, leading to a minimal increase in traffic for those months. This traffic will include cars, trucks, equipment taxiing, and larger construction vehicles. The primary phase of construction will include any necessary clearing and grading. The secondary phase of construction will include the construction. Construction activities would temporarily increase traffic through the area and along the three main roads with one primary entrance and exit to the site. Construction traffic impacts would be temporary and minor, and not result in the need for special traffic routes or road enhancements to accommodate construction equipment.

Proposed Action Alternative B - Consolidation via Demolition
Under this action, the disposal of the three existing O1H administrative houses via demolition and construction of the new building would temporarily increase traffic through the area and along the three main entrances and exits to the site. In order to taxi the large excavator to the site, it would need to be loaded onto a semi-truck and driven to the site for the demolition of the three administrative houses. These excavators can weigh up to 45 metric tons. While the taxiing of the excavator would not necessarily lead to an increase in traffic, the roads would have to be able to withstand the weight of the demolition / construction equipment. In addition to the excavator, a front-end loader will be used to move dirt, which weighs approximately 1,500 kg. If any of these vehicles exceed 8'6" width, 13'6" height, 50' in length, a TDOT permit will be required. Additionally, if the weight exceeds 20,000lbs for a single axle, 34,000lbs for a tandem group, or 80,000 lbs or greater total gross vehicle weight, a TDOT permit will be required (TDOT Oversize and Overweight Permits, 2018). These permits and construction equipment would be required under Alternative A as well. These permits will account for weight constraints of the roads surrounding O1H. Reportedly, the excavator and front-end loader are the only pieces of equipment that will be used during the construction phase and the demolition phase will be completed through hands-on demolition. The decontamination, demolition, and construction phase will last approximately three months and will only take place during working hours. There would be a minimal increase in traffic during the day for those three months.

3.12 Air Quality

Affected Environment

The Clean Air Act (CAA) regulates air emissions from stationary and mobile sources. The CAA has identified two types of national ambient air quality standards, Primary Standards and Secondary Standards. The Primary Standards provide public health protection including sensitive populations whereas the Secondary standards provide public welfare protection including crops, animals, and buildings. The Environmental Protection Agency (EPA) has established the National Ambient Air Quality Standards (NAAQS) for six principal pollutants, known as criteria pollutants, in order to protect public health and public welfare by regulating emissions of hazardous air pollutants (EPA, n.d). The criteria air pollutants are the following:

- Carbon monoxide (CO)
- Lead (Pb)
- Nitrogen dioxide (NO_2)
- Ozone
- Particle pollution with sizes less than or equal to 1.2 micrometers
- Sulfur dioxide (SO_2)

The EPA is required to designate areas in the U.S as "attainment", "nonattainment" or "unclassifiable" in order to describe the air quality in a given area for any of the criteria pollutants. Attainment areas are geographic areas that meet or exceed the primary standard. Nonattainment areas are geographic areas that do not meet primary standards. Unclassifiable areas are areas with insufficient data (EPA, n.d).

Polk County is in attainment with NAAQS and ambient air quality standards (EPA, n.d). The proposed construction activities would be subject to both federal and state (Tennessee)

Division of Air Pollution Control) regulations. These regulations impose permitting requirements and specific standards for expected air emissions.

Environmental Consequences

No Action Alternative

Under the no-action alternative, TVA would not perform any consolidations at O1H and current operations would continue. There would be no changes to the existing air quality conditions and no new impacts on air quality.

Proposed Action Alternative A - Consolidation via License or Easement Grant

Under Action Alternative A, TVA proposes to dispose of the three existing O1H administrative houses via license, or easement grant of the buildings (individually or together) and/or the land. TVA would proceed with the consolidation efforts at O1H. These proposed actions would include the following: Site preparation and construction for the new building will include a laydown area.

Emissions in air quality associated with the construction of the new building would result in a minor temporary emission of fugitive dust during the three-month construction timeframe. Combustion of gasoline and diesel fuels from internal combustion engines from transportation vehicles and construction equipment would generate local emissions of particulate matter, nitrogen oxides, carbon monoxides, and sulfur dioxide during the construction period. Although the construction equipment and transportation vehicles would increase criteria pollutants, these impacts to air pollution would be temporary and relatively minor.

The TDEC Bureau of Environment Division of Air Pollution Control requires that any materials that are transported or stored; or any building, its appurtenances, or roads to be used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. TVA will follow the fugitive dust emission standards specified on their construction permit.

Proposed Action Alternative B - Consolidation via Demolition

Under this action, the disposal of the three existing O1H administrative houses would occur via demolition and TVA would proceed with the consolidation efforts at O1H. Impacts regarding the construction of the building would be consistent with Alternative A.

The administration buildings were built during a time when lead paint was widely used and siding on the building presently contains asbestos. Prior to demolition, the decontamination phase will utilize HEPA filters and air quality monitors to ensure the three administrative houses are safe. TVA has previously identified and abated asbestos and LBP from portions of the O1H Plant building. Prior to the proposed demolition of the buildings, a comprehensive National Emission Standards of Hazardous Air Pollutants (NESHAP) asbestos survey would be performed to ensure demolition activities do not cause a release of asbestos fibers into the air, as regulated by 40 CFR Part 61 Subpart M – National Emission Standard for Asbestos. All asbestos siding will be fully contained, handled and properly disposed of following Federal, State, and TVA Asbestos Management Plan. The buildings would also be surveyed for the safe removal and disposals of any hazardous materials prior to demolition. OSHA precautions will be followed during construction with regard to air quality.

3.13 Climate Change

Affected Environment

This section addresses the regional climate that the project is located within and how project activities could affect climatic patterns. Climate is the long-term regional or global average of temperature, humidity, and rainfall patterns over years. Climate change is defined as a long-term change in the average regional or global climates (Nasa.gov, 2020). The 2014 National Climate Assessment concluded that global climate is projected to continue to change over this century and beyond. The observable effects of global climate change such as accelerated sea level rise, intense heat waves, and shift in seasonal ranges, has been directly linked to the cumulative global emissions of greenhouse gasses (Nasa.gov, 2020).

Greenhouse gases trap the heat within the atmosphere and water vapor acts as a feedback mechanism to the greenhouse effect, which leads to the warming of the atmosphere (Nasa.gov, 2020). The causes of climate change have been attributed to greenhouse gases such as carbon dioxide, methane, nitrous oxide, chlorofluorocarbons, and water vapor. Although these gases are released into the atmosphere through natural processes, human-mediated activities have increased their concentrations (Nasa.gov, 2020). The 2014 National Climate Assessment concluded a 3°F to 5°F rise can be projected under the lower emissions scenario and a 5°F to 10°F rise for a higher emissions scenario.

Forested areas absorb and store carbon dioxide from the atmosphere and can reduce carbon dioxide in the atmosphere. The project is primarily occupied by a manicured lawn, ornamental trees, and existing impervious surface. The development of the new administration building would occur on existing impervious surface and not result in tree or forest removal.

TVA has ensured that climate change adaptation is integrated in agency-wide and regional planning efforts with other federal, state, and local agencies. In these efforts, TVA has established the Climate Change Adaption Action plan, which is integrated in major planning processes. This Adaption Action Plan allows TVA to identify and assess potential consequences and ability to mitigate climate change and develop adaptation planning action. In 2013, TVA initiated the Climate Change Sentinel Monitoring (CCSM) program, which assesses potential biological, ecological, and hydrological responses of aquatic ecosystems related to climate change. Additionally, TVA partakes in several partnerships aimed at improving energy infrastructure to climate change impacts.

Environmental Consequences

No Action Alternative
Under the no-action alternative, TVA would not perform any consolidations at O1H and current operations would continue. There would be no new emissions of greenhouse gases and therefore would not impact climate change.

Proposed Action Alternative A - Consolidation via License or Easement Grant
Under Action Alternative A, TVA proposes to dispose of the three existing O1H administrative houses via, license, or easement grant of the buildings (individually or together) and/or the land. TVA would proceed with the consolidation efforts at O1H. These proposed actions

would include the following: Site preparation and construction for the new building, including a laydown area.

Under this action, carbon dioxide emissions would occur from exhaust emission of fossil-fueled vehicles and construction equipment during construction activities. Due to the three month construction period, the use of four types of construction equipment, and use of vehicles, only a minor temporary increase in carbon dioxide would be anticipated as a result of the construction of the new administration building. Additionally, under TVA's Climate Change Adaptation Action plan, TVA would continue to monitor potential consequences related to climate change in efforts to mitigate the effects. Additionally, TVA is required to follow Federal Sustainability Guidelines in the construction of a new building. The 2016 Guiding Principles Checklist for New Construction and Modernization checklist includes the following checklist categories:

- Employ Integrated Assessment, Operation, and Management Principles
- Optimize Energy Performance
- Protect and Conserve Water
- Enhance Indoor Environmental Quality
- Reduce the Environmental Impact of Materials
- Assess and Consider Climate Change Risks

TVA will design the new administration building to meet sustainability compliance where applicable and feasible.

Proposed Action Alternative B - Consolidation via Demolition
Under this action, the disposal of the three existing O1H administrative houses would occur via demolition and TVA would proceed with the consolidation efforts at O1H. Impacts associated with this alternative would be similar to those outlined under Alternative A.

However, the removal of three buildings would generate additional greenhouse gasses due to the increase in construction equipment needed for building removal. The new administration building would reduce carbon footprint in the long-run due to the removal of energy use and outdated or inefficient appliances of the three administration buildings. The construction of the new building would include upgraded building equipment and infrastructure to improve energy efficiency, which would ultimately decrease energy production and reduction of local emission of greenhouse gases.

3.14 Noise

Affected Environment

Noise pollution is sound that becomes unwanted with normal activities, disrupts normal activities, or diminishes one's quality of life (EPA, n.d). Noise pollution can adversely affect a person's health and lead to several stress related issues.

The Noise Control Act of 1972 established a federal policy to promote an environment free from noise that jeopardizes health and welfare. The EPA guidelines, published in 1974, identified noise levels thresholds, measured in decibels (dBA), that permit normal activities. The EPA guidelines found that levels of ≤55 decibels outdoors and ≤45 decibels indoors were considered noise levels which permit daily activities such as conversation, sleeping, working, and recreation. In 1981, the EPA determined that noise issues were best handled at the state

and local level. However, the EPA still has the authority to investigate noise and its effect and effectiveness of existing regulations (EPA, n.d).

The amount of noise can be affected by distance and obstruction between the source and receiver. For example, as distance increases, the sound waves are dispersed. It is estimated that sound levels for a point source will decrease by 3 dBA for each doubling distance (AZ DOT, 2017).

Expected construction equipment used in the project construction will include four types of construction equipment including an excavator, front-end loader, and transportation trucks to carry debris. Construction is expected to occur during the day, likely five days a week, for three months. Therefore, it can be assumed that unwanted noise-levels, of approximately 80 dBA to 120 dBA would be localized to the immediate construction area.

Currently, noise emitted from O1H include regular operations at the dam such as water release from the reservoir and daily vehicle traffic. The receptors that would be impacted by increase in noise would be O1H TVA Staff and nearby recreationists. No occupied residences occur within or adjacent to O1H boundaries.

Additionally, the noise levels would be further attenuated with ongoing water release from O1H. Table 3.10 lists common noises.

Table 3-11 Common Indoor and Outdoor Noise Levels

Common Indoor and Outdoor Noise	Sound Pressure Levels (dBA)
Airplane Flyover at 1,000 Feet	~120
Construction Saw at 3 Feet	~110
Lawnmower at 100 Feet	~90
Vacuum at 10 Feet	~80
Traffic	~60
Serene Wilderness Areas	≤30

Environmental Consequences

No Action Alternative

Under the no-action alternative, there would be no changes to the existing noise levels.

Proposed Action Alternative A - Consolidation via License or Easement Grant

Under Action Alternative A, noise levels would temporarily increase during construction of the new administration building. Based on the lack of sensitive receptors in the vicinity of the construction activities as well as the short timeframe of construction, noise impacts are not considered to be significant.

Proposed Action Alternative B - Consolidation via Demolition

Under Action Alternative B, noise levels would temporarily increase during construction of the new administration building as well as the demolition of the three houses. Based on the lack of sensitive receptors in the vicinity of the construction activities as well as the short timeframe of construction, noise impacts are not considered to be significant.

3.15 Geology and Groundwater

Affected Environment

The geologic unit of Polk County is characterized as sedimentary and metamorphic rocks and consists of sandstone, conglomerate, siltstone, quartize, phyllite, slate, and schist. The geology of a landscape and groundwater are intertwined, as precipitation moves through the soils, pore spaces, and fractures eventually reaching the groundwater system. Groundwater is an important source of water and makes up approximately 1% of the water on earth. Groundwater has been found to sustain streamflow between precipitation events as well act as a primary agent of chemical weathering.

The amount of groundwater residing within pores spaces of rock, sediment, and soil depends on the porosity, which depends on the sediment rock grain size, grain shapes, sorting of grains, and degree of cementation. For example, coarse-grained sediments have high porosity whereas fine-grained sediments have lower porosity.

Due to the process of infiltration of water through rocks and sediments, groundwater quality can be affected by high concentrations of contaminants due to urban activities, industrial discharges, agriculture runoff, and disposal of waste.

The project site is primarily composed of loamy alluvium derived from interbedded sedimentary rock and clayey alluvium derived from limestone, sandstone, and shale. The soil type property is considered well-drained soils (NRCS, 2020). Figure 3-8 illustrates the geologic bedrock within the project area and Table 3-11 illustrates the soil units within the project area.

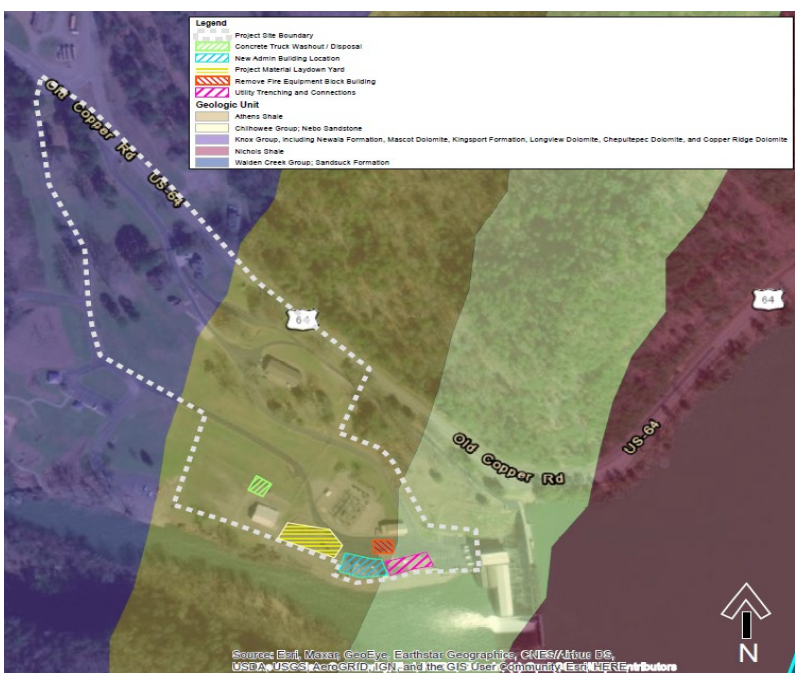

Figure 3-8 Geologic Map of O1H Project Area.

Table 3-12 Soils Mapped Within the O1H Dam Project Area.

Soil Map Unit (Symbol) Name	Study Area (acres)
Waynesboro loam, 6 to 15 percent slopes, eroded (WbC2)	12.2
Sequatchie silt loam, 2 to 5 percent slopes, rarely flooded	2.8

Environmental Consequences

No Action Alternative
Under the no-action alternative, TVA would not perform any consolidations at O1H and current operations would continue. There would be no impacts to geological resources or groundwater.

Alternative A – Consolidation via License or Easement Grant
Under Action Alternative A, construction of the new administration building would occur on a previously disturbed area occupied by an existing paved parking lot. The development of the new administration building would not change the impervious area significantly. Ground disturbing activities, utility trenching, equipment washout, and use of a septic system would occur as part of the ongoing construction activities. The septic system leech field is located in a grass and graveled area near the Artifact Building, away from the Ocoee River.

The impacts to groundwater are similar to the impacts discussed in Section 3.9 Surface Water and Soil Erosion. Any temporary impacts to surface water could have the potential to percolate through the subsurface and impact groundwater. Therefore, proper implementation of controls, as described in the *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority* (TVA 2017) and in the *Tennessee Erosion and Sediment Control Handbook* (TDEC 2012), would result in minor temporary impacts to groundwater.

Alternative B – Consolidation via Demolition
Under this action, the disposal of the three existing O1H administrative houses would occur via demolition and TVA would proceed with the consolidation efforts at O1H. However, the removal of the three administration buildings could reduce impervious surface area and allow for increased potential for infiltration of surface to groundwater. Proper implementation of controls, as described in the *A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority* (TVA 2017) and in the Tennessee Erosion and Sediment Control Handbook (TDEC 2012), would result in minor temporary impacts to groundwater.

3.16 Solid and Hazardous Waste and Hazardous Materials

Affected Environment
Solid waste consists of a broad range of materials that include refuse, sanitary wastes, contaminated material, scrap metals, nonhazardous wastewater treatment sludge,

nonhazardous air pollution control wastes, various nonhazardous industrial waste, and other materials (solid, liquid, or contained gaseous substances). Solid wastes are generally managed through recycling and local landfills. In Tennessee, requirements for management of solid wastes are focused on solid waste processing and disposal under Rule 0400-11-01.

Hazardous waste is defined as waste, or combination of wastes, which due to its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible illness or incapacitating reversible illness or pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed or, managed (TN Gov, n.d). The regulation of hazardous materials and management fall under a variety of federal laws including the Occupational Safety and Health Administration standards, Emergency Planning and Community Right to Know Act (EPCRA), Resource Conservation and Recovery Act (RCRA), Comprehensive Environmental Response, Compensation and Liability Act of 1980, and the Toxic Substances Control Act.

Environmental Consequences

No Action Alternative
Under the no-action alternative, TVA would not perform any consolidations at O1H and current operations would continue and result in no changes to the solid waste and hazardous material.

Alternative – Consolidation via License or Easement Grant
Under Action Alternative A, TVA proposes to dispose of the three existing O1H administrative houses via license, or easement grant of the buildings (individually or together). TVA would proceed with the consolidation efforts at O1H. These proposed actions would include the following: Site preparation and construction for the new building, including a laydown area.

The proposed administration building would be constructed in the former location of the fuel ASTs. Stormwater BMPs were utilized during the prior AST removal, including the prevention of soil, oil, sediment, and debris from entering drains and surface water and therefore would not pose a human health risk to construction works. Currently, an environmental hazardous waste storage structure is located adjacent to the former location of the AST's. Prior to the construction of the new administration building, the environmental hazardous waste storage facility would be relocated near the Artifact Building. The relocation of the environmental hazardous waste would be managed in accordance with established procedures and applicable regulations.

Construction waste and debris would be placed in roll-off dumpsters and disposed of at a permitted off-site construction and demolition landfill. TVA would manage all construction waste generated in accordance with applicable state regulations and procedures outlined in TVA's current Environmental Procedures and applicable BMPs. Therefore, minor impacts from generation of solid waste and no impact from hazardous waste generation are anticipated.

Alternative – Consolidation via Demolition
Under this action, impacts associated with this alternative would be similar to those outlined under Alternative A. Building demolition could include the removal of asbestos, lead paint, PCBs, and/or the closure of septic facilities. If these are required as part of this proposed project then they would be performed per regulatory requirements.

3.17 Visual Resources

Affected Environment

This section addresses the existing scenery and impacts from the proposed alternative action of the existing visual attributes of the scenery. The classification criteria used in this analysis are adapted from The Scenery Management System, as described in the Landscape Aesthetics, A Handbook for Scenery Management, Agriculture Handbook Number 701. This methodology provides a systematic approach for determining the relative value and importance of scenery in a national forest. This system allows for the inventory and assessment of the scenery in a national forest in efforts to monitor and ensure high-quality scenery for future generations. The Scenery Management System method evaluates the existing character landscape including scenic attractiveness, scenic integrity, constituent expectations and desires, and landscape visibility (U.S Forest Service, 1995). Landscape character is an overall visual and cultural impression of landscape attributes and scenic integrity is based on the degree of visual unity and wholeness of the natural landscape character. The subjective perceptions of a landscape's scenic attractiveness and sense of place is dependent on where and how it is viewed.

Additionally, the National Register Bulletin: Guidelines for Evaluating and Documenting Rural Historic Landscapes acknowledges the association of landscapes and the built environment as belonging to a contextual involvement. Natural features, for instance, influenced the location of settled communities to construct associated infrastructure projects. Therefore, when considering NRHP eligibility of a resource, it is important to examine the surrounding natural features and how they relate to the built environment.

Finally, the National Register Bulletin: Defining Boundaries for National Register Properties identifies setting and landscape features as elements that can contribute to the overall integrity of a district. Natural features, for instance can be included if they relate to the overall purpose and significance of a district. This bulletin also acknowledges the significance of setting, feeling, and association of the built environment and notes potential disruptions to these aspects including new construction which could compromise these aspects. The presence of a newly constructed building within a collection of historic-age buildings could disrupt the integrity of feeling, setting, and association of the historic-age buildings. Alternatively, the removal of contributing resources could also disrupt the integrity of feeling, setting, and association.

The affected environment includes the project area and encompasses all of the identified surrounding physical and natural features of the landscape.

The Ocoee Dam No.1, also known as the Parksville Dam, is listed in the NRHP. The NRHP listed boundaries of the Ocoee Dam #1 include the footprint of the dam and the powerhouse building, and the boundaries have been recommended to incorporate the three administrative houses and house located across Highway 64. The Ocoee Dam #1 was listed in the NRHP in 1990 and has been a part of the character landscape since 1911. The project area is surrounded by the Ocoee River and wooded land located on rolling hills and ridges which provides a sense of wilderness and can be considered part of the integrity of the setting.

The wooded areas immediately adjacent to the north, east, south, and southwest of the Ocoee Dam #1 are part of the Cherokee and South Cherokee National Forest Additionally, the Sugarloaf Mountain Park, which is a sub-portion of the Cherokee National Forest, is

located 0.06 miles south of the Ocoee Dam #1. Some residential development and pasture areas are located further west of the O1H Dam. The National Forests provide recreational opportunities which fulfill constituent expectations and desires as well as provide high-quality scenery.

The Ocoee Dam No.1 and the Cherokee National Forest System, South Cherokee National Forest System, and Sugarloaf Mountain Park system co-exist and are a part of the character landscape.

Cumulatively, the National Forests, the Ocoee River, and the O1H Dam create a landscape that provides a visual association of the natural and built environment. The historic significance of O1H is directly related to the natural environment and any disruptions to its own integrity or the integrity of the surrounding natural environment could have an adverse effect on this resource.

Environmental Consequences

No Action Alternative
The no-action alternative would result in no changes to the existing visual environment

Proposed Action Alternative A - Consolidation via License or Easement Grant
During the construction phase of the new administration building, the construction equipment and vehicles, debris, and noise associated with construction would temporarily impact the scenic attractiveness and character landscape of the immediate surrounding National Forests. This increase in visual discord would be temporary and only last until construction is completed. This disruption would only be discernable to O1H TVA staff, local residents, motorists, and nearby recreationists.

The construction of the new administration building would occur on a ~~an area~~ previously disturbed area occupied by an existing paved parking lot; however, the development of the new administration building in the viewshed could alter the integrity of ~~felling~~ feeling, setting, and association of the NRHP listed Ocoee Dam No.1 and may have an adverse effect on this resource.

Proposed Action Alternative B - Consolidation via Demolition
Under this action, impacts associated with this alternative would be similar to those outlined under Alternative A. However, the removal of the three administration buildings could alter the character, the integrity of feeling, setting, and association of O1H and may have an adverse effect on this resource.

3.18 Cumulative Impacts

Cumulative impacts occur when the effects of an action are added to or interact with other effects in a particular place and within a particular time. The combined incremental effects of human activity can pose a serious threat to the environment (EPA, 1999). The effects may be insignificant, but the impacts accumulate over time and can result in the degradation of environmental resources. The CEQ regulations for 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 reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such as

other actions" (40 CFR 1508.7). The CEQ developed the "Considering Cumulative Effects under the National Environmental Policy Act", handbook to provide a method in addressing cumulative effects.

The geographic scope of analysis is assumed to include a 5-mile radius around the O1H Dam. This is the area in which indirect and cumulative effects are expected to occur. This area is largely defined by undeveloped forested areas, the Ocoee River, Parksville Reservoir, and rural residential development in Parksville and Ocoee, Tennessee.

Past, present, and reasonably foreseeable future actions were identified within the 5-mile radius and include the following:

- Future commercial and residential development would be anticipated to occur in Parksville and Ocoee, TN and in unincorporated areas.

- The TN DOT current project, US 64 (State Route 40) Bridge Replacement project, began in summer of 2020 and is expected to be completed by May 2022. The bridge replacement will occur on US Highway 64 over the Ocoee River and the project would also include intersection improvements at Hildabrand Road to the west and Welcome Valley Road to the east (TN.gov). The proposed new bridge would improve the safety and operations of the facility, update the bridge to current standards, and allow for future expansion.

- The TN DOT future project, US 64/Corridor K project, proposes to improve the corridor from west of the Ocoee River to SR 68, near Ducktown. The Draft Environmental Impact Statement (DEIS) is currently being prepared.

- Past legacy impacts from copper mining of the Copper Basin has resulted in runoff contamination in the Ocoee River

- Unknown impacts from Parksville Steam Power Plant which was in operation from 1916 until 1945

Polk County, Tennessee has had a 0.78% population growth rate from 2019 to 2020 (census.gov, n.d). Effects from increase population growth and development could result in increase in vehicles, TN DOT projects to accommodate high traffic areas, increase in residences and commercial development, and increase in use of nearby recreational areas. Future increase in commercial and residential development in Parksville and Ocoee would likely occur at a slow rate. Areas immediately near O1H Dam are protected by state managed land and National Forest land; therefore, the increase in growth and development would have minor cumulative impacts on resources.

Current and future TN DOT projects would improve access and prevent the degradation of roads. The impacts from TN DOT projects located near O1H could affect air quality, noise, and quietness and scenic feeling from managed and natural areas. However, impacts from TN DOT projects would be minor and short-term.

Past legacy impacts from copper mining and related to the Parksville Steam Power Plant have likely resulted in sedimentation and contamination of the Ocoee River. During ground-disturbing activities related to the proposed action, TVA would follow state, federal, and TVA regulations to prevent further impacts to surface water and soil.

The proposed Action Alternatives would involve ~~in~~ the construction of a new administration building and ~~the~~ either dispose of the three existing 01H administrative houses via license/grant easement to a 3rd party or via demolition. Because the proposed action is so limited, the boundary of the proposed Action Alternatives encapsulates the defined boundary of the O1H facility.

Much of the land within the O1H reservation has already been altered by previous development, including the construction of the hydroelectric facility itself. Despite previous surface-level disturbance for the development and construction of O1H, it is possible that there are still deep buried cultural deposits (archaeological resources) beneath the extent of existing disturbance. Therefore, it is possible that future development and trenching associated with utilities could impact archaeological resources. Furthermore, if additional new buildings are added to the O1H property, these additions would diminish the integrity of setting, feeling, and association of the property, and key aspects of integrity for O1H.
As shown in Table 3-12, the cumulative impacts association with the Action Alternatives and in combination with the above identified actions would be insignificant

Table 3-13 Table of Cumulative Impacts.

Environmental Resources		Alternative A – Consolidation via License or Grant Easement	Alternative B – Consolidation via Demolition
Aquatics	Legacy impacts from ongoing Ocoee 1 Dam operation and maintenance	Short-term cumulative impacts from run-off from ground disturbing activities	Short-term cumulative impacts from run-off from ground disturbing activities
Botany	No impact	No cumulative impact to botany; No impact to federally listed species	No cumulative impact to botany; No impact to federally listed species
Managed and Natural Areas	No impact	Minor, short-term cumulative impacts from construction traffic, noise, and run-off	Minor, short-term cumulative impacts from construction traffic, noise, and run-off
Terrestrial Zoology	No impact to terrestrial animals or migratory birds of conservation concern; No impact to federally listed species	No cumulative impact to terrestrial animals and no impact to migratory birds of conservation concern; No impact to federally listed species	No cumulative impact to terrestrial animals and no impact to migratory birds of conservation concern; No impact to federally listed species

Wetlands	No impact	No cumulative impact	No cumulative impact
Cultural and Historic Structures	Potential adverse effect impact to the three O1H structures due to structural deterioration; no impact to archaeological resources	Long-term cumulative impact if future buildings are added of O1H	Long-term cumulative impact if future buildings are added that could affect key aspects of O1H

Environmental Resources		**Alternative A – Consolidation via License or Grant Easement**	**Alternative B – Consolidation via Demolition**
Floodplains	No impact	No impact	No impact
Parks and Recreation	No impact	Minor short-term cumulative impacts from construction traffic, noise, and run-off	Minor short-term cumulative impacts from construction traffic, noise, and run-off
Surface Water and Soil Erosion	Legacy impacts from ongoing Ocoee 1 Dam operation and maintenance and buildings	Short-term cumulative impacts from construction and runoff	Short-term cumulative impacts from demolition, construction, and runoff
Transportation	No impact	Minor short-term cumulative impacts from increased traffic	Minor short-term cumulative impacts from increased traffic
Air Quality	No impact	Minor temporary cumulative impacts in local air emissions from construction activities	Minor temporary cumulative impacts in local air emissions from construction activities
Noise	No impact	Temporary negligible increase in noise from construction	Temporary negligible increase in noise from

			construction and demolition
Geology/Groundwater	No impact	No cumulative impact to geology or groundwater	No cumulative impact to geology or groundwater
Solid & Hazardous Waste and Hazardous Materials	No impact	Short-term cumulative impacts of solid waste from construction waste	Short-term cumulative impacts of solid waste from construction and demolition debris
Environmental Resources		**Alternative A – Consolidation via License or Grant Easement**	**Alternative B – Consolidation via Demolition**
Visual Resources	No impact	Minor cumulative impacts to surrounding visual resources, may adversely affect the landscape character of O1H	Minor cumulative impacts to surrounding visual resources, may adversely affect the landscape character of O1H

3.19 Unavoidable Adverse Environmental Impacts

All three alternatives evaluated as part of this EA have the potential to result in adverse effects to historic properties. Under the no action alternative, there are potential adverse effect impact to the three O1H structures due to structural deterioration of the buildings. Under both action alternatives, adverse impacts will occur to the O1H setting through the construction of the new building.

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

The implementation of the proposed action alternatives will result in improved productivity due to the modernization and consolidation of operations within the new building. Continued use of the existing buildings may prohibit productivity due to renovations and required building maintenance. Additionally, having operations fragmented across three structures outside of the boundaries of operations does not encourage productive and seamless operations among staff.

3.21 Irreversible and Irretrievable Commitments of Resources

This section describes the expected irreversible and irretrievable environmental resource commitments resulting from the implementation of the alternatives. The term irreversible commitments of resources describe environmental resources that are potentially changed by construction or operation and that could not be restored at some later time to the resource's state prior to construction or operation. For example, mining of ore is an irreversible commitment of a resource; once ore is removed and used, it cannot be restored.

The demolition of the three buildings under Proposed Action Alternative B poses an irreversible and irretrievable commitment of resources. This activity would be mitigated through a Memorandum of Agreement (MOA) between TVA and the SHPO, as well as any interested tribes who participate in consultation. Under the No Action Alternative, the same resources may also be impacted by structural deterioration over time.

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CHAPTER 4 – LIST OF PREPARERS

NEPA Project Management

J. Taylor Cates

Position:	NEPA Project Manager
Education:	M.S., Environmental Science; B.S., Biochemistry
Experience:	5 years NEPA Compliance and Project Management
Involvement:	Project Manager, NEPA Coordination, NEPA Compliance, Document Preparation

Caitlin Fitzpatrick

Position:	NEPA Project Manager
Education:	B.S., Environmental Science
Experience:	11 years in Environmental Compliance; Preparation of Environmental Review Documents
Involvement:	Project Coordination, Document Preparation

Dana Nelson

Position:	Environmental Program Manager
Education:	B.S., Environmental Science
Experience:	14 years in Environmental Compliance; 5 years Preparation of Environmental Review Documents
Involvement:	Project Coordination, Document Preparation

Emily Kosmalski

Position:	NEPA Group Manager
Education:	M.S., Geography, B.S., Environmental Geography
Experience:	15 years in environmental planning and NEPA compliance
Involvement	NEPA compliance, document preparation, and project management

Other Contributors

Jason Holloway

Position:	Environmental Group Manager
Education:	B.S., Environmental Biology
Experience:	22 years in environmental due diligence
Involvement:	Environmental Phase I and II, Indoor Air Quality, and Industrial Hygiene, Hazardous and solid waste

Tori J. Goehrig

Position:	Senior Ecologist
Education:	M.S., Biology, B.S., Biology
Experience:	5 years in Ecology and Environmental Planning
Involvement:	Ecology, NEPA compliance, document preparation, and project management

Iris Avila

Position:	Senior Ecologist
Education:	M.S., Environmental Science, B.S., Environmental Science
Experience:	5 years' experience in Ecology and Environmental Planning
Involvement:	Ecology, NEPA compliance, document preparation, and project management

Jennifer Peters

Position:	Senior NEPA Project Manager
Education:	B.S., Geography
Experience:	18 years' experience in NEPA compliance, Transportation, Housing and Urban Development (HUD)
Involvement:	NEPA compliance, document preparation, and project management

Jim Baxter

Position:	Ecology Group Manager
Education:	M.F.R., Forestry, B.S., Natural Resources
Experience:	18 years in Ecology
Involvement:	Ecology, Threatened and Endangered species

Jonathan Brown

Position:	Senior Historian
Education:	M.H.P., Historic Preservation, B.A., History
Experience:	3 years in historical surveys, NRHP assessments, and NEPA
Involvement	Architectural Historian, cultural and visual sections

Leah Moore

Position:	Senior Environmental Engineer
Education:	B.S., Environmental Engineering
Experience:	6 years in environmental due diligence
Involvement	Environmental Phase I and II, Noise, Air Quality

Adam Dattilo

Position:	Biologist, Botany
Education:	M.S., Forestry; B.S., Resource Conservation Management
Experience:	21 years ecological restoration and plant ecology, 15 botany
Involvement:	Vegetation, Threatened and Endangered Species (Plants)

Kerry Nichols

Position:	Archaeologist
Education:	Ph.D., M.A., Anthropology and B.A., Political Science
Experience:	20 years in Cultural Resources Management
Involvement:	Cultural Resources Compliance

Hallie Hearnes

Position:	Architectural Historian
Education:	M.A., Public History, B.S. Historic Preservation
Experience:	11 years in Cultural Resources Management
Involvement:	Cultural Resources Compliance

Robert A. Marker

Position:	Contract Recreation Representative
Education:	B.S., Outdoor Recreation Resources Management
Experience:	40 years in Recreation Planning and Management
Involvement:	Recreation

Todd Amacker

Position:	Biologist, Aquatic Endangered Species
Education:	M.S. Wildlife and Fisheries, B.S. Environmental Science
Experience:	8 years threatened and endangered aquatic fauna; 4 years Environmental Reviews
Involvement:	Aquatic Ecology; Threatened and Endangered Aquatic Animals

Kim Pilarski-Hall

Position:	Specialist, Wetlands and Natural Areas
Education:	M.S. and B.S., Geography, Minor in Ecology
Experience:	22 years in Wetlands Assessment and Delineation
Involvement:	Wetlands and Natural Areas

Liz Hamrick

Position:	Biologist, Zoology
Education:	M.S. Wildlife and Fisheries Science B.S., Biology, B.A. Anthropology
Experience:	20 years in Biological Data Collection
Involvement:	Wildlife; Threatened and Endangered Terrestrial Animals

Carrie C. Williamson, P.E., CFM

Position:	Civil Engineer, Flood Risk
Education:	M.S. and B.S., Civil Engineering
Experience:	7 years in Floodplains and Flood Risk; 11 years in Compliance Monitoring; 3 years in River Forecasting
Involvement:	Floodplains

Chevales Williams

Position:	Water Specialist
Education:	B.S., Environmental Engineering
Experience:	15 years of experience in water quality monitoring and compliance; 13 years in NEPA / environmental services
Involvement:	Surface Water and Soil Erosion

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CHAPTER 5 – ENVIRONMENTAL ASSESSMENT RECIPIENTS

6.1 Federal Agencies

U.S Fish and Wildlife Service
U.S Army Corps of Engineers
Tennessee Historical Commission

6.2 Federally Recognized Tribes

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
United Keetoowah Band of Cherokee Indians in Oklahoma

6.3 State Agencies

Tennessee Department of Environment and Conservation
Tennessee Department of Transportation

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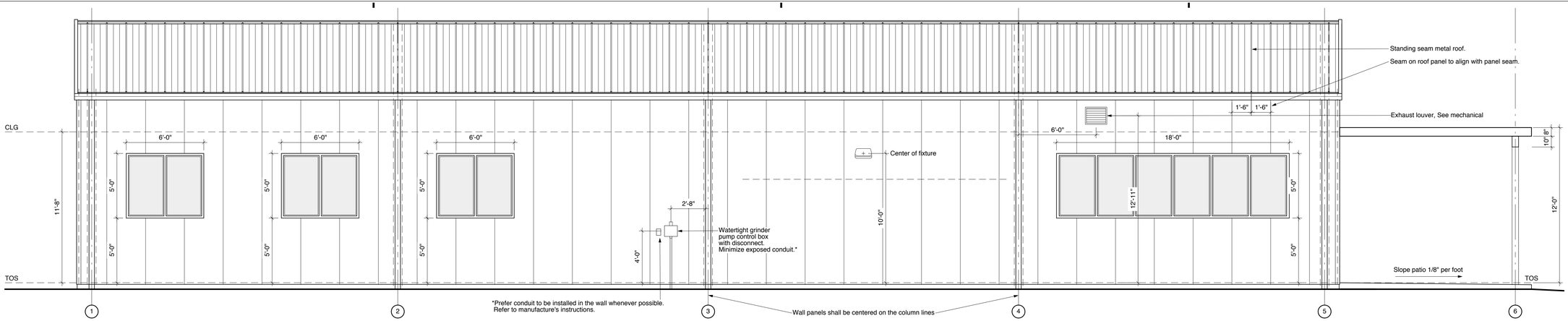
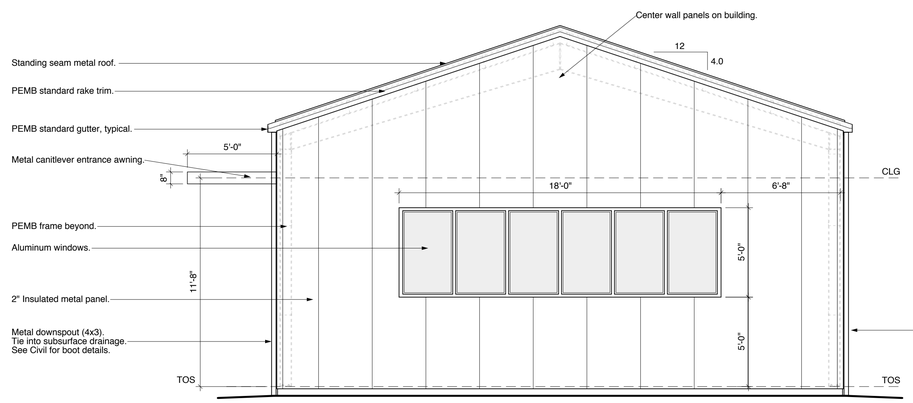
Appendix A

New Administration Building Design



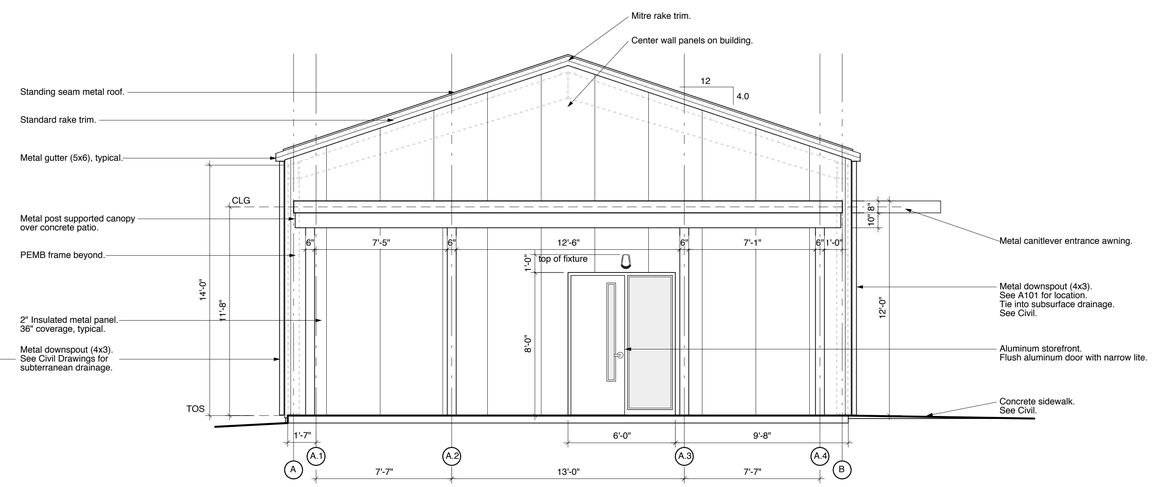
4 South Back Elevation

SCALE: 1/4" = 1'- 0"



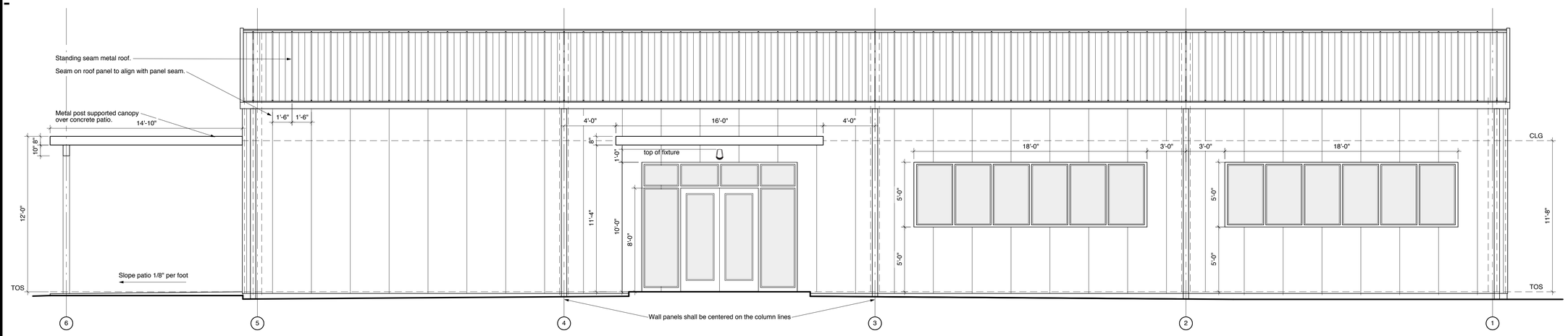
2 West Side Elevation

SCALE: 1/4" = 1'- 0"



3 East Side Elevation

SCALE: 1/4" = 1'- 0"



1 North Front Elevation

SCALE: 1/4" = 1'- 0"

Frameworks Architecture

709 BANK STREET DECATUR, ALABAMA 35601
256.355.5212 P
WWW.FRAMEWORKSARCHITECTURE.COM

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REVISIONS

NUMBER	REVIEWED BY	DATE
-	-	-
-	-	-
-	-	-
-	-	-
-	-	-

The Tennessee Valley Authority
Facilities Management

New Administration Building

US Highway 64 Ocoee, Tennessee

PROJECT NUMBER 19025

PROFESSIONAL SEAL

FOR CONSTRUCTION

DATE	FILE
10/28/19	XXX-AA-301

DRAWING TITLE

EXTERIOR ELEVATIONS

SHEET NO.

XXX-XXX-A301

00 OF 00 00 TOTAL 00

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Appendix B

TVA Bat Strategy Project Form

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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: Ocoee 1 Hydro Redevelopment EA **Date:** 3/26/2020

Contact(s): Dana Vaughn (PM)/Taylor Cates (NEPA) **CEC#:** **Project ID:** 35160

Project Location (City, County, State): Ocoee 1 Hydro, Polk County, TN

Project Description:

TVA proposes to consolidate people and functions from the three existing O1H administrative houses (White House AEM8474, Rock House AEM8475, and Administration House O1PO) into a new office building. This proposed action involves construction of a new office building at the O1H site. The proposed vacating of the three houses would result in options for disposal or demolition.

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: [ ] ○ **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 Hamrcik	Date	Mar 26, 2020

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): [ ] (○ **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):

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
		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.
		AR1 - Projects that involve structural modification or demolition of buildings, bridges, and potentially suitable box culverts, will require assessment to determine if structure has characteristics that make it a potentially suitable unconventional bat roost. If so a survey to determine if bats may be present will be conducted. Structural assessment will include: o Visual check that includes an exhaustive internal/external inspection of building to look for evidence of bats (e.g., bat droppings, roost entrance/exit holes); this can be done at any time of year, preferably when bats are active. o Where accessible and health and safety considerations allow, a survey of roof space for evidence of bats (e.g., droppings, scratch marks, staining, sightings), noting relevant characteristics of internal features that provide potential access points and roosting opportunities. Suitable characteristic may include: gaps between tiles and roof lining, access points via eaves, gaps between timbers or around mortise joints, gaps around top and gable end walls, gaps within roof walling or around tops of chimney breasts, and clean ridge beams. o Features with high-medium likelihood of harboring bats but cannot be checked visually include soffits, cavity walls, space between roof covering and roof lining. o Applies to box culverts that are at least 5 feet (1.5 meters) tall and with one or more of the following characteristics. Suitable culverts for bat day roosts have the following characteristics: • Location in relatively warm areas • Between 5-10 feet (1.5-3 meters) tall and 300 ft (100 m) or more long • Openings protected from high winds • Not susceptible to flooding • Inner areas relatively dark with roughened walls or ceilings • Crevices, imperfections, or swallow nests o Bridge survey protocols will be adapted from the Programmatic Biological Opinion for the Federal Highway Administration (Appendix D of USFWS 2016c, which includes a Bridge Structure Assessment Guidance and a Bridge Structure Assessment Form). o Bat surveys usually are NOT needed in the following circumstances: • Domestic garages /sheds with no enclosed roof space (with no ceiling) • Modern flat-roofed buildings • Metal framed and roofed buildings • Buildings where roof space is regularly used (e.g., attic space converted to living space, living space open to rafters) or where all roof space is lit from skylights or windows. Large/tall roof spaces may be dark enough at apex to provide roost space
		AR2 - Additional bat P/A surveys (e.g., emergence counts) conducted if warranted (i.e., when AR1 indicates that bats may be present).

	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.
	SSPC3 (**Power Plants only**) - Power Plant actions and activities will continue to implement standard environmental practices. These include: o Best Management Practices (BMPs) in accordance with regulations: • Ensure proper disposal of waste, ex: used rags, used oil, empty containers, general trash, dependent on plant policy • Maintain every site with well-equipped spill response kits, included in some heavy equipment • Conduct Quarterly Internal Environmental Field Assessments at each sight • Every project must have an approved work package that contains an environmental checklist that is approved by sight Environmental Health & Safety consultant. • When refueling, vehicle is positioned as close to pump as possible to prevent drips, and overfilling of tank. Hose and nozzle are held in a vertical position to prevent spillage o Construction Site Protection Methods • Sediment basin for runoff - used to trap sediments and temporarily detain runoff on larger construction sites • Storm drain protection device • Check dam to help slow down silt flow • Silt fencing to reduce sediment movement o Storm Water Pollution Prevention (SWPP) Pollution Control Strategies • Minimize storm water contact with disturbed soils at construction site • Protect disturbed soil areas from erosion • Minimize sediment in storm water before discharge • Prevent storm water contact with other pollutants • Construction sites also may be required to have a storm water permit, depending on size of land disturbance (>1ac) o Every site has a Spill Prevention and Control Countermeasures (SPCC) Plan and requires training. Several hundred pieces of equipment often managed at the same time on power generation properties. Goal is to • Minimize fuel and chemical use Ensure proper disposal of waste, ex: used rags, used oil, empty containers, general trash, dependent on plant policy • Maintain every site with well-equipped spill response kits, included in some heavy equipment • Conduct Quarterly Internal Environmental Field Assessments at each sight • Every project must have an approved work package that contains an environmental checklist that is approved by sight Environmental Health & Safety consultant. • When refueling, vehicle is positioned as close to pump as possible to prevent drips, and overfilling of tank. Hose and nozzle are held in a vertical position to prevent spillage o Construction Site Protection Methods • Sediment basin for runoff - used to trap sediments and temporarily detain runoff on larger construction sites • Storm drain protection device • Check dam to help slow down silt flow • Silt fencing to reduce sediment movement o Storm Water Pollution Prevention (SWPP) Pollution Control Strategies • Minimize storm water contact with disturbed soils at construction site • Protect disturbed soil areas from erosion • Minimize sediment in storm water before discharge • Prevent storm water contact with other pollutants • Construction sites also may be required to have a storm water permit, depending on size of land disturbance (>1ac) o Every site has a Spill Prevention and Control Countermeasures (SPCC) Plan and requires training. Several hundred pieces of equipment often managed at the same time on power generation properties. Goal is to minimize fuel and chemical use

[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).

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) Dana Vaughn Nelson 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.

Appendix C

Agency Consultation

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Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

January 28, 2021

Mr. Brett Barnes
Tribal Historic Preservation Officer
Eastern Shawnee Tribe of Oklahoma
127 West Oneida
Seneca, Missouri 64865

Ms. RaeLynn Butler
Manager
Historic & Cultural Preservation Department
The Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

Mr. Bryant Celestine
Tribal Historic Preservation Officer
Alabama-Coushatta Tribe of Texas
571 State Park Road 56
Livingston, Texas 77351

Mr. Galen Cloud
Tribal Historic Preservation Officer
Thlopthlocco Tribal Town
Post Office Box 188
Okemah, Oklahoma 74859

Mr. David Cook
Tribal Administrator
Kialegee Tribal Town
Post Office Box 332
Wetumka, Oklahoma 74883

Ms. Devon Frazier
Tribal Historic Preservation Officer
Absentee Shawnee Tribe of Indians of Oklahoma
2025 S. Gordon Cooper Drive
Shawnee, Oklahoma 74801

Dr. Linda Langley
Tribal Historic Preservation Officer
Coushatta Tribe of Louisiana
Post Office Box 10
Elton, Louisiana 70532

Ms. Brigita Leader
Interim Tribal Historic Preservation Officer
The Seminole Nation of Oklahoma
12555 NS 3540 Road
Seminole, Oklahoma 74868

Ms. Alina J. Shively
Tribal Historic Preservation Officer
Jena Band of Choctaw Indians
Post Office Box 14
Jena, Louisiana 71342

Ms. Tonya Tipton
Tribal Historic Preservation Officer
Shawnee Tribe
Post Office Box 189
Miami, Oklahoma 74355

Ms. Elizabeth Toombs
Tribal Historic Preservation Officer
Cherokee Nation
Post Office Box 948
Tahlequah, Oklahoma 74465

Ms. Whitney Warrior
Director of Historic Preservation
United Keetoowah Band of Cherokee Indians in Oklahoma
18263 W. Keetoowah Circle
Tahlequah, Oklahoma 74464

Mr. Stephen Yerka
Historic Preservation Specialist
Tribal Historic Preservation Office
Eastern Band of Cherokee Indians
Post Office Box 455
Cherokee, North Carolina 28719

Dear Sir or Madam:

TENNESSEE VALLEY AUTHORITY (TVA), OCOEE NUMBER 1 HYDRO CONSOLIDATION AND ADMINISTRATION BUILDING CONSTRUCTION, POLK COUNTY, TENNESSEE (35.097, -84.651) (TVA TRACKING NUMBER – CID 78796)

TVA proposes to consolidate people and functions at Ocoee Number 1 Hydroelectric Facility (O1H) in Polk County, Tennessee. The project would consist of consolidating three existing O1H administrative houses—the Ocoee Regional Office, the Main Office (Rock House), and the Assembly Building (White House)—into a new administrative building and then potentially dispose of the three vacated buildings (Figure1). This proposed new office building at O1H would be located out of the floodplain and would be approximately 18 feet in height, 98 feet in width, and 32 feet in depth (see attached plans). Consolidation to a single building inside the security perimeter and the elimination of numerous safety hazards in the existing houses would be benefits of consolidation. We are initiating consultation under Section 106 of the National Historic Preservation Act (NHPA) for this undertaking. Given that the scope of this project would involve consolidation of the O1H plant, TVA determined the area of potential effects (APE) to be the entirety of the O1H facility (the National Register of Historic Places (NRHP)-eligible boundary except for the one former operator's house across from the facility, which is no longer associated with the TVA plant). At this time, the exact location of the project footprint that would result in ground disturbance is unknown. Archaeological evaluation studies for this project are limited in that the project is still in the planning stage and no definite project footprint has been defined. Additional archaeological evaluation studies may be needed as final designs and plans are developed.

Currently TVA is considering three options for the consolidation project:

- *No Action*: Under this alternative, TVA would not perform any consolidations at O1H. Current utilization of the three houses outside the secure perimeter would continue.
- *Action Alternative A*: TVA would dispose of the three existing O1H administrative houses via license or easement grant of the buildings (individually or together) and/or the land. TVA would construct a new administrative building and use an associated laydown area.
- *Action Alternative B*: Demolition of the three administrative houses. TVA would construct a new administrative building and use an associated laydown area.

Action Alternatives A and B would include site preparation, construction of the new building, and associated laydown area. The new building would be connected to the existing main septic system. The capacity of the septic tank, water supply, and sprinkler system for the entire O1H site would also need to be addressed. Work associated with the septic system would only require a new drain field, and would not require replacement of the entire system. TVA would extend existing paving to provide access to the new building. TVA would secure the new building with badge readers, cameras and upgraded Information Technology (IT) connectivity. The gas bottle storage (a small structure designed to store gas cylinders in a cool, dry, well-ventilated, fire-resistant location that meets all applicable federal, state and local regulations) comprised of exterior walls with a flat covering would be relocated on site upon the existing paved area surrounding the power house.

TVA considered other alternatives including rebuilding the existing welding shop, renovating the powerhouse including the addition of an exterior elevator, and adaptive reuse of the houses by TVA, but each had serious issues that made them much more problematic than Alternatives A and B.

During the facility assessments, a honey bee colony was discovered in the walls of the Rock House. TVA will need to relocate the colony this winter in preparation of either Alternative A or B. Interior or exterior openings may be required to fully remove the hive; any openings in the walls or floor would be replaced in-kind.

Archaeological Resources
The no action alternative would not affect any potential archaeological resources, as no ground disturbance would be proposed. Both Action Alternative A and B could potentially result in effects on historic properties. Construction of a new administration building, installation of electrical and septic system connections for the building, and construction of the building itself all have potential for effects on previously-unrecorded archaeological resources. Despite previous disturbance from the development and construction of the O1H facility, TVA finds there is a potential for deeply buried cultural deposits in this area, based on examinations of historic and current USGS topographic quadrangles and on our understanding of how O1H was constructed. In addition, it is possible that there are areas within the O1H facility that may not have been disturbed during the construction of the facility. No previous archaeological investigations have been conducted at this location.

TVA archaeologists conducted a field review for this project on December 2, 2020 which included pedestrian walkover of accessible areas of the O1H reservation where construction-related activities could take place. This includes areas where historical research suggests the presence of unmarked cemeteries (Reynolds 2020). A separate remote-sensing survey was conducted for the possible cemetery locations (detailed below). The goal of the field review was to identify any unknown cultural resources that could be affected by construction to include the proposed administration building, and any lines or drainfields. Opportunistic shovel testing, deep auger testing, and pedestrian survey were conducted outside of the possible cemetery locations near the proposed construction, but where asphalt and crushed rock pavement did not cover the landform (Figure 2). No artifacts were collected during the course of this investigation. All field notes, photographs, and other materials will be digitally curated in the TVA Integrated Cultural Database.

For your review, please find the attached TVA field review report titled *Archaeological Reconnaissance Survey for Ocoee Number 1 Hydro Consolidation and Administration Building Construction, Polk County, Tennessee.* The report finds that there is ample fill soil and construction evidence that the entire middle terrace landform within the APE has been extensively modified and that there is little potential for intact deep deposits. If there are intact non-cemetery cultural deposits that could be affected by the proposed construction, they would most likely be historic railroad-related deposits. Nevertheless, TVA proposes to have an archaeological monitor present for construction at the proposed administration building location, in order to identify any intact cultural deposits that might be exposed during construction.

Cemetery
A 1940 Works Progress Administration report and several later sources indicate that a cemetery (the Shields-Parksville Cemetery) with six (and possibly many more) graves, dating from prior to the Civil War until ca. 1900, was present at a location now occupied by the (later constructed)

Rock House, White House, or rail spur areas along a road in the O1H reservation. Extensive archival and anecdotal research indicates a few possible locations for the cemetery—either beneath one of the three houses on the O1H reservation or along the former railroad spur (now the O1H Reservation Road) that led to the top of the dam at the former location of a house (Reynolds 2020:51). Visual examination of these areas failed to identify any grave markers or grave depressions. Given the cemetery's period of use, it is not related to the hydro facility and is not a contributing resource to O1H. In order to fully determine the cemetery's existence and location additional investigations were warranted. Background research dates this cemetery between 1840 and 1900. At this time, TVA has not uncovered enough information to determine its individual evaluation under NRHP.

TVA retained Wood Environment and Infrastructure Solutions, Inc. (Wood) to perform an archaeogeophysical investigation at two areas (with the highest probability of containing the cemetery based on background research) within the TVA O1H facility (Wampler and Martin 2020) in an effort to identify the location of the Shields-Parksville Cemetery. The cemetery location information as near the Rock/White Houses or rail spur area is based primarily on the eyewitness account of a stonemason named Brad Kimbrough who worked on the property and who died in 1913 (Reynolds 2020:26). The study relied on electrical resistivity survey in selected sampling grids surrounding the three hypothetical cemetery locations, supplemented by ground-truthing with tile probes. The report, titled, *Geophysical investigation at TVA Ocoee 1 (Rock House, White House, and Rail Spur), Polk County, Tennessee-Draft Report*, is attached for your review. The investigation identified nine anomalies in the APE that may represent unmarked burials. [redacted] No formal cemetery limits were identified in the geophysical data. Due to a variety of natural and cultural issues, Wood cannot guarantee a presence or absence of grave locations. Wood recommends avoiding both sets of anomalies and establishing a 10-meter buffer around each, to avoid any disturbance related to the undertaking.

TVA has read Wood's report and finds that the work was conducted adequately. Based on this investigation, there are at least two areas containing a minimum of nine graves. We believe both areas are part of the historically-documented Shields-Parksville Cemetery. TVA does not agree with the recommended 10-meter buffer. All nine anomalies were identified at the very edge of a geophysical survey block. Thus, additional potential burials could be located just outside of the survey area. In addition, burials could be located underneath the Rock House, which was inaccessible for remote sensing. As such, TVA finds that a 10-meter buffer is inadequate protection for the nine potential burials. TVA will place a 50-meter protective buffer around each anomaly. Alternative A and B could adversely affect the Shields-Parksville Cemetery through the license or demolition of the Rock House. At this time, TVA has not decided on an alternative. We propose that our offices enter into a Memorandum of Agreement (MOA) to record the terms and conditions for phased compliance with NHPA and to develop a treatment plan for working in and around the potential burials adjacent to the Rock House. No work is planned in or around the potential burials identified in the Rail Spur Area. If work is planned in the future at this location additional archaeological evaluation efforts would be

warranted and TVA would reopen consultation with your office. TVA finds that there is not enough information at this time to assess the potential NRHP eligibility of the Shields-Parksville Cemetery and that it should be considered undetermined until further investigations have been conducted.

Historic Architectural Resources
Five historic architectural resources would be potentially affected by this project. These affected resources include Ocoee No. 1 (O1H), three of four houses associated with O1H, and a potential cemetery, the Shields-Parksville Cemetery (also called the Shields Cemetery or Parksville Cemetery).

The O1H facility was listed in the NRHP in 1990 as the Ocoee Number One Hydroelectric Station under the *Pre-TVA Hydroelectric Development in Tennessee, 1901–1933* multiple property documentation form (Jones 1989; Jones 1990). TVA contracted with Cultural Resource Analysts, Inc. (CRA) for an assessment of the O1H recommended NRHP boundary including the entire O1H reservation as well as a house across US Highway 64/74/TN-40 (Site 4) as a part of the identification effort for Section 106 for this undertaking (Reynolds 2020:51-52) (see Figure 1). The report, titled, *Technical Studies Report for the Proposed Ocoee Number One Hydro Houses Disposal in Polk County, Tennessee*, can be accessed here: https://drive.google.com/file/d/1vSfg6zkMilEJaiVwgYoqfUvwpQTA7kGj/view?usp=sharing.

The three houses located on the O1H reservation and the house across the road (no longer associated with the TVA O1H facility) are eligible for listing in the NRHP as a part of the Ocoee Number One property under Criterion A in the areas of commerce, community planning and development, and industry. Since the current National Register boundary for Ocoee Number One only includes the dam and powerhouse, CRA recommends that the current boundary be expanded to include the entire reservation as well as the house across the highway. TVA concurs that O1H retains integrity for listing and that the NRHP boundary should be increased.

The Shields-Parksville Cemetery pre-dates development of the O1H facility; therefore, it is not related to the hydro facility. Furthermore, research conducted by both CRA and Wood at O1H did not reveal any aboveground components of the Shields-Parksville Cemetery. Therefore, TVA finds that the cemetery should not be assessed or documented as an aboveground resource, but rather as an archaeological resource. .

Under the No Action Alternative, the three houses at the O1H facility would continue to be utilized in their current state, as offices to support the O1H facility. Deferred maintenance of these houses could result in deterioration eventually leading to an adverse effect as outlined in 36 CFR Part 800.5 (a)(2)(vi). This potential adverse effect would trigger a need for mitigation.

Consolidation of the administrative spaces at O1H into a new administration building (Action Alternatives A and B) would change the character of the property's physical features that contribute to its historic significance. The construction of the new administration building would introduce new materials and design to the site that differ from the historic nature of the property,

diminishing the integrity of setting and design of the NRHP-listed property. Therefore, TVA finds that this action would result in an adverse effect on O1H.

Disposal of the three houses via license or easement grant of the buildings, individually or together, and/or the land (Action Alternative A), could further result in adverse effects. If alterations or renovations to the buildings by the potential lessee(s) are not in keeping with the Secretary of the Interior's (SOI) standards for the treatment of historic properties (SOI Standards)(36 CFR Part 68). Should TVA decide to dispose of the houses via license or easement grant, we propose to include language in the lease/easement documents that requires review of plans and alterations by TVA's Cultural Compliance staff. This review would require that any alterations or renovations carried out by the licensee or easement holder be in keeping with the SOI Standards. The language would prohibit any ground disturbance within the 50-meter buffer around potential burials and within the footprint of each house, where geophysical survey could not be completed. This language would specify that if these areas cannot be avoided, or if the SOI Standards cannot be met, TVA would assist in the development and completion of appropriate mitigation to offset adverse effects to the three houses. This language would commit the licensee or easement holder legally to the restrictions.

Under Action Alternative B, TVA would dispose of the houses through demolition under Action Alternative B. Demolition would not only result in a direct and visual effect to O1H through the loss of contributing resource, but it could also result in effects to the cemetery. A treatment plan, developed in consultation with your office, would be required to outline the measures that would be required to avoid effects to potential burials associated within the cemetery during demolition of the structures.

In sum, TVA finds that the No Action Alternative could result in an adverse effect resulting from the eventual deterioration of the three houses that are contributing resources of O1H; and Action Alternatives A and B would result in an adverse effect due to the addition of the new administration building within the landscape of O1H. TVA finds that the proposed undertaking would have potential adverse effects on historic properties.

The removal of the honey bee hive from the Rock House will need to occur prior to the completion of the Section 106 consultation process. Any openings required in the walls or floor would be replaced in-kind. TVA finds that this in-kind replacement would not result in an adverse effect. We are seeking your concurrence for this work to occur prior to the completion of the Section 106 process and the signing of any associated agreement documents, given the need to do so in the winter months.

Pursuant to 36 CFR § 800.6(a), TVA is seeking your comments and input on any alternatives or ways to avoid, minimize or mitigate the undertaking's potential adverse effects. TVA proposes to address these potential adverse effects in an MOA and is inviting you to participate as a concurring party. The MOA would stipulate the measures TVA would use to mitigate the adverse effects on these buildings and include a treatment plan for the potential burials to avoid potential effects to archaeological resources due to demolition. TVA proposes, as mitigation:

1) State-level Historic American Buildings Survey (HABS) documentation of each affected building;
2) The revision of the NRHP documentation for the O1H facility to include the recommended expansion of the NRHP boundary;
3) A detailed avoidance plan for potential physical effects to unmarked human burials; and
4) Full evaluation of all resources within the boundary to determine which would be contributing and non-contributing.

TVA seeks your concurrence with TVA's findings including the following:

1. The four former operators' houses are contributing buildings to the O1H reservation under Criterion A in the areas of commerce, community planning and development, and industry.
2. O1H retains integrity to remain listed in the NRHP and its boundary should be expanded to include the entire reservation as well as the house across the highway.
3. Additional archaeological evaluation studies may be needed as project plans are further developed, specifically remote sensing.
4. The boundary of Shields-Parksville Cemetery has not been located and to avoid potential damage a 50-meter buffer would be placed on potential burials.
5. TVA would reopen consultation with your office if work is proposed at or near the potential burials adjacent to the railroad spur.
6. The No Action Alternative and Action Alternatives A and B could adversely affect the potential burials adjacent to the Rock House and a treatment plan should be developed and included in the MOA to address these potential adverse effects.
7. An MOA prepared, as outlined above, would be an appropriate mitigation for adverse effects to O1H and the potential burials.
8. The removal of the honey bee colony in the Rock House will not result in adverse effects if any holes are needed in floors or walls, so long as any replacements are done in-kind; and that this work can proceed this winter, prior to the completion of the MOA.

Pursuant to 36 C.F.R. Part 800.3(f)(2), TVA is consulting 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 United Keetoowah Band of Cherokee Indians in Oklahoma.

Pursuant to 36 CFR § 800.6(a)(1), TVA will be notifying the Advisory Council on Historic Preservation of the adverse effect and is providing the documentation specified in 36 CFR § 800.11(e).

Pursuant to 36 CFR § 800.6(c), TVA proposes to enter into a MOA with your office to mitigate the undertaking's potential adverse effects to O1H, the Shields-Parksville Cemetery, and the

three administrative buildings. The MOA will detail a proposed treatment plan for the potential burials.

By this letter we are providing notification of these findings and are seeking your comments regarding any properties that may be of religious and cultural significance and may be eligible for listing in the NRHP pursuant to 36CFR 800.2 (c)(2)(ii), 800.3 (f)(2), and 800.4 (a)(4)(b).

We are also providing notification that TVA is proceeding under the phased process to conduct identification, evaluation and application of criteria of adverse effects for the undertaking, as provided for under CFR § 800.4(b)(2) and § 800.5(a)(3) as it is possible that additional archaeological evaluations may be needed in the future, depending on future design changes.

Please respond by February 27, 2021 if you have any comments on the proposed undertaking and if you would like to participate as a concurring party to the proposed MOA. If you have any questions, please contact me email, mmshuler@tva.gov.

Sincerely,

Marianne Shuler
Senior Specialist, Archaeologist & Tribal Liaison
Cultural Compliance

HAH:ABM
Enclosures
cc (Enclosures):

Mr. Paul Barton
Eastern Shawnee Tribe of Oklahoma
127 West Oneida
Seneca, Missouri 64865

Ms. Sheila Bird
Shawnee Tribe
Post Office Box 189
Miami, Oklahoma 74355

Ms. Erica Gorsuch
United Keetoowah Band of Cherokee Indians in Oklahoma
Post Office Box 746
Tahlequah, Oklahoma 74465

Ms. Corain Lowe-Zepeda
The Muscogee (Creek) Nation
Post Office Box 580
Okmulgee, Oklahoma 74447

Mr. Russell Townsend
Eastern Band of Cherokee Indians
Post Office Box 455
Cherokee, North Carolina 28719

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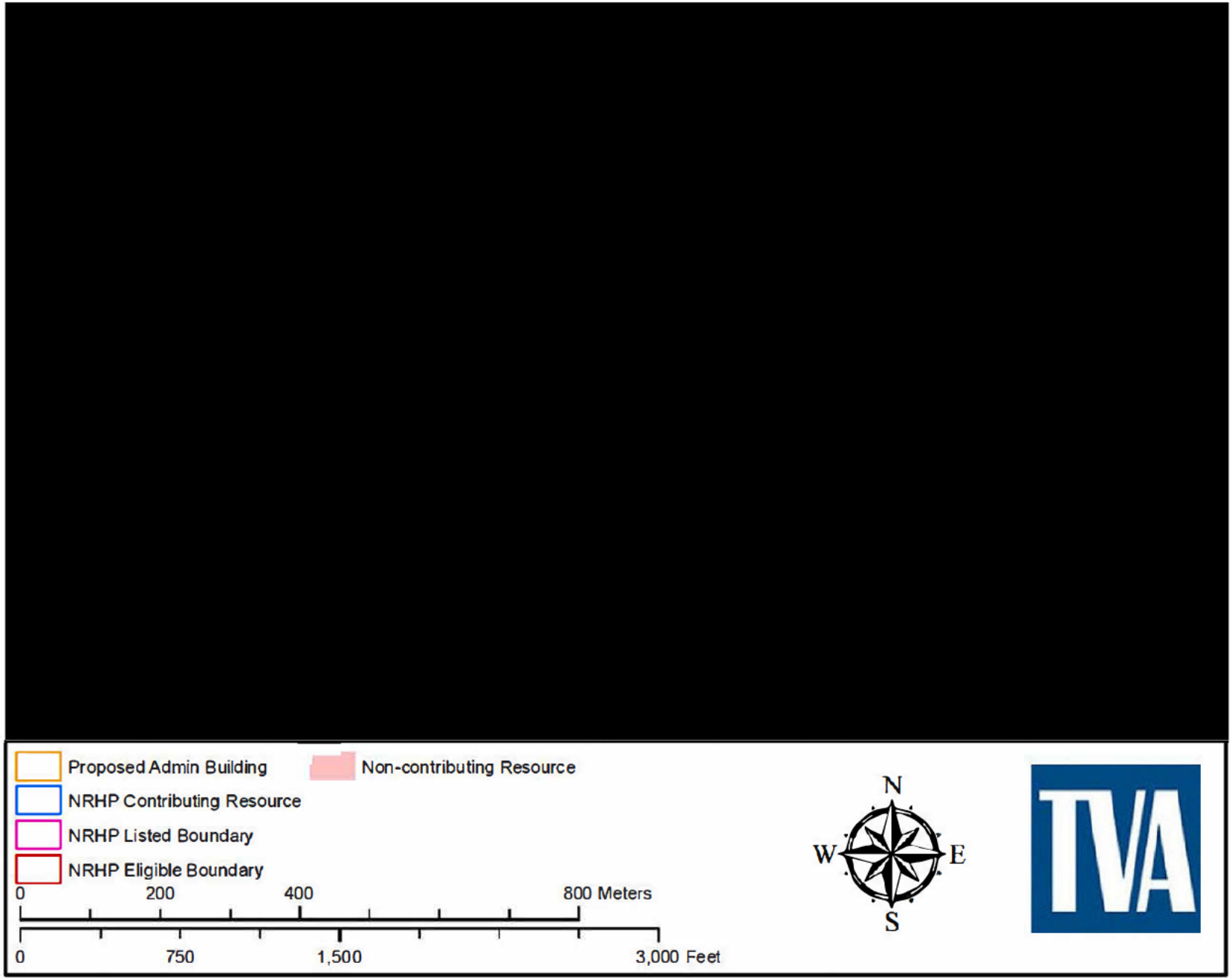
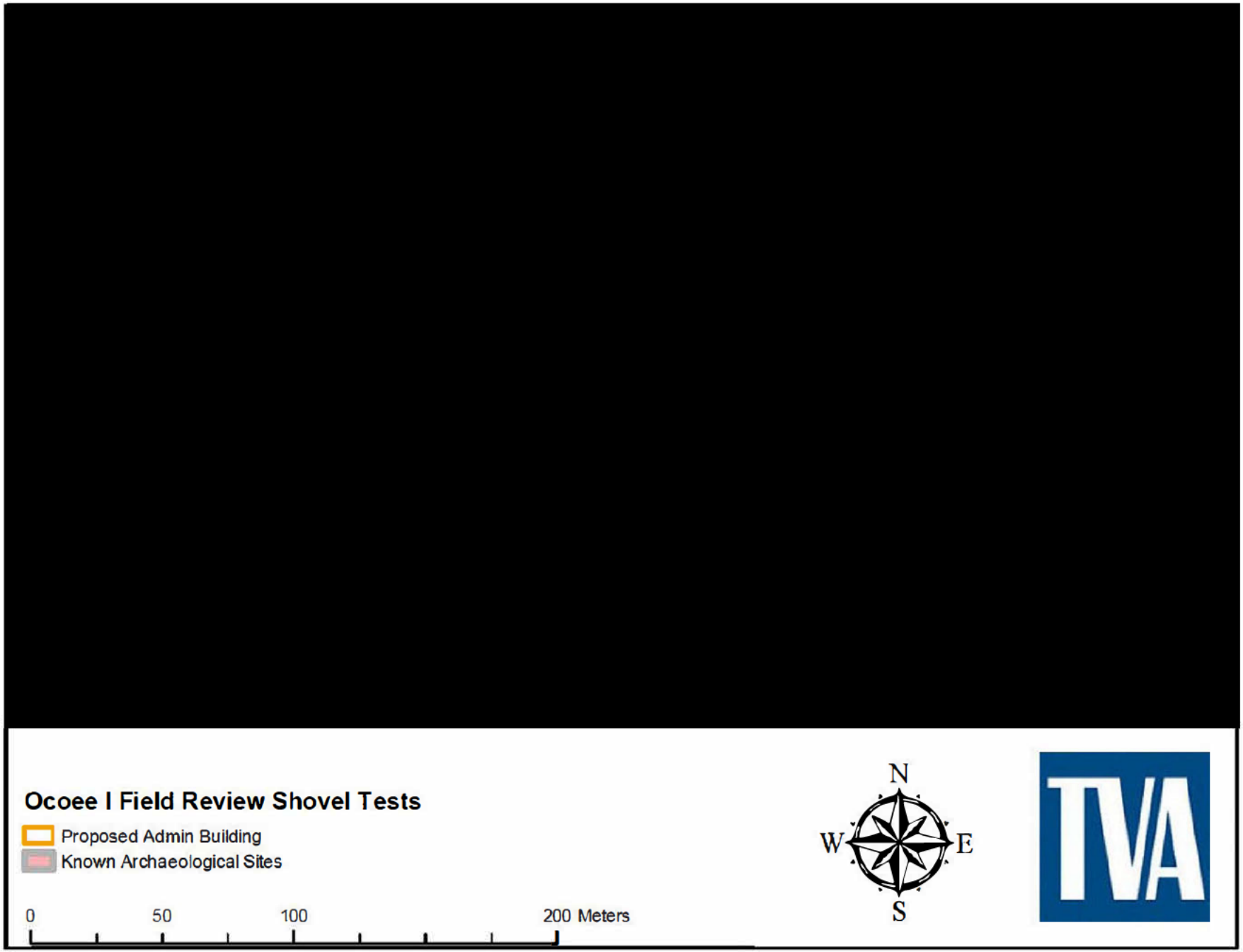
Reynolds, Sarah J.
2020 *Technical Studies Report for the Proposed Ocoee Number One Hydro Houses Disposal in Polk County, Tennessee*. Cultural Resource Analysts, Inc. Lexington, Kentucky. Prepared for Tennessee Valley Authority.

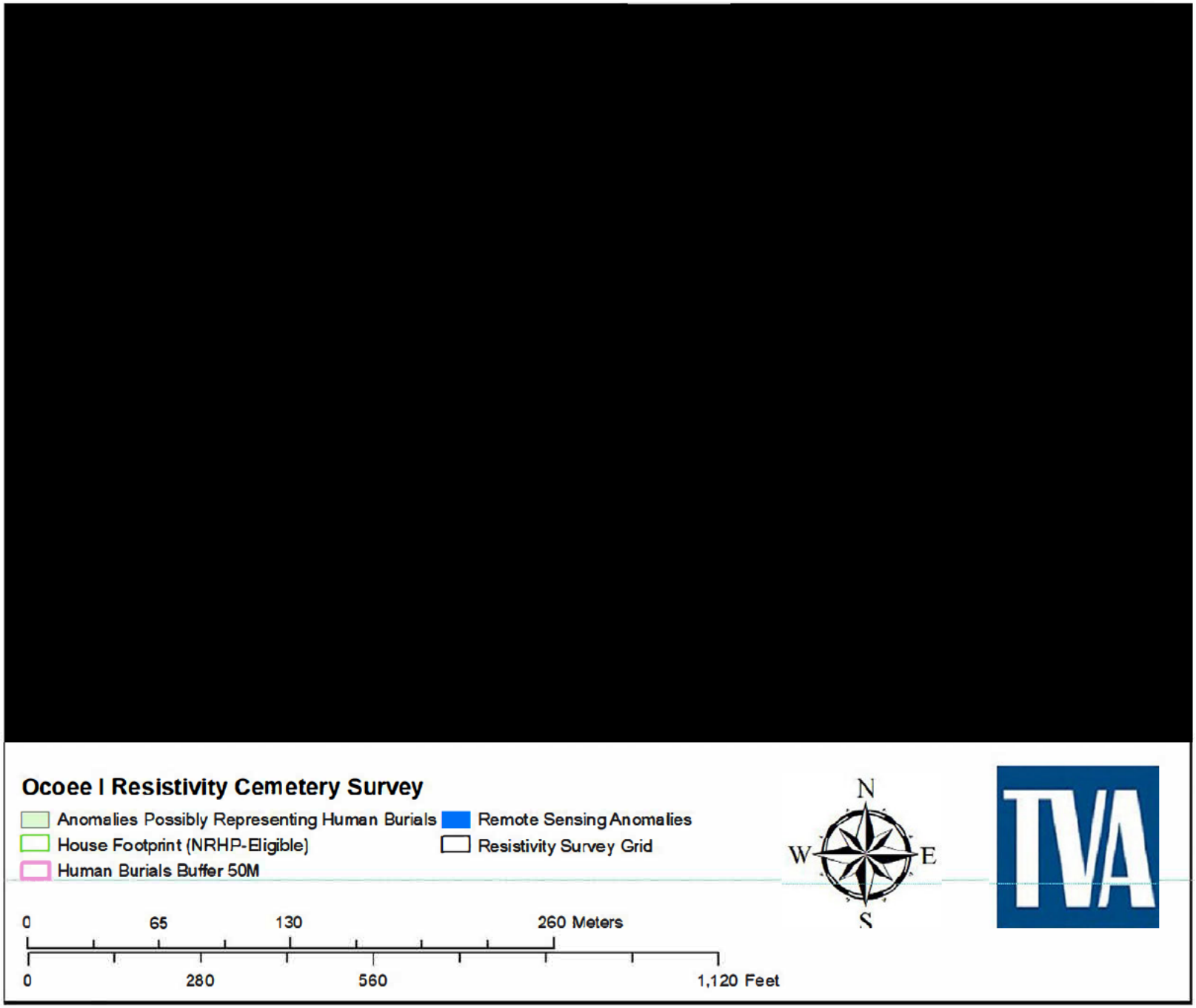
Wampler, Marc E. and Steven A. Wood
2020 *Geophysical Investigation at TVA Ocoee 1 (Rock House, White House, and Rail Spur) Polk County, Tennessee*. Wood Environment and Infrastructure Solutions, Inc. Prepared for Tennessee Valley Authority.



Redacted Figure 1. Satellite image showing the location of the APE (in red) within the recommended NRHP boundary for O1H. Basemap: ESRI.



Redacted Figure 2. Field review shovel test probe locations. Basemap: ESRI



Redacted Figure 3. Satellite image depicting the resistivity cemetery survey grid, findings, and recommended buffer. Basemap: ESRI

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

January 27, 2021

Ms. Marion Presswood
Historian
Polk County Historical and Geneological Society
Post Office Box 636
Benton, Tennessee 37307

Dear Ms. Presswood:

TENNESSEE VALLEY AUTHORITY (TVA), OCOEE NUMBER 1 HYDRO CONSOLIDATION AND ADMINISTRATION BUILDING CONSTRUCTION, POLK COUNTY, TENNESSEE (TVA TRACKING NUMBER – CID 78796)

TVA proposes to consolidate people and functions at Ocoee Number 1 Hydroelectric Facility (O1H) in Polk County, Tennessee. The project would consist of consolidating three existing O1H administrative houses—the Ocoee Regional Office, the Main Office (Rock House), and the Assembly Building (White House)—into a new administrative building and then potentially dispose of the three vacated buildings (Figure1). This proposed new office building at O1H would be located out of the floodplain and would be approximately 18 feet in height, 98 feet in width, and 32 feet in depth. Consolidation to a single building inside the security perimeter and the elimination of numerous safety hazards in the existing houses would be benefits of consolidation. TVA is evaluating the project's potential effects on archaeological sites and above-ground historic resources, as part of our compliance with Section 106 of the National Historic Preservation Act (NHPA). For projects that federal agencies are involved in, this law requires the lead federal agency to "take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). The National Register is the Nation's official list of historic sites, buildings, and structures deemed worth of preservation.

Given that the scope of this project would involve consolidation of the O1H plant, TVA determined the area of potential effects (APE) to be the entirety of the O1H facility (the NRHP-eligible boundary except for the one former operator's house across from the facility, which is no longer associated with the TVA plant). At this time, the exact location of the project footprint that would result in ground disturbance is unknown. Archaeological evaluation studies for this project are limited in that the project is still in the planning stage and no definite project footprint has been defined. Additional archaeological evaluation studies may be needed as final designs and plans are developed.

Currently TVA is considering three options for the consolidation project:

- *No Action*: Under this alternative, TVA would not perform any consolidations at O1H. Current utilization of the three houses outside the secure perimeter would continue.

- *Action Alternative A*: TVA would dispose of the three existing O1H administrative houses via license or easement grant of the buildings (individually or together) and/or the land. TVA would construct a new administrative building and use an associated laydown area.
- *Action Alternative B*: Demolition of the three administrative houses. TVA would construct a new administrative building and use an associated laydown area.

Action Alternatives A and B would include site preparation, construction of the new building, and associated laydown area. The new building would be connected to the existing main septic system. The capacity of the septic tank, water supply, and sprinkler system for the entire O1H site would also need to be addressed. Work associated with the septic system would only require a new drain field, and would not require replacement of the entire system. TVA would extend existing paving to provide access the new building. TVA would secure the new building with badge readers, cameras and upgraded Information Technology (IT) connectivity. The gas bottle storage (a small structure designed to store gas cylinders in a cool, dry, well-ventilated, fire-resistant location that meets all applicable federal, state and local regulations) comprised of exterior walls with a flat covering would be relocated on site upon the existing paved area surrounding the power house.

TVA considered other alternatives including rebuilding the existing welding shop, renovating the powerhouse including the addition of an exterior elevator, and adaptive reuse of the houses by TVA, but each had serious issues that made them much more problematic than Alternatives A and B.

Archaeological Resources
The no action alternative would not affect any potential archaeological resources, as no ground disturbance would be proposed. Both Action Alternative A and B could potentially result in effects on historic properties. Construction of a new administration building, installation of electrical and septic system connections for the building, and construction of the building itself all have potential for effects on previously-unrecorded archaeological resources. Despite previous disturbance from the development and construction of the O1H facility, TVA finds there is a potential for deeply buried cultural deposits in this area, based on examinations of historic and current USGS topographic quadrangles and on our understanding of how O1H was constructed. In addition, it is possible that there are areas within the O1H facility that may not have been disturbed during the construction of the facility. No previous archaeological investigations have been conducted at this location.

TVA archaeologists conducted an archaeological survey for this project which included walkover of accessible areas of the O1H reservation where construction-related activities could take place. This includes areas where historical research suggests the presence of unmarked cemeteries. A separate remote-sensing survey was conducted for the possible cemetery locations. The goal of the survey was to identify any unknown cultural resources that could be affected by construction to include the proposed administration building, and any lines or drainfields. The survey found that there is ample evidence that the APE has been extensively modified and that there is little potential for intact archaeological deposits. If there are intact non-cemetery cultural deposits that could be affected by the proposed construction, they would

most likely be historic railroad-related deposits. TVA therefore proposes to have an archaeological monitor present for construction at the proposed administration building location, in order to identify any intact cultural deposits that might be exposed during construction.

Cemetery
A 1940 Works Progress Administration report and several later sources indicate that a cemetery (the Shields-Parksville Cemetery) with six (and possibly many more) graves, dating from prior to the Civil War until ca. 1900, was present at a location now occupied by the (later constructed) Rock House, White House, or rail spur areas along a road in the O1H reservation. Extensive archival and anecdotal research indicates a few possible locations for the cemetery—either beneath one of the three houses on the O1H reservation or along the former railroad spur (now the O1H Reservation Road) that led to the top of the dam at the former location of a house (Reynolds 2020:51). Visual examination of these areas failed to identify any grave markers or grave depressions. Given the cemetery's period of use, it is not related to the hydro facility and is not a contributing resource to O1H. In order to fully determine the cemetery's existence and location, additional investigations were warranted. Background research dates this cemetery between 1840 and 1900. At this time, TVA has not uncovered enough information to determine its individual evaluation under NRHP.

TVA performed an archaeogeophysical investigation at two areas (with the highest probability of containing the cemetery based on background research) within the TVA O1H in an effort to identify the location of the Shields-Parksville Cemetery. The results of the investigation suggest that these two areas contain a minimum of nine graves that we believe are part of the historically-documented Shields-Parksville Cemetery. TVA will place a 50-meter protective buffer around each possible burial. Alternative A and B could adversely affect the Shields-Parksville Cemetery through the license or demolition of the Rock House. At this time, TVA has not decided on an alternative.

TVA is consulting with the Tennessee State Historic Preservation Officer (SHPO) regarding these findings, as required by the regulations implementing the NHPA and proposing that our offices enter into a Memorandum of Agreement (MOA) to record the terms and conditions for phased compliance with NHPA and to develop a treatment plan for working in and around the potential burials adjacent to the Rock House. No work is planned in or around the potential burials identified in the Rail Spur Area. TVA finds that there is not enough information at this time to assess the potential NRHP eligibility of the Shields-Parksville Cemetery and that it should be considered undetermined until further investigations have been conducted.

Historic Architectural Resources
Five historic architectural resources would be potentially affected by this project. These affected resources include Ocoee No. 1 (O1H), three of four houses associated with O1H, and a potential cemetery, the Shields-Parksville Cemetery (also called the Shields Cemetery or Parksville Cemetery).

The O1H facility was listed in the NRHP in 1990 as the Ocoee Number One Hydroelectric Station under the *Pre-TVA Hydroelectric Development in Tennessee, 1901–1933* multiple

property documentation form (Jones 1989; Jones 1990). TVA performed an assessment of the O1H recommended NRHP boundary including the entire O1H reservation as well as a house across US Highway 64/74/TN-40 (Site 4) as a part of the identification effort for Section 106 for this undertaking (Reynolds 2020:51-52) (see Figure 1). The three houses located on the O1H reservation and the house across the road (no longer associated with the TVA O1H facility) are eligible for listing in the NRHP as a part of the Ocoee Number One property under Criterion A in the areas of commerce, community planning and development, and industry. Since the current National Register boundary for Ocoee Number One only includes the dam and powerhouse, TVA recommends that the current boundary be expanded to include the entire reservation as well as the house across the highway. TVA believes that O1H retains integrity for listing and that the NRHP boundary should be increased.

The Shields-Parksville Cemetery pre-dates development of the O1H facility; therefore, it is not related to the hydro facility. Furthermore, research did not reveal any aboveground components of the Shields-Parksville Cemetery. Therefore, TVA finds that the cemetery should not be assessed or documented as an above-ground resource, but rather as an archaeological resource. .

Under the No Action Alternative, the three houses at the O1H facility would continue to be utilized in their current state, as offices to support the O1H facility. Deferred maintenance of these houses could result in deterioration eventually leading to an adverse effect as outlined in 36 CFR Part 800.5 (a)(2)(vi). This potential adverse effect would trigger a need for mitigation.

Consolidation of the administrative spaces at O1H into a new administration building (Action Alternatives A and B) would change the character of the property's physical features that contribute to its historic significance. The construction of the new administration building would introduce new materials and design to the site that differ from the historic nature of the property, diminishing the integrity of setting and design of the NRHP-listed property. Therefore, TVA finds that this action would result in an adverse effect on O1H.

Disposal of the three houses via license or easement grant of the buildings, individually or together, and/or the land (Action Alternative A), could further result in adverse effects. If alterations or renovations to the buildings by the potential lessee(s) are not in keeping with the Secretary of the Interior's (SOI) standards for the treatment of historic properties (SOI Standards)(36 CFR Part 68). Should TVA decide to dispose of the houses via license or easement grant, we propose to include language in the lease/easement documents that requires review of plans and alterations by TVA's Cultural Compliance staff. This review would require that any alterations or renovations carried out by the licensee or easement holder be in keeping with the SOI Standards. The language would prohibit any ground disturbance within the 50-meter buffer around potential burials and within the footprint of each house, where geophysical survey could not be completed. This language would specify that if these areas cannot be avoided, or if the SOI Standards cannot be met, TVA would assist in the development and completion of appropriate mitigation to offset adverse effects to the three houses. This language would commit the licensee or easement holder legally to the restrictions.

Under Action Alternative B, TVA would dispose of the houses through demolition. Demolition would not only result in a direct and visual effect to O1H through the loss of contributing resource, but it could also result in effects to the cemetery. A treatment plan would be required to outline the measures needed to avoid effects to potential burials associated within the cemetery during demolition of the structures.

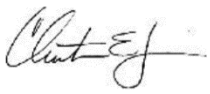
In sum, TVA finds that the No Action Alternative could result in an adverse effect resulting from the eventual deterioration of the three houses that are contributing resources of O1H; and Action Alternatives A and B would result in an adverse effect due to the addition of the new administration building within the landscape of O1H. TVA finds that the proposed undertaking would have potential adverse effects on historic properties.

A honey bee hive discovered in the Rock House will need to be removed prior to the completion of the Section 106 consultation process. Any openings required in the walls or floor would be replaced in-kind. TVA finds that this in-kind replacement would not result in an adverse effect.

When the selected action alternative is finalized, TVA will propose measures to resolve the adverse effects (if any) on the O1H facility and will be entering into an MOA with the Tennessee SHPO to resolve these adverse effects. Pursuant to 36 CFR Part 800, we are seeking your comments on the proposed undertaking. TVA will take your comments, and those of other consulting parties, into consideration when drafting an MOA and finalizing the mitigation plan. We would appreciate receiving any comments within 30 days of receipt of this letter.

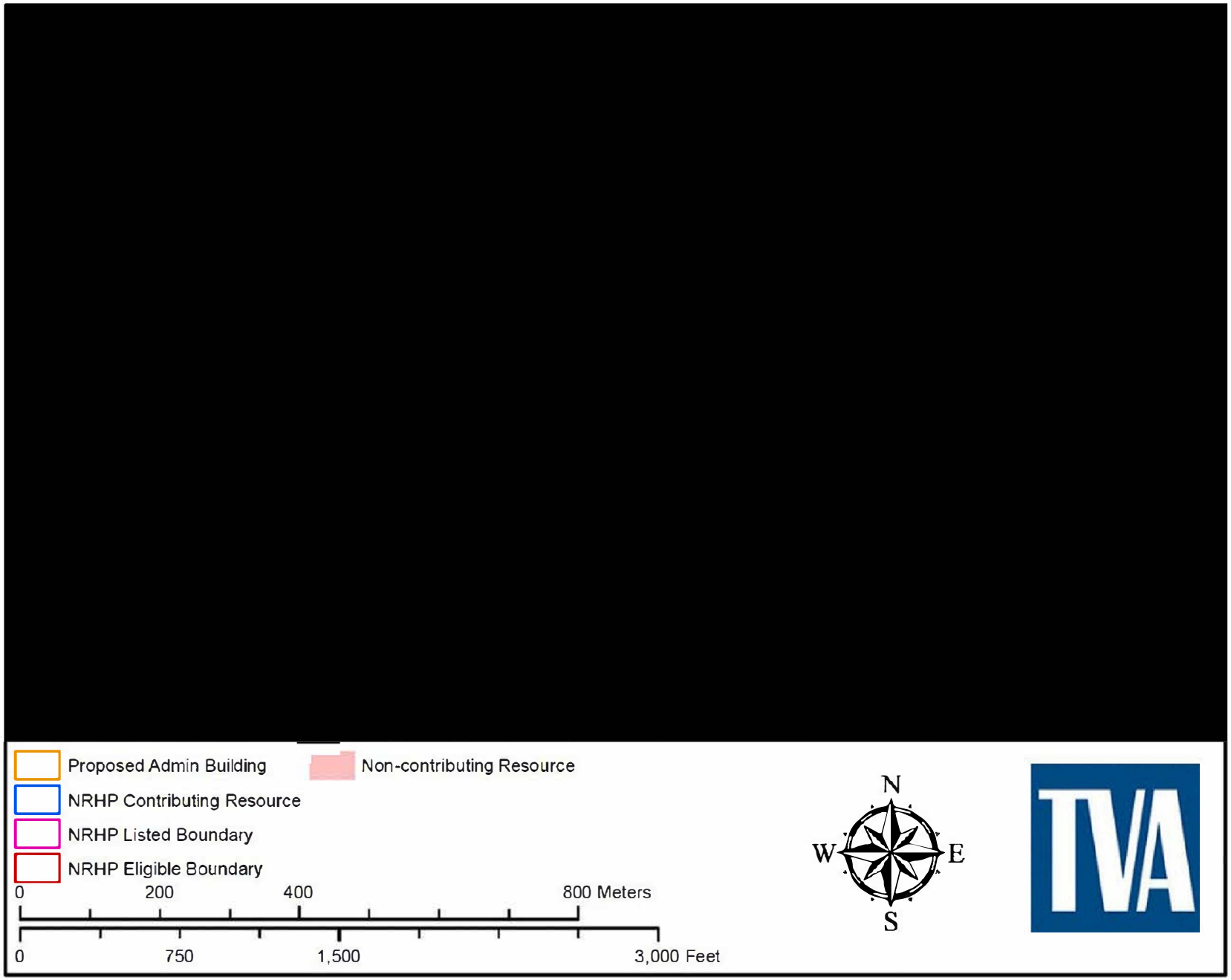
Please contact Hallie Hearnes in Knoxville by email, hahearnes@tva.gov, with your comments.

Sincerely,



Clinton E. Jones
Manager
Cultural Compliance

HAH:ABM
Enclosures



Redacted Figure 1. Satellite image showing the location of the APE (in red) within the recommended NRHP boundary for O1H. Basemap: ESRI.

Tennessee Valley Authority, 400 West Summit Hill Drive, Knoxville, Tennessee 37902

January 27, 2021

Mr. E. Patrick McIntyre, Jr.
Executive Director
and State Historic Preservation Officer
Tennessee Historical Commission
State Historic Preservation Office
2941 Lebanon Pike
Nashville, Tennessee 37214

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), OCOEE NUMBER 1 HYDRO CONSOLIDATION AND ADMINISTRATION BUILDING CONSTRUCTION, POLK COUNTY, TENNESSEE (35.097, -84.651) (TVA TRACKING NUMBER – CID 78796)

TVA proposes to consolidate people and functions at Ocoee Number 1 Hydroelectric Facility (O1H) in Polk County, Tennessee. The project would consist of consolidating three existing O1H administrative houses—the Ocoee Regional Office, the Main Office (Rock House), and the Assembly Building (White House)—into a new administrative building and then potentially dispose of the three vacated buildings (Figure1). This proposed new office building at O1H would be located out of the floodplain and would be approximately 18 feet in height, 98 feet in width, and 32 feet in depth (see attached plans). Consolidation to a single building inside the security perimeter and the elimination of numerous safety hazards in the existing houses would be benefits of consolidation. We are initiating consultation under Section 106 of the National Historic Preservation Act for this undertaking. Given that the scope of this project would involve consolidation of the O1H plant, TVA determined the area of potential effects (APE) to be the entirety of the O1H facility (the National Register of Historic Places [NRHP]-eligible boundary except for the one former operator's house across from the facility, which is no longer associated with the TVA plant). At this time, the exact location of the project footprint that would result in ground disturbance is unknown. Archaeological evaluation studies for this project are limited in that the project is still in the planning stage and no definite project footprint has been defined. Additional archaeological evaluation studies may be needed as final designs and plans are developed.

Currently TVA is considering three options for the consolidation project:

- *No Action*: Under this alternative, TVA would not perform any consolidations at O1H. Current utilization of the three houses outside the secure perimeter would continue.
- *Action Alternative A*: TVA would dispose of the three existing O1H administrative houses via license or easement grant of the buildings (individually or together) and/or the land. TVA would construct a new administrative building and use an associated laydown area.

- *Action Alternative B*: Demolition of the three administrative houses. TVA would construct a new administrative building and use an associated laydown area.

Action Alternatives A and B would include site preparation, construction of the new building, and associated laydown area. The new building would be connected to the existing main septic system. The capacity of the septic tank, water supply, and sprinkler system for the entire O1H site would also need to be addressed. Work associated with the septic system would only require a new drain field, and would not require replacement of the entire system. TVA would extend existing paving to provide access to the new building. TVA would secure the new building with badge readers, cameras and upgraded Information Technology (IT) connectivity. The gas bottle storage (a small structure designed to store gas cylinders in a cool, dry, well-ventilated, fire-resistant location that meets all applicable federal, state and local regulations) comprised of exterior walls with a flat covering would be relocated on site upon the existing paved area surrounding the power house.

TVA considered other alternatives including rebuilding the existing welding shop, renovating the powerhouse including the addition of an exterior elevator, and adaptive reuse of the houses by TVA, but each had serious issues that made them much more problematic than Alternatives A and B.

During the facility assessments, a honey bee colony was discovered in the walls of the Rock House. TVA will need to relocate the colony this winter in preparation of either Alternative A or B. The removal of the colony needs to be conducted prior to the completion of the NEPA review. Interior or exterior openings may be required to fully remove the hive; any openings in the walls or floor would be replaced in-kind.

Archaeological Resources

The no action alternative would not affect any potential archaeological resources, as no ground disturbance would be proposed. Both Action Alternative A and B could potentially result in effects on historic properties. Construction of a new administration building, installation of electrical and septic system connections for the building, and construction of the building itself all have potential for effects on previously-unrecorded archaeological resources. Despite previous disturbance from the development and construction of the O1H facility, TVA finds there is a potential for deeply buried cultural deposits in this area, based on examinations of historic and current USGS topographic quadrangles and on our understanding of how O1H was constructed. In addition, it is possible that there are areas within the O1H facility that may not have been disturbed during the construction of the facility. No previous archaeological investigations have been conducted at this location.

TVA archaeologists conducted a field review for this project on December 2, 2020 which included pedestrian walkover of accessible areas of the O1H reservation where construction-related activities could take place. This includes areas where historical research suggests the presence of unmarked cemeteries (Reynolds 2020). A separate remote-sensing survey was conducted for the possible cemetery locations (detailed below). The goal of the field review was to identify any unknown cultural resources that could be affected by construction to include the

proposed administration building, and any lines or drainfields. Opportunistic shovel testing, deep auger testing, and pedestrian survey were conducted outside of the possible cemetery locations near the proposed construction, but where asphalt and crushed rock pavement did not cover the landform (Figure 2). No artifacts were collected during the course of this investigation. All field notes, photographs, and other materials will be digitally curated in the TVA Integrated Cultural Database.

For your review, please find the attached TVA field review report titled *Archaeological Reconnaissance Survey for Ocoee Number 1 Hydro Consolidation and Administration Building Construction, Polk County, Tennessee.* The report finds that there is ample fill soil and construction evidence that the entire middle terrace landform within the APE has been extensively modified and that there is little potential for intact deep deposits. If there are intact non-cemetery cultural deposits that could be affected by the proposed construction, they would most likely be historic railroad-related deposits. Nevertheless, TVA proposes to have an archaeological monitor present for construction at the proposed administration building location, in order to identify any intact cultural deposits that might be exposed during construction.

Cemetery

A 1940 Works Progress Administration report and several later sources indicate that a cemetery (the Shields-Parksville Cemetery) with six (and possibly many more) graves, dating from prior to the Civil War until ca. 1900, was present at a location now occupied by the (later constructed) Rock House, White House, or rail spur areas along a road in the O1H reservation. Extensive archival and anecdotal research indicates a few possible locations for the cemetery—either beneath one of the three houses on the O1H reservation or along the former railroad spur (now the O1H Reservation Road) that led to the top of the dam at the former location of a house (Reynolds 2020:51). Visual examination of these areas failed to identify any grave markers or grave depressions. Given the cemetery's period of use, it is not related to the hydro facility and is not a contributing resource to O1H. In order to fully determine the cemetery's existence and location additional investigations were warranted. Background research dates this cemetery between 1840 and 1900. At this time, TVA has not uncovered enough information to determine its individual evaluation under NRHP.

TVA retained Wood Environment and Infrastructure Solutions, Inc. (Wood) to perform an archaeogeophysical investigation at two areas (with the highest probability of containing the cemetery based on background research) within the TVA O1H facility (Wampler and Martin 2020) in an effort to identify the location of the Shields-Parksville Cemetery. The cemetery location information as near the Rock/White Houses or rail spur area is based primarily on the eyewitness account of a stonemason named Brad Kimbrough who worked on the property and who died in 1913 (Reynolds 2020:26). The study relied on electrical resistivity survey in selected sampling grids surrounding the three hypothetical cemetery locations, supplemented by ground-truthing with tile probes. The report, titled, *Geophysical investigation at TVA Ocoee 1 (Rock House, White House, and Rail Spur), Polk County, Tennessee-Draft Report*, is attached for your review. The investigation identified nine anomalies in the APE that may represent unmarked burials. Four of these (Anomalies 5-8) were identified between 6-10 meters from the Rock House; five (Anomalies 17-21) were identified in the Rail Spur Area (Figure 3). No

anomalies were identified adjacent to the White House. No formal cemetery limits were identified in the geophysical data. Due to a variety of natural and cultural issues, Wood cannot guarantee a presence or absence of grave locations. Wood recommends avoiding both sets of anomalies and establishing a 10-meter buffer around each, to avoid any disturbance related to the undertaking.

TVA has read Wood's report and finds that the work was conducted adequately. Based on this investigation, there are at least two areas containing a minimum of nine graves. We believe both areas are part of the historically-documented Shields-Parksville Cemetery. TVA does not agree with the recommended 10-meter buffer. All nine anomalies were identified at the very edge of a geophysical survey block. Thus, additional potential burials could be located just outside of the survey area. In addition, burials could be located underneath the Rock House, which was inaccessible for remote sensing. As such, TVA finds that a 10-meter buffer is inadequate protection for the nine potential burials. TVA will place a 50-meter protective buffer around each anomaly. Alternative A and B could adversely affect the Shields-Parksville Cemetery through the license or demolition of the Rock House. At this time, TVA has not decided on an alternative. We propose that our offices enter into a Memorandum of Agreement (MOA) to record the terms and conditions for phased compliance with National Historic Preservation Act and to develop a treatment plan for working in and around the potential burials adjacent to the Rock House. No work is planned in or around the potential burials identified in the Rail Spur Area. If work is planned in the future at this location additional archaeological evaluation efforts would be warranted and TVA would reopen consultation with your office. TVA finds that there is not enough information at this time to assess the potential NRHP eligibility of the Shields-Parksville Cemetery and that it should be considered undetermined until further investigations have been conducted.

Historic Architectural Resources

Five historic architectural resources would be potentially affected by this project. These affected resources include Ocoee No. 1 (O1H), three of four houses associated with O1H, and a potential cemetery, the Shields-Parksville Cemetery (also called the Shields Cemetery or Parksville Cemetery).

The O1H facility was listed in the NRHP in 1990 as the Ocoee Number One Hydroelectric Station under the *Pre-TVA Hydroelectric Development in Tennessee, 1901–1933* multiple property documentation form (Jones 1989; Jones 1990). TVA contracted with Cultural Resource Analysts, Inc. (CRA) for an assessment of the O1H recommended NRHP boundary including the entire O1H reservation as well as a house across US Highway 64/74/TN-40 (Site 4) as a part of the identification effort for Section 106 for this undertaking (Reynolds 2020:51-52) (see Figure 1). The report, titled, *Technical Studies Report for the Proposed Ocoee Number One Hydro Houses Disposal in Polk County, Tennessee*, can be accessed here: https://drive.google.com/file/d/1vSfg6zkMilEJaiVwgYoqfUvwpQTA7kGj/view?usp=sharing.

The three houses located on the O1H reservation and the house across the road (no longer associated with the TVA O1H facility) are eligible for listing in the NRHP as a part of the Ocoee Number One property under Criterion A in the areas of commerce, community planning and

development, and industry. Since the current National Register boundary for Ocoee Number One only includes the dam and powerhouse, CRA recommends that the current boundary be expanded to include the entire reservation as well as the house across the highway. TVA concurs that O1H retains integrity for listing and that the NRHP boundary should be increased.

The Shields-Parksville Cemetery pre-dates development of the O1H facility; therefore, it is not related to the hydro facility. Furthermore, research conducted by both CRA and Wood at O1H did not reveal any above-ground components of the Shields-Parksville Cemetery. Therefore, TVA finds that the cemetery should not be assessed or documented as an above-ground resource, but rather as an archaeological resource. .

Under the No Action Alternative, the three houses at the O1H facility would continue to be utilized in their current state, as offices to support the O1H facility. Deferred maintenance of these houses could result in deterioration eventually leading to an adverse effect as outlined in 36 CFR Part 800.5 (a)(2)(vi). This potential adverse effect would trigger a need for mitigation.

Consolidation of the administrative spaces at O1H into a new administration building (Action Alternatives A and B) would change the character of the property's physical features that contribute to its historic significance. The construction of the new administration building would introduce new materials and design to the site that differ from the historic nature of the property, diminishing the integrity of setting and design of the NRHP-listed property. Therefore, TVA finds that this action would result in an adverse effect on O1H.

Disposal of the three houses via license or easement grant of the buildings, individually or together, and/or the land (Action Alternative A), could further result in adverse effects. If alterations or renovations to the buildings by the potential lessee(s) are not in keeping with the Secretary of the Interior's (SOI) standards for the treatment of historic properties (SOI Standards)(36 CFR Part 68). Should TVA decide to dispose of the houses via license or easement grant, we propose to include language in the lease/easement documents that requires review of plans and alterations by TVA's Cultural Compliance staff. This review would require that any alterations or renovations carried out by the licensee or easement holder be in keeping with the SOI Standards. The language would prohibit any ground disturbance within the 50-meter buffer around potential burials and within the footprint of each house, where geophysical survey could not be completed. This language would specify that if these areas cannot be avoided, or if the SOI Standards cannot be met, TVA would assist in the development and completion of appropriate mitigation to offset adverse effects to the three houses. This language would commit the licensee or easement holder legally to the restrictions.

Under Action Alternative B, TVA would dispose of the houses through demolition under Action Alternative B. Demolition would not only result in a direct and visual effect to O1H through the loss of contributing resource, but it could also result in effects to the cemetery. A treatment plan, developed in consultation with your office, would be required to outline the measures that would be required to avoid effects to potential burials associated within the cemetery during demolition of the structures.

In sum, TVA finds that the No Action Alternative could result in an adverse effect resulting from the eventual deterioration of the three houses that are contributing resources of O1H; and Action Alternatives A and B would result in an adverse effect due to the addition of the new administration building within the landscape of O1H. TVA finds that the proposed undertaking would have potential adverse effects on historic properties.

Pursuant to 36 CFR § 800.6(a), TVA is seeking your comments and input on any alternatives or ways to avoid, minimize or mitigate the undertaking's potential adverse effects. TVA proposes to address these potential adverse effects in an MOA. The MOA would stipulate the measures TVA would use to mitigate the adverse effects on these buildings and include a treatment plan for the potential burials to avoid potential effects to archaeological resources due to demolition. TVA proposes, as mitigation: 1) state-level Historic American Buildings Survey (HABS) documentation of each affected building; 2) the revision of the NRHP documentation for the O1H facility to include the recommended expansion of the NRHP boundary; 3) a detailed avoidance plan for potential physical effects to unmarked human burials; 4) full evaluation of all resources within the boundary to determine which would be contributing and non-contributing.

TVA seeks your concurrence on the following:

1. TVA's finding that the four former operators' houses are contributing buildings to the O1H reservation under Criterion A in the areas of commerce, community planning and development, and industry.
2. O1H retains integrity to remain listed in the NRHP and its boundary should be expanded to include the entire reservation as well as the house across the highway.
3. Additional archaeological evaluation studies may be needed as project plans are further developed, specifically remote sensing.
4. The boundary of Shields-Parksville Cemetery has not been located and to avoid potential damage a 50-meter buffer would be placed on potential burials.
5. TVA would reopen consultation with your office if work is proposed at or near the potential burials adjacent to the railroad spur.
6. The No Action Alternative and Action Alternatives A and B could adversely affect the potential burials adjacent to the Rock House and a treatment plan should be developed and included in the MOA to address these potential adverse effects.
7. An MOA prepared, as outlined above, would be an appropriate mitigation for adverse effects to O1H and the potential burials.

Pursuant to 36 CFR § 800.4(c), TVA is consulting with the Polk County Historical and Geneological Society.

Pursuant to 36 CFR § 800.6(a)(1), TVA will be notifying the Advisory Council on Historic Preservation of the potential adverse effect and is providing the documentation specified in 36 CFR § 800.11(e).

Pursuant to 36 CFR § 800.6(c), TVA proposes to enter into a MOA with your office to mitigate the undertaking's potential adverse effects to O1H, the Shields-Parksville Cemetery, and the

three administrative buildings. The MOA will detail a proposed treatment plan for the potential burials.

By this letter we are also providing notification that TVA is proceeding under the phased process to conduct identification, evaluation and application of criteria of adverse effects for the undertaking, as provided for under CFR § 800.4(b)(2) and § 800.5(a)(3) as it is possible that additional archaeological evaluations may be needed in the future, depending on future design changes.

Please contact Hallie Hearnes in Knoxville by email, hahearnes@tva.gov, with your comments.

Sincerely,

Clinton E. Jones
Manager
Cultural Compliance

HAH:ABM
Enclosures

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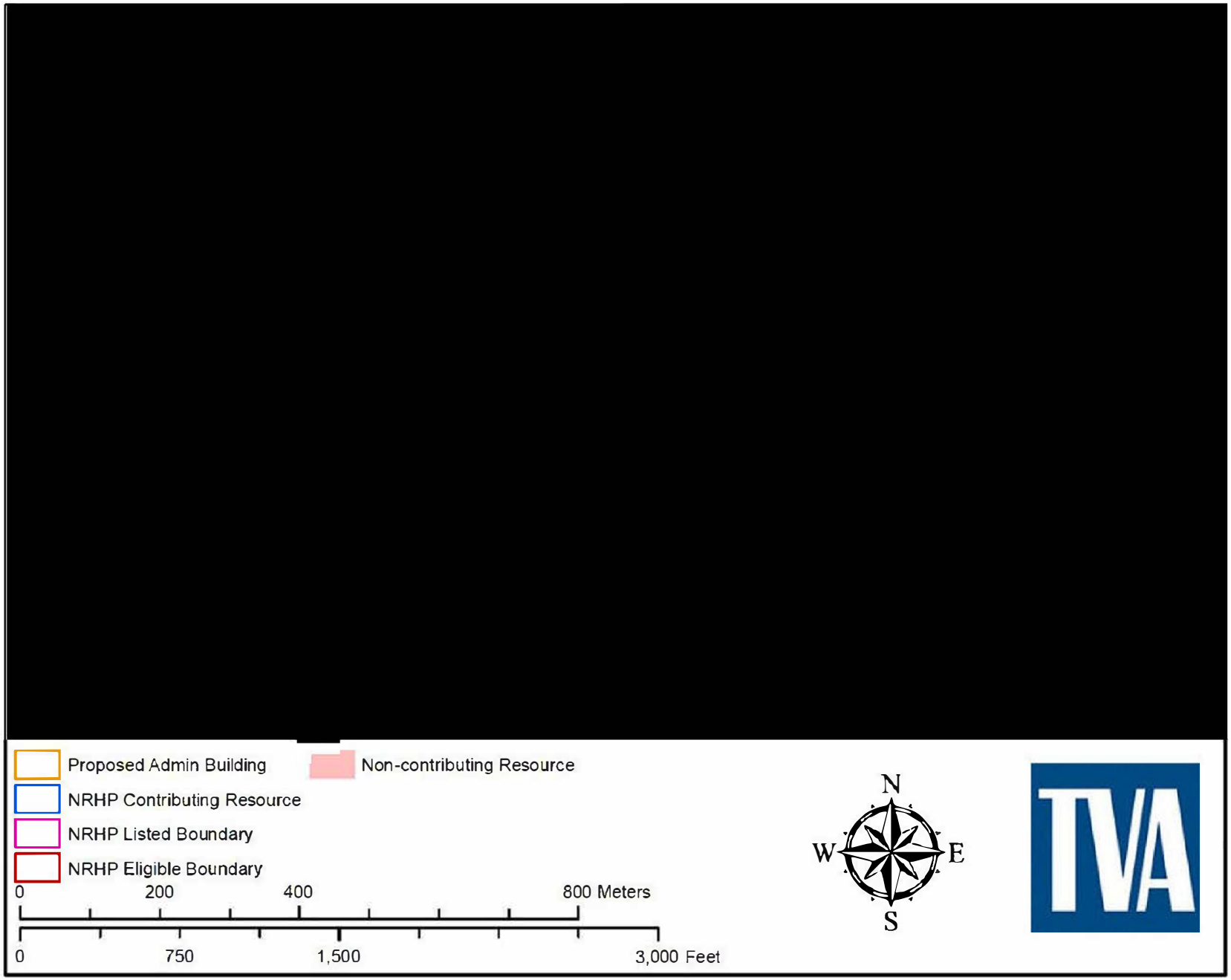
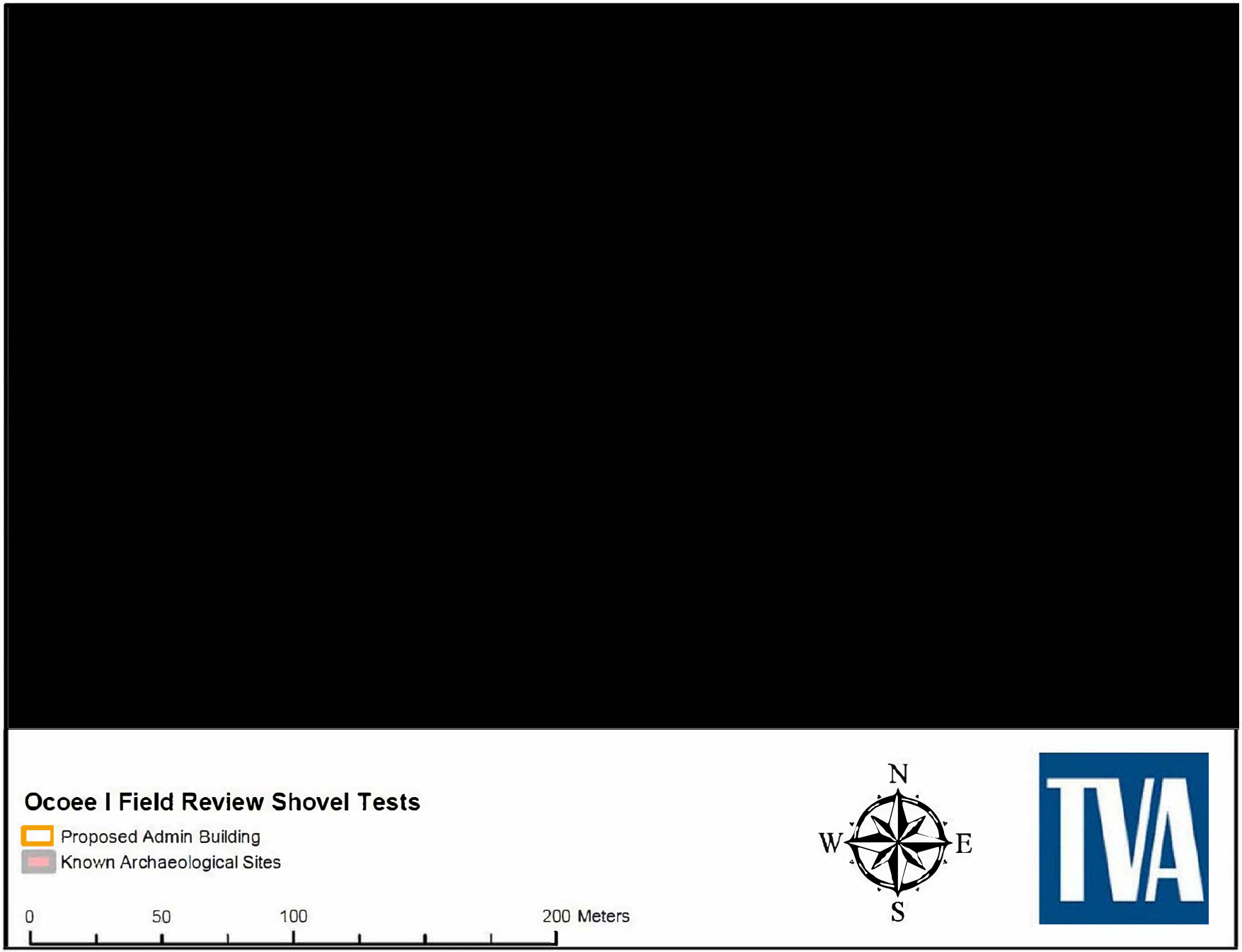
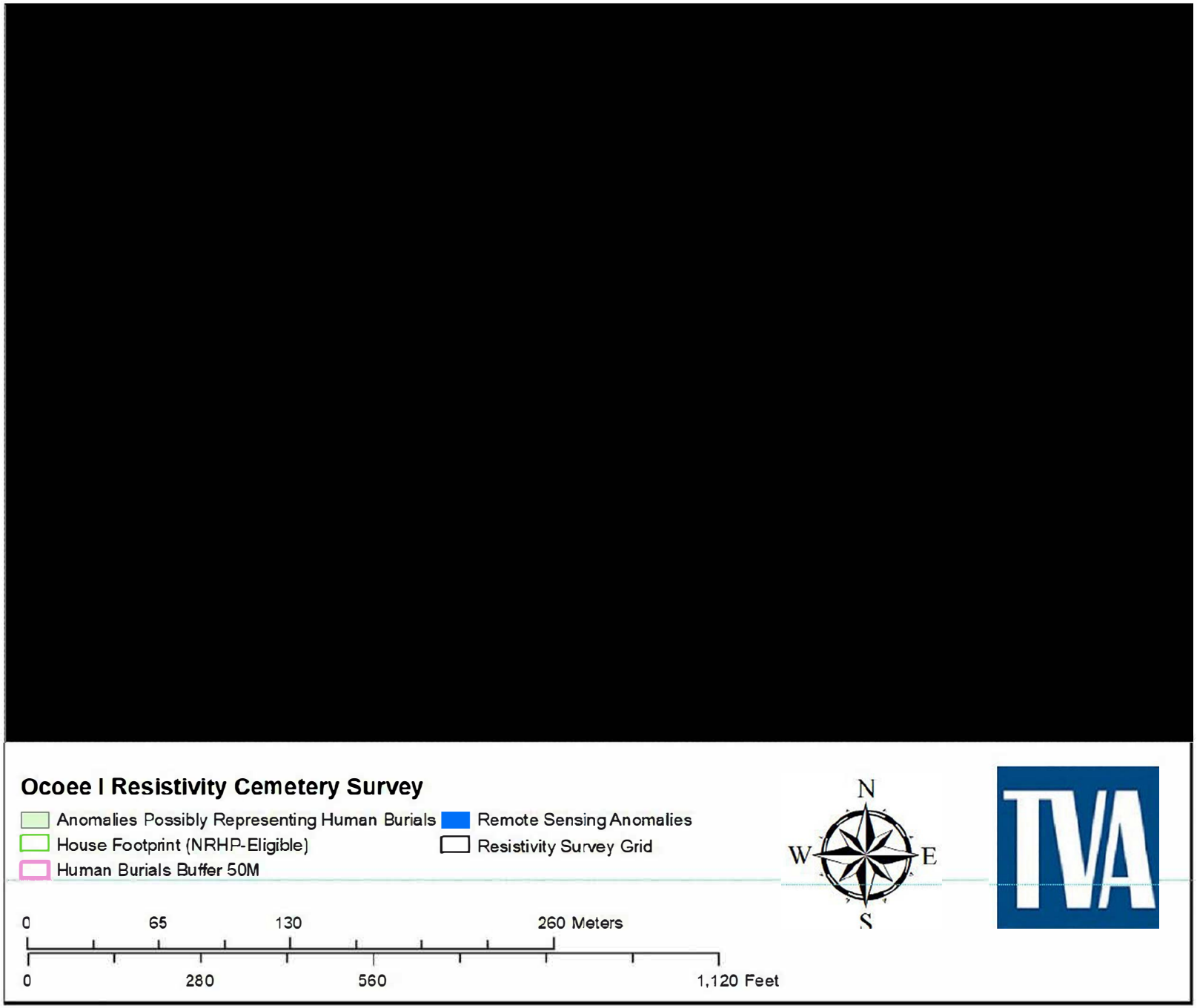


Redacted Figure 1. Satellite image showing the location of the APE (in red) within the recommended NRHP boundary for O1H. Basemap: ESRI.



Redacted Figure 2. Field review shovel test probe locations. Basemap: ESRI



Redacted Figure 3. Satellite image depicting the resistivity cemetery survey grid, findings, and recommended buffer. Basemap: ESRI