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CONTINUED OPERATION OF JOHNSONVILLE COMBUSTION TURBINE UNITS 1 THROUGH 10 DRAFT ENVIRONMENTAL ASSESSMENT

Humphreys County, Tennessee

EAXX-455-00-000-17407 42293

PREPARED BY:
TENNESSEE VALLEY AUTHORITY
CHATTANOOGA, TENNESSEE

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To request further information, contact:

Amanda Pagels
NEPA Compliance
Tennessee Valley Authority
1101 Market Street
Chattanooga, Tennessee 37402
E-mail: nepa@tva.gov

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SYMBOLS, ACRONYMS, AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
APE	Area of Potential Effect
BMP	Best Management Practice
CAA	Clean Air Act
CCR	Coal Combustion Residuals
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide equivalent
CT	Combustion Turbine
dB	Decibel(s)
dBA	A-weighted decibel
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
EO	Executive Order
EPCRA	Emergency Planning and Community Right to Know Act
ESA	Endangered Species Act
ESV	Ecological Screening Value
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gases
HAPS	Hazardous air pollutants
HUD	U.S. Department of Housing and Urban Development
Hz	Hertz
IPaC	Information for Planning and Consultation
IRP	Integrated Resource Plan
IWG	Interagency Working Group
JOF	Johnsonville Fossil Plant
Ldn	Day-night average sound level
Leq	Equivalent continuous sound level
MMBtu	Million British Thermal Units
MW	Megawatt
NAAQS	National Ambient Air Quality Standards
NEP	Non-essential experimental population
NEPA	National Environmental Policy Act
NO_2	Nitrogen dioxide
NOx	Nitrogen oxides
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System

OSHA	Occupational Safety and Health Administration
Pb	Lead
PM	Particulate Matter
PSD	Prevention of Significant Deterioration Permit
RCRA	Resource Conservation and Recovery Act
SO_2	Sulphur dioxide
SPCC	Spill Prevention, Control and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
TDEC	Tennessee Department of Environment and Conservation
TMSP	Tennessee Multi-Sector General Permit
tpy	Tons per year
TRM	Tennessee river mile
TSCA	Toxic Substances Control Act
TVA	Tennessee Valley Authority
TWRA	Tennessee Wildlife Resource Agency
U.S.	United States
US	U.S. Highway
USCB	U.S. Census Bureau
USEIA	U.S. Energy Information Administration
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

CHAPTER 1 – PURPOSE AND NEED FOR ACTION

The Tennessee Valley Authority (TVA) has prepared this Environmental Assessment (EA) to evaluate the potential impacts associated with the proposal to continue operation of ten combustion turbine (CT) units located at the Johnsonville Reservation in Humphreys County, Tennessee (Figure 1-1). The proposed action involves continuing to operate these CT units to enhance system stability and reliability during peak demand periods, particularly those driven by extreme weather events such as heat waves and winter storms.

As outlined in the final EAs for the Paradise and Colbert Combustion Turbine Plants and the Johnsonville Aeroderivative Combustion Turbines Project, Johnsonville CT (CT) Units 1 through 16 were slated for retirement and decommissioning after all the new aeroderivative CT units became fully operational. TVA is now proposing the continued operation of CT units 1 through 10 to support the region's sustained load growth and reinforce the resilience of the TVA power grid. By keeping these ten units in operation, TVA would preserve an estimated 650 MW of needed dispatchable capacity.

1.1 Purpose and Need

The purpose of this EA is to evaluate the potential environmental impacts of continuing to operate up to ten CT units, herein referred to as CT Units 1 through 10, at the Johnsonville Reservation. These units were previously scheduled to be retired following the commissioning of ten new aeroderivative CT units; however, evolving system demands have prompted a reassessment of the retirement decision.

The need for this action is driven by sustained regional load growth, increased system stress during peak demand periods and the strategic imperative to maintain grid reliability using existing infrastructure. Continuing to operate CT Units 1 through 10 would provide flexible, dispatchable capacity critical for supporting TVA's power system, particularly during extreme weather events and periods of high demand, supporting TVA's mission to deliver reliable, affordable and resilient energy in alignment with the 2019 IRP.

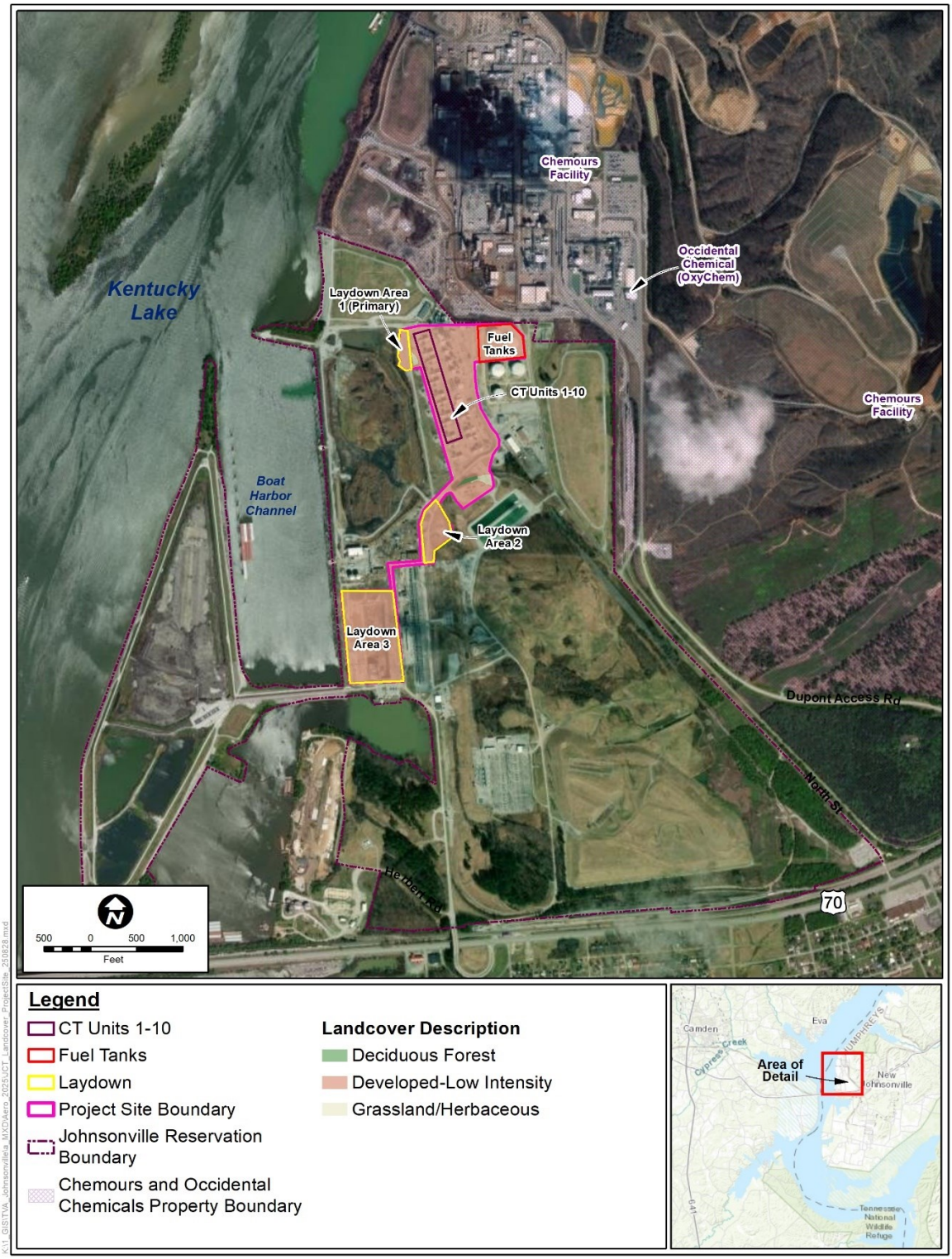

Figure 01. The Johnsonville Combustion Turbine Units 1-10 located in Humphreys County, Tennessee

1.2 Decision to be Made

This EA has been prepared in accordance with NEPA to inform TVA decision-makers and the public of the potential environmental impacts associated with the proposed continued operation of CT Units 1 through 10 at the Johnsonville Reservation. This EA provides a comprehensive analysis of the environmental consequences of the proposed Action Alternative and the No Action Alternative.

TVA must determine whether to proceed with continuing to operate the CT units 1 through 10, which were previously scheduled for retirement, or to continue the current decommissioning plan. This EA will assist in determining whether the proposed action would result in significant environmental impacts that warrant the preparation of an EIS, or whether a Finding of No Significant Impact (FONSI) may be issued in accordance with NEPA and TVA's environmental review procedures.

1.3 Background

1.3.1 Integrated Resource Plan

TVA's core statutory objectives under the TVA Act are to provide the people of the Tennessee Valley with low-cost and reliable electricity, environmental stewardship and a prosperous economy (16 United States Code [U.S.C.] Part 831 et seq.). Consistent with, and as mandated by the Energy Policy Act of 1992, TVA engages in a long-range, "least-cost planning" process that "evaluates the full range of existing and incremental resources (including new power supplies, energy conservation and efficiency, and renewable energy resources) in order to provide adequate and reliable service to electric customers of [TVA] at the lowest system cost" (16 U.S.C. Part 831m-1(b)(1)).

TVA generates and procures electricity from a diversified energy portfolio that includes hydroelectric, fossil fuels, nuclear power and renewables. In June 2019, TVA published its Integrated Resource Plan (IRP) and the associated Environmental Impact Statement (EIS), developed with input from stakeholders and the public. The IRP outlines TVA's strategic approach to meeting projected electricity demand over a 20-year planning horizon (TVA 2019a, 2019b).

The 2019 IRP evaluated six plausible future scenarios and five strategic response frameworks, identifying a range of potential resource additions and retirements across TVA's approximately 80,000-square-mile service area, which spans most of Tennessee and portions of Alabama, Georgia, Kentucky, Mississippi, North Carolina and Virginia. The IRP identified the target power supply mix, which includes the potential addition of up to 5,200 megawatts (MW) of simple-cycle natural gas capacity by 2028.

1.3.2 Load Growth

Since the 2019 IRP publication, TVA has experienced a significant increase in electricity demand across its service territory. Population growth within the TVA power service area has risen by approximately 1.5 percent since 2019. Also in 2019, projections indicated continued robust growth in annual electricity demand for the foreseeable future. Current system modeling, which accounts for increased residential immigration and commercial and industrial development, indicates a need for additional generation capacity to maintain adequate operating reserves and ensure system reliability. Peaking resources are essential for meeting short-duration, high-demand periods, such as those occurring during extreme summer and winter weather events. These units provide rapid-start capability and operational flexibility,

making them well suited to support the integration of variable renewable energy sources, which are inherently intermittent and less predictable.

The inclusion of natural gas-fired and dual-fuel CTs in TVA's target power supply mix is driven by multiple operational and economic factors. These include the need for highly reliable generation with technological characteristics that equip operators to start and stop the resource independent of time of day or time of year, also known as on-demand capacity. CTs also accommodate the integration of solar resources, hedge against fluctuating commodity prices, maintain cost competitiveness relative to alternative technologies, and support transmission system stability and power quality (TVA 2019a). Natural gas-fired CT Units offer year-round operational flexibility and can be dispatched to meet variable system loads. Their ability to provide firm, on-demand capacity is critical for balancing the variability of renewable generation and for supporting TVA's transmission system grid reliability. Additionally, these units contribute to transmission system support by providing voltage regulation, stability and other ancillary services necessary for maintaining overall power system performance.

Continuing to operate CT Units 1 through 10 offers a technically sound and economically prudent alternative. Units 11 through 16 have been retired and have begun the decommissioning process. Additionally, Units 17 through 19 continue to operate for power generation, and Unit 20 was converted to generate steam for a nearby chemical facility.

1.4 Related Environmental Reviews and Relevant Studies

Various related environmental documents and materials were reviewed during the preparation of this EA and are listed below. The contents of these documents helped to support the proposed action and/or describe the affected environment and are incorporated by reference as appropriate.

- 2019 Integrated Resource Plan (TVA 2019a) – TVA's 2019 IRP provides direction for how TVA would meet the long-term energy needs of the Tennessee Valley region while fulfilling its mission of serving the Tennessee Valley by providing low-cost reliable power, environmental stewardship, and economic development.

- 2019 Integrated Resource Plan, EIS (TVA 2019b) – This EIS accompanied the 2019 IRP and assessed the natural, cultural, and socioeconomic impacts associated with the implementation of the IRP. The proposed actions evaluated in this EA support the target power supply mix, as described in the IRP and accompanying EIS.

- Combustion Turbine Modernization Study (TVA 2020) – This study evaluated the condition of TVA's current CT Units and formed recommendations for investments to ensure a reliable peaking fleet into the future.

- Paradise and Colbert Combustion Turbine Plants EA (TVA 2021a) – This EA assessed the construction and operation of three new natural-gas fueled frame CT Units at TVA's Paradise Reservation, and three CT Units at the Colbert Reservation, the retirement of CT Units 1through16 and all but a few of CT Units 1-20 at the Allen Reservation.

- Johnsonville Aeroderivative Combustion Turbines Project EA (TVA 2022a) – This EA assessed the addition of ten natural-gas fired Aero CT Units at the Johnsonville site for commercial operation.

1.5 Scoping Process and Public Involvement

The draft EA was released for a 15-day public comment period on September 16, 2025, and posted on TVA's website (http://tva.com/nepa). Comments on the draft EA will be accepted through October 2, 2025. To ensure broad public awareness, TVA has published notices of availability in newspapers serving the Humphreys County area including The Camden Chronicle (Camden, TN) and The News Democrat (Waverly, TN).

1.6 Necessary Permits or Licenses

TVA has obtained all necessary permits, licenses, and approvals required to implement the Action Alternative in compliance with applicable federal, state, and local regulations.

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CHAPTER 2 - ALTERNATIVES

This chapter presents a detailed analysis of the reasonable alternatives considered for the proposed action. The purpose of this analysis is to ensure that the decision-making process is informed by a range of options that meet the project's purpose and need while minimizing potential environmental impacts.

This chapter includes a description of the Proposed Action and the No Action Alternative, which serves as a baseline for evaluating the potential effects of the proposed action. The alternatives presented in this chapter reflect input from agency coordination, public involvement, and technical studies. Each alternative is evaluated for its ability to meet the project objectives, comply with applicable regulations, and avoid or minimize adverse environmental effects.

The existing transmission infrastructure at the Johnsonville Reservation supports continued operation and is not included in this analysis. TVA conducts studies as part of its standard planning and operational procedures to determine whether transmission system improvements are necessary to support generation resources. Should any transmission system upgrades be identified as a result of future studies, TVA would conduct separate environmental reviews in accordance with the National Environmental Policy Act (NEPA) and other applicable federal and state regulations prior to implementation.

2.1 Description of Alternatives

In accordance with NEPA and TVA NEPA procedures, this EA evaluates a reasonable range of alternatives to meet the purpose and need for the proposed action. The alternatives considered include the No Action Alternative and the proposed Action Alternative, continued operation of CT Units 1 through 10. TVA has also identified a preferred alternative based on system needs, environmental considerations and alignment with long-term planning objectives.

2.1.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would discontinue operation of CT Units 1 through 10 at the Johnsonville Reservation. These units would proceed toward decommissioning, consistent with the action evaluated in the Paradise and Colbert Combustion Turbine Plants EA and the associated FONSI (TVA 2021a). This alternative would result in the loss of up to 650 MW of dispatchable generation capacity, reducing TVA's ability to respond to peak demand events and potentially requiring the development of alternative generation resources or procurement from external sources. While this alternative does not meet the stated purpose and need, it is retained for comparative analysis as required under NEPA.

2.1.2 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10 (Proposed Action)

Under Alternative B, TVA would continue to operate CT Units 1 through 10 at the Johnsonville Reservation to continue the ability to use 650 MW of flexible, dispatchable capacity critical for supporting TVA's power system, particularly during extreme weather events and periods of high demand.

2.2 Comparison of Alternatives

This section provides a comparative analysis of the alternatives considered in detail, including the No Action Alternative and the Proposed Action. The comparison is based on each

alternative's ability to meet the project's purpose and need, as well as its potential environmental impacts across key resource areas.

The intent of this comparison is to support informed decision-making by clearly presenting the trade-offs among alternatives. The analysis considers both beneficial and adverse effects, as well as the extent to which each alternative avoids or minimizes environmental harm. Where applicable, the comparison also addresses regulatory compliance, technical feasibility, and public and agency input.

Table 2-1 summarizes the key differences among the alternatives, followed by a narrative discussion that highlights the distinguishing features and environmental consequences of each.**Table 2-1. Summary and Comparison of Alternatives by Resource Area**

Resource Area	Impacts From No Action Alternative	Impacts From Proposed Action Alternative
Air quality	Minor beneficial impacts	Minor Impacts on regional air quality
Climate Change and Greenhouse Gas Emissions	Minor beneficial impacts	Minor impacts
Land Use	No impact	No impacts
Prime Farmland	No Impacts	No Impacts
Geology and Soils	Minor impacts	Minor impacts
Noise	Minor impacts	Minor impacts
Visual Resources	No impacts	No impacts
Socioeconomics	Minor l impacts	Minor impacts
Groundwater and Surface Water	Minor impacts	Minor impacts
Wildlife	No impacts	No impacts
Vegetation	No impacts	No impacts
Wetlands	No impacts	No impacts
Aquatic Resources	Minor impacts	Minor impacts
Floodplains	No impacts	No impacts
Navigation	No impacts	No impacts
Transportation	Minor impacts	Minor impacts
Solid & Hazardous Waste	Minor impacts	Minor impacts
Recreation	No impacts	No impacts
Managed and Natural Area	No impacts	No impacts
Cultural and Historic	No impacts	No impacts
Public Health and Safety	Minor impacts	Minor impacts

Ongoing operations of adjacent industrial facilities, including emissions from local vehicles and related impacts to air quality, including greenhouse gas (GHG) emissions, are considered part of the existing environmental setting and are not expected to increase in the foreseeable future.

2.3 The Preferred Alternative

TVA has identified Alternative B, continued operation of CT Units 1 through 10 at the Johnsonville Reservation, as the preferred alternative. This alternative best meets the purpose and need for the proposed action by preserving approximately 650 MW of dispatchable generation capacity, which is critical for maintaining system reliability during periods of peak demand.

The preferred alternative aligns with TVA's 2019 IRP, which emphasizes the importance of maintaining a flexible, resilient, and diversified generation portfolio to support growing energy needs and the integration of renewable resources. Continuing operation of the existing CT units allows TVA to leverage existing infrastructure, minimize environmental disturbance, and avoid the higher costs and longer lead times associated with constructing new generation facilities.

By continuing to operate CT Units 1 through 10 at the Johnsonville Reservation, TVA can continue to fulfill its statutory mission to provide reliable, affordable energy to the people of the Tennessee Valley, while remaining consistent with its long-term strategic and environmental planning objectives.

CHAPTER 3 – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This EA evaluates the potential environmental impacts of the proposed action by examining the existing environmental conditions within the Project Area. The analysis considers a range of resource categories consistent with TVA's NEPA procedures and applicable federal guidance. Resources evaluated include land use, geology and soil, water resources (including surface water, groundwater and wetlands), air quality, climate, noise, ecological resources (including vegetation, wildlife, aquatic resources and federally and state listed species), cultural and historic resources, socioeconomics, transportation, visual resources, and human health and safety. Each resource area is assessed for potential direct, indirect, and cumulative impacts resulting from the implementation of the continued operation of CT Units 1 through 10. Resources not present or not expected to be affected by the proposed Action Alternative are briefly discussed and dismissed with appropriate justification.

3.1 Resources Not Impacted

Based on TVA's preliminary review and site-specific conditions, the following environmental resource areas were determined to be either absent from the Project Area or not subject to potential impacts from the proposed action. Therefore, these resources are not carried forward for detailed analysis in this EA. This determination is based on the nature of the proposed action, which is confined to previously disturbed areas within the existing Johnsonville Reservation, and the absence of plausible impact pathways. Justifications for the exclusion of each resource are provided below and are consistent with TVA's NEPA procedures and applicable federal guidance.

- **Land Use** – All proposed activities would occur within the existing Johnsonville Reservation on previously disturbed industrial land. No land use changes or conflicts with existing zoning or planning designations are anticipated. Therefore, land use is not analyzed further.

- **Prime Farmland** – There are no prime farmland soils mapped within the temporary and permanent use areas. Therefore, there would be no impacts to prime farmland soils, and this resource is not evaluated any further in this EA. Accordingly, completion of Form AD 1006 and consultation on prime farmlands is not required (Farmland Protection Policy Act, 7 United States Code [USC] 4201).

- **Geology and Soils** – The proposed action would be implemented entirely within previously disturbed areas composed of artificial fill. No excavation or subsurface disturbance is anticipated that would alter geologic conditions or increase erosion or sedimentation. Therefore, no impacts on geology or soils are expected and these resources are not further studied.

- **Vegetation** – The Project Area is located within a heavily developed industrial site with a long history of disturbance. Any existing vegetation is limited, routinely managed, and of low ecological value. No clearing or alteration of vegetated areas is proposed. Therefore, no impacts to vegetation are anticipated. Land cover associated with the proposed project area is depicted in Figure 1 of Appendix A-1.

- **Wetlands –** A review of National Wetlands Inventory data, recent aerial imagery (April 2023), and field surveys conducted in 2022 confirmed the absence of jurisdictional

wetlands within the Project Area. The site is fully developed and lacks hydrologic or vegetative indicators of wetland presence. Figure A-2 in Appendix A depicts the wetland locations near the project area. The proposed action is consistent with Executive Order (EO) 11990 (Protection of Wetlands), and no impacts to wetlands are anticipated. Therefore, this resource is not studied further is this EA.

- **Floodplains –** The Project Area is located outside the 100-year and 500-year floodplains, as confirmed by Federal Emergency Management Agency Flood Insurance Rate Map Panel 47085C0140D (effective September 25, 2009). Ground elevations within the Project Area exceed the base flood elevation of 375.0 feet (NGVD29). The proposed action is consistent with EO 11988 (Floodplain Management), and no direct impacts to floodplains and their natural and beneficial values are anticipated. Any indirect impacts would be minimized by adhering to standard BMPs.

- **Visual Resources –** The proposed action would not introduce new visual elements inconsistent with the existing industrial character of the Johnsonville Reservation. Views of the site are limited to on-site personnel, and the nearest off-site receptors are located several miles away. No adverse visual impacts are anticipated.

- **Cultural and Historic Resources –** The Area of Potential Effects lies entirely within previously disturbed portions of the Johnsonville Reservation. Prior cultural resource surveys and Section 106 consultations with the Tennessee State Historic Preservation Office found no eligible or listed historic properties within the Area of Potential Effects. No ground disturbance or visual alterations are proposed that would affect historic properties. Therefore, no impacts are anticipated, and these resources are not studied further. A copy of past Section 106 coordination efforts can be found in Appendix C.

- **Recreation –** No public parks, trails, or recreational facilities are located within or adjacent to the Project Area. Given the industrial setting and the temporary, localized nature of the proposed action, no impacts to recreational resources are anticipated.

- **Navigation –** The project area is located entirely on land within the Johnsonville Reservation and does not involve any in-water work or modifications to navigable waterways. Therefore, no impacts to navigation are anticipated and this resource is not studied in further detail.

- **Managed and Natural Areas-** The Project has no managed or natural areas within a 0.5-mile radius of the proposed project area or within the proposed project area. Therefore, no impacts are anticipated, and these resources are not studied further in this EA.

3.2 Resources Potentially Impacted and Further Studied

In accordance with NEPA, TVA evaluated the potential environmental consequences of the Proposed action and reasonable alternatives that are technically and economically feasible and meet the stated purpose and need. TVA determined that the following environmental resource areas may be affected and are therefore carried forward for detailed analysis in this EA:

- **Air Quality** – The continued operation of CT Units 1 through 10 are expected to be minor and would not differ from the existing usage. Impacts are assessed in relation to compliance with current permit terms, potential emissions and compliance with Clean Air Act, state regulations and any applicable permitting requirements under these rules.

- **Climate Change and Greenhouse Gases** – The EA considers the potential contribution of the proposed action to climate change from the continued operation of CT Units 1 through 10. GHG emissions are quantified and assessed in the context of cumulative regional and national emissions.

- **Noise** – Short-term increases in ambient noise levels may occur during decommissioning activities. Operational noise levels are expected to remain consistent with existing conditions. The EA evaluates potential impacts to nearby sensitive receptors, if present, and compliance with applicable noise thresholds.

- **Socioeconomics** – The proposed action may result in minor, localized economic benefits through the continued operation of CT Units 1 through 10. The EA also considers potential impacts on community infrastructure and services.

- **Groundwater** – Operational activities may affect water quality through spills or stormwater runoff. Best management practices (BMPs) are in place to minimize any impacts. .

- **Aquatic Resources Ecology and Surface Water** – The EA assesses potential indirect impacts to aquatic habitats in nearby waterbodies, including sedimentation or runoff from operation. No in-water work is proposed, but BMPs are considered to minimize potential downstream effects. The EA also evaluates potential impacts to surface water runoff and stormwater management resources in relation to compliance with the Clean Water Act and state regulations

- **Wildlife** – Although the Project Area is developed, potential effects to adjacent terrestrial habitats, including protected species, are assessed in coordination with applicable wildlife agencies.

- **Solid and Hazardous Waste** – The proposed action may generate limited quantities of non-hazardous and hazardous waste. Waste management practices are evaluated for compliance with the Resource Conservation and Recovery Act (RCRA) and TVA protocols.

- **Public Health and Safety** – The EA evaluates potential risks to worker and public health and safety during operation. This includes adherence to Occupational Safety and Health Administration (OSHA) standards, TVA safety procedures, and emergency response protocols.

3.3 Air Quality

The Clean Air Act (CAA) (as amended) is the comprehensive law that protects air quality by regulating emissions of air pollutants from stationary sources (e.g., power plants) and mobile sources (e.g., automobiles). It requires the United States (U.S.) Environmental Protection Agency (EPA) to establish the National Ambient Air Quality Standards (NAAQS) and directs the states to develop state implementation plans to achieve these standards. This is primarily accomplished through permitting programs that establish limits for emissions of air pollutants. The CAA also requires EPA to set standards for emissions of hazardous air pollutants (HAPs).

NAAQS have been established to protect the public health and welfare with respect to six criteria air pollutants: carbon monoxide (CO), nitrogen dioxide (NO2), ozone, particulate matter (PM), sulfur dioxide (SO2) and lead. Primary standards protect public health, while secondary standards protect public welfare (e.g., visibility, crops, forests, soils and materials) (EPA 2025a).

In accordance with the CAA Amendments of 1990, all counties are designated with respect to compliance, or degree of noncompliance, with NAAQS. These designations include:

- Attainment – any area where air quality achieves the NAAQS.
- Nonattainment – any area with air quality worse than the NAAQS.
- Unclassified – not enough data to determine attainment status.

The TVA Johnsonville Reservation is in Humphreys County, which is designated as unclassified attainment for all criteria pollutants based on review of 40 CFR 81.343. A review of EPA's 2023 and 2024 Design Value Report indicated no exceedances of NAAQS for any criteria pollutant within Humphreys County.

The Johnsonville Reservation has a Title V/major source permit under the requirements of Title V of the CAA and the federal regulations promulgated in 40 CFR Part 70. The permit was issued in accordance with Rule 1200-3-9-.02(11) of the Tennessee Air Pollution Control Regulations.

3.3.1 Pollutants and Air Quality Concerns

Nitrogen oxides (NOx) are a group of highly reactive gases that contain varying amounts of nitrogen and oxygen (e.g., NO, NO_2). NOx emissions contribute to ground-level ozone, fine pm, regional haze, acid deposition and nitrogen saturation. Natural sources of NOx include lightning, forest fires and microbial activity; major sources of human-produced NOx emissions include motor vehicles, electric utilities, industrial boilers, nitrogen fertilizers and agricultural burning (EPA 1999).

Sulfur oxides are compounds of sulfur and oxygen molecules. The predominant form found in the atmosphere is SO_2. Most SO_2 is produced from the burning of fossil fuels (coal and oil), as well as petroleum refining, cement manufacturing and metals processing. In addition, geothermic activity, such as volcanoes and hot springs, can be a significant natural source of SO_2 emissions (World Bank Group 1998).

HAPs, commonly referred to as air toxics, are pollutants that are known or suspected to cause cancer or other serious health effects or adverse environmental effects. The CAA identifies

188 pollutants as HAPs (EPA 2024a). Most HAPs are emitted by human activities, including mobile sources (motor vehicles), stationary sources (factories, refineries and power plants) and indoor sources (building materials and activities such as dry cleaning).

States are required to establish an air operating program under Title V of the CAA. Regulations to implement this operating program, 40 CFR Part 70, require each major source of air pollutant emissions to obtain an operating permit, typically issued by the state or local environmental agency, that consolidates all of the air pollution control requirements into a single, comprehensive document covering all aspects of air pollution activities at a facility. In attainment/unclassified areas, Title V major source thresholds, the level of potential emissions that require sources to obtain a Title V permit, are 100 tons per year (tpy) for each criteria pollutant, 10 tpy for each individual HAP and 25 tpy for total HAPs (TVA 2014).

Sources that emit less than 10 tpy of a single HAP or less than 25 tpy of a combination of HAPs are referred to as area sources (EPA 2024a), as opposed to major sources. Emissions from individual area sources are relatively small. However, if occurring in heavily populated areas that contain a number of area sources, emissions can be of concern.

3.3.2 Characterization of Existing Site Operations

Several emission sources at the Johnsonville Reservation, including the units proposed for continued operation, are operating under a Title V/major source permit. There are also ten Aeroderivative CT units and a black-start generator currently operating under a Prevention of Significant Deterioration (PSD) Construction permit until major modification to the Title V permit is issued by the Tennessee Department of Environment and Conservation (TDEC) to include them. The Johnsonville Reservation includes the following permitted emission sources:

- 10 GE 7B dual-fuel (No. 2 fuel oil or natural gas fired) simple cycle CT units
- Three GE 7EA dual-fuel (No. 2 fuel oil or natural gas fired) simple cycle CT units
- Four Natural gas –fired heaters
- One dual-fuel (No. 2 fuel oil or natural gas fired) GE 7EA cogeneration unit (i.e., CT with a Heat Recovery Steam Generator)
- Two natural gas-fired auxiliary boilers
- Ten GE LM6000 (Aeroderivative) simple-cycle natural gas-fired CT units
- One 2,952 horsepower natural gas-fired black-start generator
- Coal handling facility (vestigial and dormant process associated with the razed coal plant)
- Ash disposal area (vestigial and dormant process associated with the razed coal plant)

The ten GE 7B CT units noted in the first bullet represent the subject of the alternatives and are referenced as CT Units 1 through 10. Each unit has a rated heat input capacity of 928 Million British Thermal Units (MMBtu)/hour, for a total of 9,280 MMBtu/hour. Based on Minor Modification #1 of Title V Permit No. 572833, issued March 14, 2025, operations for the ten

GE 7B simple cycle CT units are limited to 2,100.21 gigawatt-hours per year. The Johnsonville Reservation currently operates below the limit of the permit with ample compliance margin.

3.3.3 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not continue to operate CT Units 1 through 10. These units would proceed with decommissioning as previously described in the Paradise and Colbert Combustion Turbine EA (TVA 2021a).

Alternative A would not meet the purpose and need of the project and would not provide backup generation during high peak times. Without the additional generation capacity of 650 MW, TVA would need to consider other energy sources to meet the anticipated electrical demand on TVA's system. If alternative energy sources are secured to replace the equivalent generation of the CT Units 1 through 10, an evaluation of net change in air emissions would be dependent on the source of generation and fuel and technology type from an emissions standpoint. As such, impacts to air quality from Alternative A are minor.

3.3.4 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under Alternative B, CT Units 1 through 10 would continue operation to ensure full functionality and ability to meet peak energy demands. Overall, effects on air quality from these proposed activities would be minor and localized to the project area and would have limited effects outside of the Johnsonville Reservation.

As discussed previously, CT Units 1 through 10 currently operate under TVA Johnsonville CT Plant Title V Permit No. 572833. Actual criteria pollutant and HAP emissions from 2024 operations of CT Units 1 through 10 are summarized in Table 3-1.

Table 3-1. Actual Annual Emissions – Johnsonville Combustion Turbine Units1 through 10 (2024)

Pollutant	2024 Emissions (tons/year)
CO	4.63
NOx	73.5
SO_2	0.104
Filterable PM	1.32
PM10	2.15
PM2.5	2.15
VOC	0.387
Pb	0.0014
Total HAPs	0.08

Key: CO = carbon monoxide; NOx = nitrogen oxides; Pb = lead; PM = particulate matter; PM2.5 = particulate matter less than 10 microns in diameter; PM10 = particulate matter less than 10 microns in diameter; SO_2 = sulfur dioxide; VOC = volatile organic compound; HAPs = hazardous air pollutants

Since the operation of the CT Units is ongoing without any changes to their configuration or output, the associated emissions are expected to remain consistent with current levels. As a result, there would be no increase in pollutant release, and any impacts to regional air quality would continue to be compliant with the applicable regulations. This continued operation under existing conditions supports the conclusion that no significant changes to air quality are anticipated.

3.4 Climate Change and Greenhouse Gas Emissions

Earth's natural warming process is known as the greenhouse effect. The Earth's atmosphere consists of a variety of gases that regulate the Earth's temperature by trapping solar energy. These gases, including carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride and sulfur hexafluoride, are cumulatively referred to as greenhouse gases or GHGs because they trap heat like the glass of a greenhouse. Anthropogenic activities, which include the burning of fossil fuels to produce energy and deforestation, have contributed to elevated concentration of GHGs in the atmosphere since the Industrial Revolution. The release of GHGs into the atmosphere because of human activity has caused an increase in the average global temperature. While the increase in global temperature is known as global warming, the resulting change in a range of global weather patterns is known as climate change. The EPA defines climate change as "significant changes in average conditions—such as temperature, precipitation, wind patterns and other aspects of climate—that occur over years, decades, centuries, or longer" (EPA 2025b). These changes are influenced by a number of factors including oceanic processes, variations in solar radiation, plate tectonics, volcanic eruptions and anthropogenic activities.

Different GHGs can have different effects on the Earth's warming. Two key ways in which GHGs differ from each other are their ability to absorb energy (i.e., their radiative efficiency) and how long they remain in the atmosphere (i.e., their lifetime). Global Warming Potential is a measure of how effectively a specific GHG traps heat in the atmosphere compared to CO_2 and was developed to allow comparisons of the global warming impacts of different gases. The larger the global warming potential, the more that a given gas has the potential to contribute to increasing atmospheric temperatures relative to CO_2 over the same time period. Because the global warming potential that each GHG has varies, the common metric of carbon dioxide equivalent (CO_2e) is used to report a combined impact from all of the GHGs. This metric scales the global warming potential of each GHG to that of CO_2 with applicable global warming potentials applied pursuant to 40 CFR Part 98.

As described in TVA's 2019 IRP, TVA has one of the largest, most diverse and cleanest energy-generating systems in the nation. From 2005 to 2024, TVA has reduced carbon emissions (CO2e) from 116 million tons per year to 41.4 million tons per year by implementing new nuclear generation, coal plant retirements, flexible low-carbon gas, solar and wind generation and overall energy efficiencies (TVA 2024b). TVA continues to invest in assets to ensure safe, reliable and cleaner energy; consistent with the implementation of the 2019 IRP recommendations. As of 2024, TVA achieved a 64 percent reduction in its mass carbon emissions as compared to 2005 baseline standards.

3.4.1 Regulatory Requirements

Although there have been a series of recent administrative changes, no clear GHG emission reduction requirements have been established to date at the federal level for fossil-fired power plants. The national emissions reduction requirements established in the EPA's Clean Power Plan Rule were repealed on July 8, 2019 (84 FR 32250), and the targets in the Paris Climate Accord will be withdrawn in January of 2026. The emission reduction requirements

established by EPA in the Affordable Clean Energy Rule, which replaced the Clean Power Plan Rule, were ultimately repealed through the final 2024 GHG Rule.

In 2024, the Council on Environmental Quality (CEQ) updated its NEPA implementing regulations and required that agencies analyze, where applicable, climate change-related effects, including quantification of GHG emissions from the proposed action and alternatives. On January 20, 2025, President Trump issued a series of Presential Actions related to climate change and GHG. EO 14148, Initial Recissions of Harmful Executive Orders, revoked EOs 13990 and 14008. Additionally, EO 14154, Unleashing American Energy, directed CEQ to propose rescinding its NEPA implementing regulations. On February 25, 2025, CEQ published an Interim Final Rule to remove its NEPA regulations from the code of federal regulations; the rule became effective on April 11, 2025.

EO 14154 also disbanded the Interagency Working Group (IWG) on the Social Cost of GHG, which was established pursuant to EO 13990, as well as any guidance, instruction, recommendation and documents issued by the IWG. EO 14154 directs the Administrator of the EPA to issue guidance to address the Social Cost of Carbon, including consideration of eliminating the calculation from any Federal permitting or regulatory decision. Prior to further guidance issued by the EPA, EO 14154 directs agencies to "…ensure estimates to assess the value of changes in GHG emissions resulting from agency actions, including with respect to the consideration of domestic versus international effects and evaluating appropriate discount rates, are, to the extent permitted by law, consistent with the guidance contained in Office of Management and Budget Circular A-4 of September 17, 2003 (Regulatory Analysis)."

3.4.2 Environmental Consequences

The analysis of GHG emissions and climate change is fundamentally different in approach to the analysis of air quality (refer to Section 3.1 Air Quality). While air quality is linked to the geographical location and physical features within a particular airshed, GHG emissions have potential effects on a broader scale. Within the context of climate change, it is important to consider whether GHG emissions represent new emissions or are replacing or relocating existing GHG emissions from one location to another.

GHG emissions can include the release of stored GHGs from existing carbon stocks, such as consumption of oil reserves or removal of forests. Because the proposed action would not release GHGs from carbon stocks, the release of these types of emissions is not included in the analysis. There would be no natural sources of emissions and no measurable amount of carbon sequestration. This analysis focuses on the reasonable measurable emissions from fossil fuel consumption that could occur under each alternative.

3.4.3 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not continue the operation of CT Units 1 through 10. These units would proceed with decommissioning as previously described in the Paradise and Colbert Combustion Turbine EA (TVA 2021a).

Alternative A would not meet the purpose and need of the project and would not provide backup generation during peak demand. Without additional generating capacity, TVA would need to consider other energy sources to meet the anticipated electrical demand on TVA's system. Until such alternative energy sources are secured, there would be an incremental decrease of GHG emissions with the decommissioning of CT Units 1 through 10.

If alternative energy sources are secured to replace the equivalent generation capacity of CT Units 1 through 10, an evaluation of net change in GHG emissions would be dependent on the source of generation in terms of power technology. When such power originates from natural gas resources, there would generally be similar GHG emissions for Alternative A. Overall, the impact of Alternative A on climate change would be minor.

3.4.4 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under Alternative B, CT Units 1 through 10 would continue to operate to meet peak energy demands. As discussed in Section 3.2.1 Air Quality, these units are permitted under TVA Title V Permit No. 572833 and are currently in operation. Emissions of CO_2 from energy consumption are being used as an operational GHG emissions geographic comparison analysis, as that data is readily available and consistent across data sources.

The most recent data from the U.S. Energy Information Administration (USEIA) for total U.S. CO_2 emissions from energy consumption is 4,772 million metric tons/year (which is comprised of the residential, commercial, industrial, transportation, and electric power sectors)(USEIA 2024). The most recent data for TVA's emissions of CO_2 from its owned and operated units, including purchased power and Renewable Energy Credit retirement adjustments, which reduce CO_2 emissions, were 49 million metric tons (TVA 2024a). The actual CO_2 and CO_2e emissions from 2024 operations of CT Units 1 through 10 were 21,809 tons/yr and 21,832 tons/yr, respectively. This converts to 19,785 metric tons/year and 19,806 metric tons/year, respectively, or less than 0.0004% of total U.S. CO_2 emissions.

CT Units 1 through 10 have a generation restriction of 2,100.21 gigawatt-hours per year. Converting emission factors utilized in 2024 using an average heat rate for simple cycle turbines derived from U.S. Energy Information Administration (USEIA) (i.e., 9.788 MMBTU/MWh); TVA estimates that the maximum operational capacity yields CO_2 and CO_2e emissions of approximately 1.09 million metric tons/yr and 1.16 million metric tons/yr, respectively at the permitted 35 percent operational capacity factor.

Based on the permitted capacity of CT Units 1 through 10, the total potential CO_2e emissions would represent approximately 2.2 percent of TVA's system-wide CO_2e emissions for 2024. However, actual emissions from these units are anticipated to be substantially lower, likely contributing less than one percent of the total system-wide emissions based on actual emission data.

Since the operation of the CT Units is ongoing without any changes to their configuration or output, the associated emissions are expected to remain consistent with current levels. As a result, there would be no substantial increase in GHG emissions from the current baseline of operations. Therefore, overall impacts to climate change and greenhouse gas emissions from the continued operation of CT Units 1 through 10 would be minor.

3.5 Noise

Noise is generally defined as unwanted or excessive sound that can interfere with normal activities or diminish quality of life. Environmental noise is typically measured in decibels (dB), with adjustments made to reflect the sensitivity of the human ear (A-weighted decibels, or dBA). Common sources of environmental noise include transportation systems, industrial operations and construction activities. The Johnsonville Reservation is located within an industrial setting and existing ambient noise levels are primarily influenced by ongoing operations of CTs, auxiliary equipment and vehicular activity. The nearest noise-sensitive

receptors (e.g., residences, schools, or recreational areas) are located several miles from the Project Area, and intervening topography and vegetation further reduce potential noise propagation. TVA evaluates noise impacts in accordance with applicable federal guidelines, including those from EPA, Federal Highway Administration and OSHA standards for worker safety.

Sound is measured in dB using a logarithmic scale that reflects the intensity of pressure fluctuations in the air. The frequency, or pitch, of sound is measured in Hertz (Hz), with most environmental sounds comprising a range of frequencies. The human auditory system is generally sensitive to frequencies between 20 Hz and 20,000 Hz, with peak sensitivity between 500 Hz and 4,000 Hz. To account for the varying sensitivity of human hearing across frequencies, environmental noise is typically measured using dBA. This weighting de-emphasizes low-frequency sounds and emphasizes mid- to high-frequency sounds that are more perceptible to the human ear. The dBA scale is widely used in environmental assessments to evaluate potential impacts to human receptors. The equivalent continuous sound level (Leq) represents the average sound energy over a specified time period, providing a single value that accounts for fluctuating noise levels. The day-night average sound level (Ldn) is a 24-hour Leq that includes a 10-dBA penalty for nighttime hours (10:00 p.m. to 7:00 a.m.) to reflect increased human sensitivity to noise during typical sleeping hours.

There are no federal, state, or local quantitative noise standards applicable to the Johnsonville Reservation or its surrounding area. However, the EPA recommends an outdoor noise level of 55 dBA Ldn to protect public health and welfare in residential and other sensitive environments (EPA 1974). While not regulatory, this guideline is considered conservative and includes a margin of safety for sensitive populations. Additionally, the U.S. Department of Housing and Urban Development (HUD) considers an Ldn of 65 dBA or lower to be compatible with residential land use (HUD 1985). Common indoor and outdoor noise levels are provided in Table 3-2 for reference.

Table 3-2. Common Indoor and Outdoor Noise Levels

Noise Source	Sound Level (dBA)	Environment
Jet takeoff (at 100 feet)	140	Outdoor (extremely loud)
Jackhammer (at 50 feet)	100	Outdoor (very loud)
Heavy truck (at 50 feet)	85	Outdoor (loud)
Urban area, daytime traffic	70	Outdoor (moderate)
Conversational speech (at 3 feet)	60	Indoor (moderate)
Quiet office	50	Indoor (quiet)
Residential area, nighttime	45	Outdoor (quiet)
Library or soft whisper (at 3 feet)	30	Indoor (very quiet)
Rustling leaves	20	Outdoor (very quiet)
Threshold of human hearing	0	Indoor/Outdoor (inaudible)

Sources: U.S. Environmental Protection Agency (EPA 1974); Federal Highway Administration (FHWA 2016)

3.5.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not continue to operate CT Units 1 through 10. These units would proceed with decommissioning, as previously described in the Paradise and Colbert Combustion Turbine Plants EA (TVA 2021a). Because no operational activities would occur under this alternative, there would be no continued noise impacts beyond existing ambient conditions. Some temporary, minor noises would occur during the decommissioning of the CT units.

3.5.2 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under Alternative B, TVA would continue to operate CT Units 1 through 10. The Johnsonville Reservation is zoned for industrial use and is located along the east bank of Kentucky Reservoir. Existing noise sources in the area include barge traffic, rail operations, and routine industrial activity. The nearest sensitive noise receptors are residential areas in New Johnsonville, approximately 1.3 miles southeast of the project site, and Johnsonville State Historic Park, approximately 1.2 miles to the north. The park is separated from the facility by densely forested buffers, which serve as natural sound barriers and help attenuate potential noise transmission to public use areas.

The proposed action would not introduce any new operational noise sources. CT Units 1 through 10 would continue to operate under existing permits and within established acoustic parameters. As a result, operational noise levels would remain consistent with current conditions. No increase in noise is anticipated, and no new impacts to nearby receptors are expected. Therefore, noise-related impacts under Alternative B would be the same as those under current operations.

3.6 Socioeconomics

The study area for socioeconomic analysis is defined as any census block group that falls within a 5-mile radius of the Johnsonville Reservation and includes portions of Humphreys and Benton counties in western Tennessee. The state of Tennessee is the appropriate secondary geographic area of reference, and county demographic information is included for additional context. Comparisons at multiple spatial scales provide a more detailed characterization of populations that may be affected by the proposed actions. Demographic and economic characteristics of populations within the study area were assessed using the most recent U.S. Census Bureau (USCB) data available, including 2020 Decennial Census counts (USCB 2021a) for total population and racial characteristics, and 2019-2023 American Community Survey 5-year estimates (USCB 2023) for the remaining datasets.

3.6.1 Demographics and Population

Demographic and economic characteristics of the study area and of the secondary reference geographies are summarized in Table 3-3. The block groups that make up the study area have a combined resident population of 11,395. The study area is a mixture of rural and suburban development, with population centers limited to the city of New Johnsonville (resident population of 1,804) and the unincorporated communities of Eva and Denver. Since 2010, the study area population has remained relatively stable, experiencing a decline of less than 1 percent. During the same period, the population of Benton County declined by approximately 4 percent, while Humphreys County grew by approximately 2 percent, both in notable contrast to the growth rate of almost 9 percent experienced at the state level.

Table 3-3. Demographic and Socioeconomic Characteristics

	Study Area (Block Groups within 5-Mile Radius)	Humphreys County, Tennessee	Benton County, Tennessee	State of Tennessee
Population[1,2,3]				
Population, 2020	11,395	18,990	15,864	6,910,840
Population, 2010	11,485	18,538	16,489	6,346,105
Percent Change 2010-2020	-0.8%	2.4%	-3.8%	8.9%
Persons under 18 years, 2023	20.4%	20.1%	19.8%	21.9%
Persons 65 years and over, 2023	21.1%	21.2%	25.0%	17.7%
Racial Characteristics[1]				
Not Hispanic or Latino				
White alone, 2020 (a)	91.1%	90.1%	90.6%	70.9%
Black or African American, 2020 (a)	2.0%	2.6%	2.0%	15.7%
American Indian and Alaska Native, 2020 (a)	0.2%	0.2%	0.3%	0.2%
Asian, 2020 (a)	0.5%	0.3%	0.7%	1.9%
Native Hawaiian and Other Pacific Islander, 2020 (a)	0.0%	0.0%	0.0%	0.1%
Some Other Race alone, 2020 (a)	0.6%	0.4%	0.2%	0.3%
Two or More Races, 2020	3.8%	4.1%	3.8%	3.9%
Hispanic or Latino, 2020	1.9%	2.4%	2.4%	6.9%
Income and Employment[3]				
Median household income, 2023	$ 54,885	$59,333	$50,435	$67,097
Persons below poverty level, 2023	16.0%	14.7%	17.6%	13.8%
Persons below low-income threshold, 2023	32.0%	36.3%	44.7%	34.9%
Percent Unemployed, 2023	4.0%	3.1%	3.9%	3.3%

(a) Includes persons reporting only one race.
(b) Low-income threshold is defined as two times the poverty level
(c) Sources: [1]U.S. Census Bureau (USCB) 2021a; [2]USCB 2011; [3]USCB 2023

Approximately 86 percent of the population within the study area is white. The largest single minority groups in the study area are Black or African American and Hispanic or Latino, each representing 2 percent of the population, while persons who identified as two or more races represent 4 percent of the population. There are also small numbers who are Asian, American

Indian and Alaska Native, or who identify as some other race. Minority percentages in the study area are generally comparable to those of the surrounding counties and somewhat lower than those of the state of Tennessee (Table 3-3). Minority populations were identified with the following criteria.

- The percentage of minority individuals in a block group exceeds 50 percent.
- The percentage of minority individuals in a block group is meaningfully greater (the state level + 10 percent of the state level) than the state level

No minority populations at the block group level were identified within a 5-mile radius of the project area.

3.6.2 Economics

The average median household income in the block groups that make up the study area is $54,885 which is within the range of median household incomes reported for Humphreys and Benton counties ($59,333 and $50,435, respectively) but slightly lower than that of the state of Tennessee ($67,097) (Table 3-3). The percentage of the study area population falling below the poverty level (16 percent) is relatively consistent with the state and surrounding counties. The study area has an unemployment rate of 4.0 percent which is similar to the unemployment rates of Humphreys and Benton counties (3.1 percent and 3.9 percent, respectively), but higher than the unemployment rate in the state of Tennessee (3.3 percent) (Table 3-3).

The nationwide poverty level is determined annually by the USCB and varies by the size of family and number of related children under 18 years of age. The 2020 USCB Poverty Threshold for an individual under the age of 65 is an annual income of $13,465, and for a family of four it is an annual household income of $26,695 (USCB 2021c). For the purposes of this assessment, low-income individuals are those whose annual household income is less than two times the poverty level. According to EPA, the effects of income on baseline health and other aspects of susceptibility are not limited to those below the poverty thresholds. For example, populations having an income level from one to two times the poverty level also have worse health overall than those with higher incomes (Centers for Disease Control and Prevention 2011). Low-income populations were identified using the following criteria:

- The percentage of low-income individuals in a block group exceeds 50 percent.
- The percentage of low-income individuals in a block group is meaningfully greater (the state level + 10 percent of the state level) than the state level.

The Tennessee population percentage living below the low-income threshold is approximately 35 percent. The percentage of low-income residents in Humphreys County is similar to the state, at approximately 36 percent of the population, while Benton County is notably higher at approximately 45 percent. Approximately 32 percent of people living within the study area are considered low-income, with percentages for individual block groups ranging from 20 to 67 percent of the population. Two block groups in the study area have low-income populations that exceed 50 percent of the total population, and two additional block groups are meaningfully greater than the state percent low-income of 35 percent. Figure 3-1 identifies the four total block groups determined to meet the criterion for consideration as low-income populations.

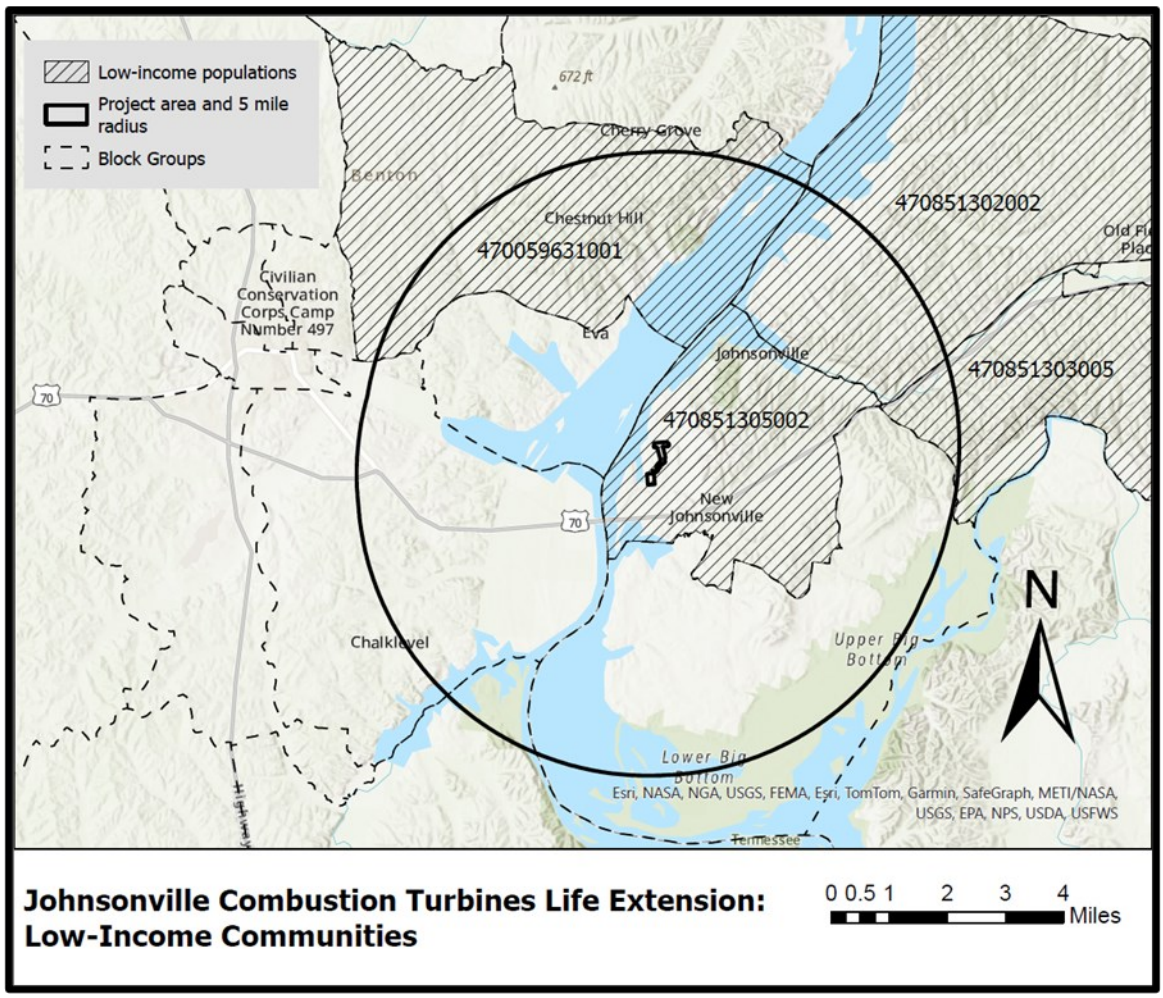

Figure 3-1. Four Block Groups were Identified as Low-income Populations in the 5-mile Radius around the Project Area in Humphreys and Benton Counties, Tennessee

3.6.3 Community Facilities and Services

Community facilities and services include public or publicly funded facilities, such as police protection and other emergency services (ambulance/fire protection), schools, hospitals and other health care facilities, libraries, day care centers, churches and community centers. To identify facilities and emergency services that could be potentially impacted by proposed project activities, the study area is identified as the service area of various providers, where applicable, or the area within a 5-mile radius of the Project Area.

Based on a review of aerial imagery and online information, including the U.S. Geological Survey (USGS) Geographic Names Information System database (USGS 2021), community facilities and services available within a 5-mile radius of the Johnsonville Reservation include 15 churches, 33 cemeteries, two post offices and an elementary school. The Project Area is also served by the New Johnsonville Police and Fire Departments. The closest community facilities, which include the New Johnsonville Post Office, Fire Department and Church of Christ, are located approximately 0.25 mile east of the rail yard portion of the Project Area. No community facilities are located adjacent to (i.e., within a 0.5-mile radius) the Project Area

3.6.4 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not continue to operate CT Units 1 through 10. These units would proceed with decommissioning, as previously described in the Paradise and Colbert Combustion Turbine Plants EA (TVA 2021a). As a result, approximately 650 MW of potential peaking capacity would be removed from TVA's generation portfolio. The absence of this capacity would reduce TVA's ability to provide flexible, dispatchable generation during periods of high system demand, particularly during seasonal peak load events. This alternative would have negligible impact on socioeconomics and surrounding communities.

3.6.5 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under Alternative B, CT Units 1 through 10 at the Johnsonville Reservation would remain in operation. These activities are not expected to induce substantial population growth, as they would not generate a significant number of new, permanent employment opportunities. However, continued operation of the CT units may result in minor, beneficial effects on local employment by retaining existing positions and supporting temporary labor needs during operation.

Alternative B is not anticipated to result in a measurable increase in emergency incidents; therefore, no appreciable impact on the demand for emergency services, for example, fire protection, law enforcement, or emergency medical response, is expected. Additionally, because the proposed actions would not lead to a significant influx of new residents or workers, no notable increase in demand for community services such as schools, religious institutions, or healthcare facilities is anticipated. Overall, socioeconomic impacts associated with Alternative B would be negligible to minor and generally beneficial.

3.7 Groundwater

The Johnsonville Reservation is situated within the Mississippi Carbonate Aquifer region, characterized by limestone and dolomite formations underlain by the Chattanooga Shale (TDEC 2018). Within a five-mile radius of the Reservation, the principal regional aquifer is the Camden Formation, which comprises thin beds of cherty limestone interbedded with softer clay layers. This formation serves as a primary groundwater source in the area.

Groundwater flow at the Johnsonville Reservation generally follows a gradient from east to west, discharging toward the Kentucky Reservoir on the Tennessee River. Depth to groundwater typically ranges from approximately 10 to 30 feet below ground surface. Recharge occurs primarily through local infiltration of precipitation and lateral subsurface flow from upland areas located to the east of the Reservation (TVA 2018).

The municipal water supply for the City of New Johnsonville is sourced from the Tennessee River and is managed by the New Johnsonville Water Department (New Johnsonville Water Department 2020). Within a two-mile radius of the proposed CT Units 1 through 10, there are 16 registered public water wells. Of these, 13 are designated for residential use, one for commercial use and two are unclassified (TDEC 2021a).

The Safe Drinking Water Act of 1974 established the Sole Source Aquifer Program to protect aquifers that supply at least 50 percent of the drinking water for a given area and for which there are no reasonably available alternative sources (USGS 2021). According to EPA, no aquifers in the State of Tennessee have been designated as sole source aquifers under this program (EPA 2025c).

3.7.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not continue to operate CT Units 1 through 10 at the Johnsonville Reservation. These units would proceed with decommissioning, as previously described in the Paradise and Colbert Combustion Turbine Plants EA (TVA 2021a). As a result, no new operational discharges would occur that could affect groundwater or surface water resources. Some minor site disturbance would occur during the decommissioning phase.

The cessation of operations and decommissioning phase would likely result in a long-term reduction in potential risks to water quality associated with facility operations, such as accidental spills, stormwater runoff, or thermal discharges. Groundwater recharge patterns and surface water flow regimes in the vicinity of the site, including flow toward the Kentucky Reservoir, would remain consistent with existing conditions. No adverse impacts to groundwater levels, aquifer recharge, or surface water quality are anticipated under this alternative.

3.7.2 Alternative B– Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under Alternative B - TVA would continue operation of CT Units 1 through 10 at the Johnsonville Reservation. No new construction or expansion of fuel storage infrastructure or CT units are proposed. As such, potential impacts to groundwater would primarily be associated with the ongoing use of existing fuel systems

The site includes two existing 4-million-gallon Ultra-low sulfur diesel (ULSD) aboveground storage tanks and associated fuel delivery infrastructure. Continued use of these systems presents a minor potential risk of fuel leaks or spills, which could result in localized soil and groundwater contamination if not properly managed. However, these risks are mitigated by continued use of the permanent secondary containment systems designed to capture potential spills, routine inspection and maintenance of tanks, piping and valves, compliance with Spill Prevention, Control and Countermeasure (SPCC) regulations and using emergency response protocols and spill containment procedures. The risk of adverse groundwater impacts from fuel storage and handling is considered low.

The proposed action does not include new groundwater withdrawals or modifications to existing hydrologic features. Therefore, no impacts to groundwater quantity, aquifer recharge, or flow direction are anticipated. Groundwater movement in the area is expected to remain consistent with current conditions, generally flowing westward toward the Kentucky Reservoir.

Continued operation of the CT units is not expected to result in significant changes to surface water quality or hydrology, as no new surface disturbance or discharge sources are proposed. Potential risks to surface water quality could arise from stormwater runoff or from accidental fuel spills. Those risks would be minimized through implementation of BMPs such as site-specific use of erosion and sediment control measures and proper containment and handling of fuels and materials.

With continued adherence to regulatory requirements and implementation of TVA’s environmental management practices, the proposed action is not expected to result in significant adverse impacts to groundwater or surface water resources. Therefore, the existing infrastructure and mitigation measures are sufficient to protect water quality and maintain hydrologic conditions while continuing to operate CT Units 1 through 10.

3.8 Wildlife Including Threatened and Endangered Species

The Endangered Species Act (16 USC Part 1531-1543) was passed to conserve the ecosystems upon which endangered and threatened species depend and to conserve and recover those species. The ESA defines an endangered species as any species in danger of extinction throughout all or a significant portion of its range, whereas a threatened species is likely to become endangered within the foreseeable future throughout all or a significant part of its range. Critical habitats, essential to the conservation of listed species, can also be designated under the ESA. The ESA establishes programs to conserve and recover endangered and threatened species and makes their conservation a priority for federal agencies. Section 7 of the ESA requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) when their proposed actions may affect endangered or threatened species or their critical habitats.

The state of Tennessee protects species considered threatened, endangered, or deemed in need of management within the state other than those federally listed under the ESA. The species listings in Tennessee are managed by TDEC, which considers listing recommendations from TWRA. Additionally, TVA maintains the Regional Natural Heritage database, which holds records of threatened and endangered plant and animal species that are known to occur in the TVA Region (TVA Power Service Area and Tennessee River Watershed).

TVA considers state threatened and endangered species, as well as state vulnerable, imperiled, and critically imperiled species when evaluating impacts of proposed projects

The Project Area includes approximately 52.88 acres and includes the current location of the Johnsonville Reservation, included in this area are two existing 4-million-gallon ULSD aboveground storage tanks, CT Units 1 through 10, and three staging/parking areas.as well The site is largely shaped by previous development and ongoing human use, with features such as concrete and gravel pads, laydown yards and paved roadways dominating the landscape, which makes the Project Area considered highly disturbed and offers limited ecological value or wildlife habitat. Although the site is generally unsuitable for most wildlife species, certain avian species may utilize specific microhabitats. For example, killdeer is known to nest in gravel substrates (National Geographic 2002), and mowed grass areas may provide marginal foraging or loafing opportunities for other common bird species. However, these areas are regularly maintained as lawns, further reducing their habitat quality.

A query of the TVA Regional Natural Heritage database did not identify any known cave features within a three-mile radius of the Project Area. Additionally, a review of the USFWS's Information for Planning and Consultation (IPaC) system, identified 19 migratory bird species of conservation concern with the potential to occur within the Project Area. These species include the bald eagle, black-billed cuckoo, bobolink, brown-headed nuthatch, chimney swift, eastern whip-poor-will, field sparrow, golden eagle, grasshopper sparrow, Kentucky warbler, Le Conte's sparrow, least tern, lesser yellowlegs, prairie warbler, prothonotary warbler, red-headed woodpecker, rusty blackbird, semipalmated sandpiper and wood thrush.

The Project Area lacks suitable habitat for the majority of these species due to the disturbed nature of the site. Limited grassed areas may provide low-quality habitat for grasshopper sparrows, although frequent mowing significantly reduces their utility. Gravel surfaces may serve as temporary stopover habitat for species such as the least tern. Three colonial wading bird colonies have been documented within the vicinity, with the nearest located approximately 1.1 miles from the Project Area.

Little blue herons inhabit calm, shallow freshwater environments such as marshes, ponds, lagoons and streams (Rodgers and Smith 2020). They typically nest in trees or shrubs approximately four meters above the ground or water, often in colonies with other wading birds. No suitable nesting or foraging habitat for this species is present within the Project Area. A review of the TVA Regional Natural Heritage database identified the presence of two state-listed (northern pine snake and western pygmy rattlesnake) and one federally listed species (piping plover) within three miles of the Project Area. Osprey, state listed as a species of conservation concern, also occurs within the project area. The review also identified one species proposed for listing as federally threatened (alligator snapping turtle), one species proposed for listing as federally endangered (tricolored bat), and one federally protected species (bald eagle). A county-level search of records in Humphreys County resulted in two additional listed species: hellbender (proposed for listing as endangered) and gray bat (federally endangered). The USFWS has also determined the federally endangered whooping crane and the monarch butterfly, a candidate for federal listing, may occur within the Project Area. These species are found in Table 3-4.

Table 3-4. Federally Listed Terrestrial Animal Species Reported from Humphreys County, Tennessee and Other Species of Conservation Concern Documented Within Three Miles of the Proposed Project Area [1]

Common Name	Scientific Name	Status[2]	
		Federal	State[3] (Rank[3])
Amphibians			
Hellbender[4]	*Cryptobranchus alleganiensis*	PE	E(S3)
Birds			
Bald eagle	*Haliaeetus leucocephalus*	DL	-
Little blue heron	*Egretta caerulea*	-	D (S2B, S3N)
Osprey	*Pandion haliaetus*	-	-(S3B)
Piping plover	*Charadrius melodus*	E, T	-
Whooping crane[6]	*Grus americana*	E, EXPN	-(SX)
Invertebrates			
Monarch butterfly[5]	*Danaus plexippus*	C	-(S4)
Mammals			
Gray bat[4]	*Myotis grisescens*	E	E(S2)
Tricolored bat[4]	*Perimyotis subflavus*	PE	T(S2S3)
Reptiles			
Alligator snapping turtle	*Macrochelys temminckii*	PT	T(S2S3)

Northern pine snake	*Pituophis melanoleucus melanoleucus*	-	T(S3)
Western pigmy rattlesnake	*Sistrurus miliarius streckeri*	-	T(S2S3)

[1]Source: TVA Regional Natural Heritage database extracted 05/05/25 and USFWS Information for Planning and Consultation (IPaC) resource list (https://ecos.fws.gov/ipac/), accessed 05/05/2025.
[2]Status Codes: C = Candidate species; D = Deemed in Need of Management; DL = Delisted and Monitored; E = Endangered; EXPN = Experimental Population Non-essential; PE = Proposed Endangered; PT = Proposed Threatened; T = Threatened.
[3]State Ranks: S#B = Rank of Breed Population; SX = Believed to be extirpated from the state; S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure.
[4]Species have been documented from Humphreys County, Tennessee but not within 3 miles of the project area.
[5]Historically this species has not been tracked by state or federal heritage programs.
[6]Species that have not been documented within three miles of the Project Area or within Humphreys County; USFWS has determined this species could occur within the project area.

Bald eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. Part 668–668d). This species is typically associated with large, mature trees capable of supporting their substantial nests, which can weigh several hundred pounds. Nests are generally located near large water bodies where eagles forage primarily for fish (USFWS 2007a). The nearest documented bald eagle nest is located approximately 2.8 miles from the Project Area. No additional nests were observed during field surveys in May 2025. However, suitable foraging habitat is present adjacent to the Project Area along the Tennessee River.

Hellbender is a large, fully aquatic salamander proposed for federal listing as endangered. It inhabits cool, well-oxygenated streams and rivers with abundant cover, such as large flat rocks (Jensen and Humphries 2007). The nearest known occurrence is approximately 9.9 miles from the Project Area. No suitable habitat is present within the Project footprint. While potential habitat exists in tributaries to the Tennessee River that are upstream of the site, indirect impacts to this species are unlikely due to suitable habitat being located upstream of the site and therefore not subject to downstream flow of sediment runoff that may result from any ground-disturbing activities.

Osprey occupy riparian habitats near rivers, lakes, and reservoirs. They typically nest on tall structures, including man-made features such as transmission towers and lighting poles. A known osprey occurrence exists within the Project footprint.

Piping plover may occur in Tennessee during migration. It utilizes expansive sand flats, sandy mudflats, and ash ponds as stopover habitat, particularly in man-made reservoirs with diverse substrate features. The nearest documented occurrence is approximately 0.64 miles from the Project Area. This species is not expected to breed in Tennessee (Elliott-Smith and Haig 2020), and no suitable stopover or breeding habitat is present within the Project footprint.

Whooping crane is federally listed as endangered in the Southwest and occurs in the Eastern United States as a non-essential experimental population (NEP). This population breeds in Wisconsin and overwinters in Florida. In Tennessee, the species is considered a rare migrant and winter resident (Tennessee Wildlife Resources Agency [TWRA] 2024). Under the Endangered Species Act (ESA), NEPs are treated as threatened on National Wildlife Refuge and National Park lands (requiring consultation under Section 7(a)(2)) and as a proposed

species on private lands (requiring federal agencies to avoid jeopardy under Section 7(a)(4)) (USFWS 2023). Neither migratory nor overwintering habitat is present within the Project Area.

Monarch butterfly is known for its long-distance migration. Eastern populations overwinter in Mexico and return to the United States in spring (Davis and Howard 2005). Breeding habitat requires the presence of milkweed species for egg-laying and larval development, while adults forage on nectar-producing wildflowers. No suitable milkweed or nectar sources are present within the Project Area, and therefore, the site does not provide suitable habitat for this species.

Gray bat roost exclusively in caves throughout the year (Brady et al. 1982; Tuttle 1976). Foraging occurs along waterways, typically after dusk (Harvey et al. 2011). The nearest known occurrence is a mist-net capture approximately 6.9 miles from the Project Area. No caves or suitable roosting habitat are present within three miles of the site, and the Project Area does not provide suitable foraging or roosting habitat.

Tricolored bat hibernates in caves, mines, and man-made structures such as culverts and abandoned wells (Newman 2021). During summer, it roosts in live or dead leaf clusters of deciduous hardwoods and occasionally in artificial structures such as barns, bridges, and beneath porches (Veilleux et al. 2003; Schaefer 2017). Foraging typically occurs over waterways and forest edges (USFWS 2024). The nearest known occurrence is approximately 0.83 miles from the Project Area. No suitable roosting or foraging habitat is present within the Project footprint.

Alligator snapping turtle is highly aquatic and rarely leaves the water except for nesting (USFWS 2021). The nearest known occurrence is approximately 1.8 miles from the Project Area. This species is restricted to river and stream systems that drain into the Gulf of America (formerly the Gulf of Mexico, renamed under EO 14172). It inhabits floodplain swamps and oxbow lakes associated with large rivers and does not occur in isolated wetlands or ponds. Nesting typically occurs from May through July, with hatching taking 96 to 143 days. No suitable aquatic or nesting habitat is present within the Project Area.

Northern pine snake is typically associated with flat, sandy habitats such as pine barrens, sandhills, and dry mountain ridges, often in or near pine-dominated woodlands. This species may also utilize scrub-shrub habitats and agricultural fields. Northern pine snakes are considered highly secretive due to their fossorial behavior, spending a significant portion of their life underground in self-excavated or existing burrows (Powell et al. 2016). The nearest documented occurrence of this species is approximately 2.22 miles from the Project Area. No suitable habitat for northern pine snake was identified within the Project footprint during field assessments.

Western pygmy rattlesnake is a secretive reptile that typically inhabits moist environments near water sources, including river floodplains, swamps, marshes, wet prairies, and temperate forests (Powell et al. 2016). This species seeks cover under debris or within burrows during colder weather but does not undergo true hibernation. The closest known occurrence is approximately 2.2 miles from the Project Area. Field surveys confirmed that no suitable habitat for this species is present within the Project footprint.

3.8.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not continue operation of CT Units 1 through 10. These units would proceed with decommissioning in accordance with the process outlined in

the Paradise and Colbert Combustion Turbine Plants EA (TVA 2021a). This alternative would eliminate approximately 650 MW of potential peaking capacity, reducing TVA's ability to meet high-demand periods. As a result, TVA would need to evaluate other energy sources and potential sites to address future system reliability and projected demand. While the decommissioning phase would result in temporary impacts to the area, these effects would be short-term and localized. Importantly, this alternative would not result in any long-term impacts to wildlife or to federally listed threatened and endangered species.

3.8.2 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under the proposed Action Alternative, TVA would continue operation of CT Units 1 through 10 at the Johnsonville Reservation to support system reliability and meet peak electrical demand. These units provide up to 650 MW of peaking capacity and are critical for maintaining grid stability during periods of high energy use. Continued operation would occur within the existing developed footprint of the Johnsonville Reservation, which includes previously disturbed areas such as gravel pads, paved surfaces and laydown yards. No new construction or land disturbance is proposed.

Neither bald eagles nor their nests were observed during field survey of the Project Area. Proposed project activities are in compliance with the National Bald Eagle Management Guidelines. One wading bird colony is located over a mile away and would not be affected. Similarly, the project footprint does not contain suitable habitat for little blue heron. The project area also lacks suitable habitat for alligator snapping turtle, eastern hellbender, gray bat, monarch butterfly, northern pine snake, piping plover, western pygmy rattlesnake, and whooping crane. No tree removal has been proposed, and no caves are known within three miles of the Project Area. The proposed project would not significantly impact gray bat or little blue heron; it would not jeopardize the continued existence of alligator snapping turtle, eastern hellbender, monarch butterfly, tricolored bat, or whopping crane; would have no effect on bald eagle, northern pine snake, piping plover, or western pigmy rattlesnake.

Six osprey nests have been documented within 660 feet of the project footprint. Three of these nests were observed active during a field survey in June 2025. These nests were built between 2021 and 2023 while Units 1-10 were active. As such, these birds have demonstrated tolerance to the sound of CT operations. Continued operation of Units 1-10 would have no significant impact on osprey currently nesting around the turbines.

3.9 Aquatic Ecology and Surface Water

3.9.1 Aquatic Ecology

The Project Area is within the Highland Rim level IV ecoregion of the greater Interior Plateau level III ecoregion (Griffith et al. 1998). Streams in this region are relatively clear with moderate gradients, with substrates consisting primarily of coarse chert gravel and sand with some bedrock. Much of the region is heavily forested, with some agriculture in the stream and river valleys.

The Project Area is located on the eastern shore (right descending bank) of Kentucky Reservoir at Tennessee River Mile (TRM) 100. The reach of the river adjacent to the reservation has been altered from its former free-flowing character by the presence of Kentucky Dam, located approximately 76 river miles downstream from the Johnsonville Reservation, and Pickwick Dam, located approximately 107 river miles upstream.

TVA has monitored the ecological conditions including dissolved oxygen and chlorophyll levels, fish assemblage, bottom life, and sediment at the Kentucky Reservoir from 1994 to 2017 (TVA 2022a). Readings are taken at the forebay, mid-reservoir, and several inflow locations.

Monitoring results for bottom life in 2017 were generally similar to previous years. Bottom life rated “good” at the forebay, mid-reservoir, and inflow locations and “poor” at the Big Sandy embayment location (TVA 2022a). Samples from the embayment contained fewer individuals and a lesser variety of organisms than those from the other monitoring locations; the organisms consisted mostly of midges, worms, and small mollusks known as fingernail clams. Low “fair” to “poor” ratings are common for Big Sandy and are likely reflective of the low dissolved oxygen conditions that develop in the lower water column each year.

The fish assemblage rated “good” at the four locations monitored. Historically, the fish assemblage has rated “good” at the transition and in the “good” to high “fair” range at the other monitoring locations (TVA 2022a). In 2017, the number and variety of fish observed at each location were consistent with long-term averages, and fish health was assessed a “good” rating with low incidences of disease and parasites. A total of 60 different species were observed reservoir wide. Some of the more interesting species observed included American eel, rainbow darter, river darter, and silver chub. Additionally, the invasive species silver carp was observed at the forebay, mid-reservoir and embayment locations. Common sportfish in the Kentucky Reservoir include largemouth bass, crappie, and catfish (Banna 2024).

Based on a wetland delineation completed on January 27, 2022, there are no jurisdictional streams within the Project Area (Wood 2022). The coal yard runoff pond, located adjacent to the Project Area, does contain free-standing water but does not provide habitat for aquatic biota since it is considered a treatment system. Discharge from the coal yard runoff pond is currently pumped and discharged through the National Pollutant Discharge Elimination System (NPDES) permitted Outfall 001 (Permit Number TN0005444) to the Kentucky Reservoir (TDEC 2011) (TDEC 2021b).

A review of the TVA Regional Natural Heritage database and the USFWS IPaC online system for protected species potentially present within the Project Area was conducted in April and August 2025, respectively (TVA 2025b, USFWS 2025). A list of aquatic species identified from the IPaC, and TVA Regional Natural Heritage database is included in Table 3-5.

Table 3-53. Federally Listed and Other Aquatic Species of Conservation Concern with Potential to Occur in the Project Area

Common Name	Scientific Name	Status	
		Federal [1]	State[1] (Rank[2])
Mussels			
Longsolid	*Fusconaia subrotunda*	T	--
Pink mucket	*Lampsilis abrupta*	E	E (S2)
Ping pink	*Obovaria retusa*	E	E (S1)
Orange-foot pimpleback	*Plethobasus cooperianus*	E	E (S1)
Rough pigtoe	*Pleurobema plenum*	E	E (S1)
Fluted kidneyshell	*Ptychobranchus subtentus*	E	E (S2)
Fish			
Slenderhead darter	*Percina phoxocephala*	--	D (S3)

Source: TVA Regional Natural Heritage database extracted 4/25/2025; USFWS Information for Planning and Conservation (https://ecos.fws.gov/ipac/) accessed 8/7/2025.
[1] Status Codes: C = Candidate for listing; D= Deemed in need of management; DL = Delisted; E = Endangered; EXPN = Experimental Population; PE = Proposed Endangered; PT = Proposed Threatened; T = Threatened; UR = Under Review.
[2] State Ranks: S#B = Breeding rank; S#N = Non-breeding rank; SX = Presumed Extirpated; S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S4 = Apparently Secure.

Listed aquatic animal species documented on the TVA Regional Natural Heritage database as occurring within the Tennessee River watershed (10-digit Hydrologic Unit Code 0604000504) include six federally listed mollusk species and one state-listed fish (see Table 3-5). Although habitat for these mollusks occurs within the Kentucky Reservoir on the Tennessee River outside of the Project Area, three of these species (ring pink, orange-foot pimpleback, and rough pigtoe) are either historical or extirpated records and are no longer considered extant in this portion of the river (TVA 2025b). No federally Designated Critical Habitat for any of these species is present within the Project Area. Additionally, no other listed species are documented as occurring near the Project Area.

The slenderhead darter is listed as in need of management by the State of Tennessee. It is commonly found in gravel shoal areas of medium to large rivers with moderate to swift current (Etnier and Starnes 1993). No suitable habitat was observed in the Project Area (TVA 2022c).

The pink mucket is typically a big river species but occasionally individuals become established in small to medium sized tributaries of large rivers. It inhabits rocky bottoms with swift currents, usually in less than three feet of water (Parmalee and Bogan 1998). No suitable habitat was observed in the Project Area (TVA 2022c).

3.9.2 Surface Water

TVA conducted environmental investigations of surface streams, sediment, benthic macroinvertebrate communities, fish community, and fish tissue in 2019 and 2021 in accordance with the requirements of TDEC-issued Commissioner's Order No. OGC15-0177 (TDEC Order) Program (TDEC 2015). Studies were conducted in the vicinity of the Coal Combustion Residuals (CCR) management units at JOF on the Tennessee River, Intake Channel, Boat Harbor and Coves, which are in proximity to the Project Area. Results from the investigations (TVA 2025a, Appendices J.1, J.3, and J.5) indicate that:

- CCR parameter concentrations in nearby surface waters of the Tennessee River, Intake Channel, Boat Harbor and Coves were below established screening levels for chronic ecological screening values (ESVs), acute ESVs, and those for protection of human health.

- With one exception, sediment samples from the Tennessee River CCR parameter concentrations were below chronic ESVs, indicating that sediment quality in the Tennessee River adjacent and downstream of the JOF Plant are within ranges that are protective of aquatic life. Within the Intake Channel, Boat Harbor, and Coves, sediment samples were above chronic ESVs for several CCR parameters and are subject to a Corrective Action/Risk Assessment Plan.

- Despite some exceedances of chronic ESVs in sediments, benthic communities within adjacent and downstream areas of the Tennessee River, the Intake Channel, and the Boat Harbor appear to be at least as healthy, rich, and sensitive as their respective unimpacted control locations.

- The fish tissue sampling results for the Tennessee River, together with the biological monitoring results, illustrate a consistent, balanced indigenous fish population, and do not indicate potential impacts to fish tissue concentrations or the fish community related to JOF CCR management units.

3.9.3 Alternative A– The No Action Alternative

Under the No Action Alternative, TVA would not continue operation of CT Units 1 through 10. These units would proceed with decommissioning in accordance with the process outlined in the Paradise and Colbert Combustion Turbine Plants EA (TVA 2021a). These units would remain on their current decommissioning schedule and would not contribute additional dispatchable capacity to the grid. As a result, there would be a reduction in wastewater output, a reduction in water usage and temporary stormwater impacts during decommissioning. Consequently, there would be no new discharges, thermal inputs, or other activities that could affect aquatic habitats or species in the vicinity. Therefore, the No Action Alternative would result in temporary minor and long-term beneficial impacts to aquatic ecology and surface water.

3.9.4 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under Alternative B, the continued operation of CT Units 1 through 10 could result in temporary impacts to aquatic species due to potential stormwater runoff into nearby aquatic habitats. Although the project would utilize previously cleared and developed areas—thereby not increasing the volume of stormwater runoff—there remains a risk of contamination from accidental spills or leaks of pollutants.

To minimize these risks, TVA would implement a site-specific Stormwater Pollution Prevention Plan (SWPPP) (see Section 3.8.2.2). In addition, BMPs consistent with the Tennessee Erosion and Sediment Control Handbook (TDEC 2012) would be applied, as appropriate, to reduce indirect impacts to surface waters from potential stormwater contamination and sedimentation. TVA would also continue to follow the SPCC Plan for the Johnsonville Reservation to prevent, contain, and properly manage any inadvertent spills or leaks (TVA 2022d).

With effective implementation of these BMPs and management plans, impacts to aquatic ecology and surface water are expected to be minor.

Operational water needs under Alternative B include the use of demineralized water for inlet air evaporative cooling during summer conditions and for CT compressor washing. The Johnsonville Reservation has sufficient capacity to produce demineralized water to meet these needs. Fire protection water would continue to be supplied by the existing fire water system. These operational water demands are not anticipated to adversely affect aquatic ecology or surface water resources.

Wastewater generated from continued operations would be discharged through CT Outfall 001 in accordance with NPDES Permit No. TN0082023. Additionally, the facility is authorized to discharge industrial stormwater under the Tennessee Multi-Sector General Permit (TMSP) No. TNR053188. The TMSP requires implementation of a SWPPP and quarterly visual monitoring of stormwater discharges. Continued operation of Units 1 through 10 would not necessitate changes to the TMSP beyond incorporating the units into the existing SWPPP.

3.10 Transportation

The transportation network surrounding the Johnsonville Reservation contains federal, state, and county roads and bridges, rail, and a barge facility located along a small channel off Kentucky Reservoir on the Tennessee River. U.S. Highway (US) 70 (locally known as Broadway Avenue) is the primary arterial roadway serving the reservation. The road has four transitions from two lanes to four lanes just west of the reservoir before crossing east over the bridge into Humphreys County with an additional center turn lane. Current activities that generate traffic at the reservation and surrounding areas include the operation of the CT units and continued operation of surrounding industrial facilities, such as the Oxychem and Chemours manufacturing facility located adjacent to the reservation to the north, and the Herbert Sand and Gravel Company located adjacent to the west. As such, the existing traffic generated at the facility is composed of a mix of cars and light-duty trucks, as well as medium-duty (larger delivery trucks) to heavy-duty trucks (semi-tractor trailers).

Surrounding roadways and those that provide access to the reservation are shown in Figure 3-2. There are three points of access into the reservation from US 70. The western access utilizes Steam Plant Road, a two-lane road which runs along the western edge of the reservation. Access to Steam Plant Road consists of an at-grade intersection on the south side of US 70 that loops around to the north, crosses over the road and railroad tracks, then enters the site. Access is also provided via North Street located approximately 0.83 miles east of Steam Plant Road. This entrance, which would be the primary access to the site for the workforce, is an at-grade intersection at North Street on the north side of US 70. North Street is a two-lane road that crosses the railroad tracks then continues north along the east side of the reservation. The at-grade railroad crossing is signalized with crossing gates. The easternmost access is a service interchange to County Highway 929 (DuPont Access Road),

a two-lane roadway. This interchange has a diamond configuration on the westbound ramps and a directional ramp/cloverleaf serving the eastbound ramps.

Figure 3-2. Tennessee Department of Transportation Functional Classification Map

Average Annual Daily Traffic (AADT) data for key roadways near the reservation are presented in Table 3-6. In general, during the period between 2018 and 2021, traffic has remained relatively consistent on surrounding roadways with traffic counts diminishing as drivers travel west of the reservation on US 70. However, AADT on US 70 east of the reservation was noticeably lower in 2020 as compared to other years, which could be associated with a reduction in traffic volumes related to the COVID-19 pandemic experienced during that time period. Overall, traffic volumes have not significantly changed during the period evaluated.

Table 3-6. Average Annual Daily Traffic Volume on Roadways in Proximity to the Johnsonville Reservation

Roadway	Year	AADT
US Route 70 east of the Johnsonville Reservation	2024	5,688
	2023	5,736
	2022	5,353
	2021	5,419
US Route 70 west of the Johnsonville Reservation	2024	8,156
	2023	8,014
	2022	7,631
	2021	8,019
County Road 929 (DuPont Access Road)	2024	1,567
	2023	1,547
	2022	1,477
	2021	1,688

Source: TDOT 2025

The CSX Railroad operates a main line between Memphis and Nashville, Tennessee, that runs roughly parallel to US 70 south of the reservation (CSX 2021). JOF is no longer directly connected to the rail line but was at one time and historically included a rail unloading facility (TVA 2018). Currently, the Chemours plant adjacent to the reservation is connected to this rail line.

TDOT maintains a Functional Classification Map that categorizes roadways based on their intended role in the transportation network. To determine the classifications of roadways leading to and around the Johnsonville Reservation, specifically US Route 70 (east and west) and County Road 929, users can consult TDOT's interactive mapping tool. This tool allows users to zoom into specific areas, such as Humphreys County, and click on road segments to view their classifications, which may include categories like Principal Arterial, Minor Arterial, Major Collector, or Local Road. Generally, US Route 70 is classified as a Principal or Minor Arterial, depending on the segment, while County Road 929 is likely designated as a Local Road or Minor Collector. These classifications help guide transportation planning, funding eligibility, and roadway design standards. The most accurate and up-to-date information can be accessed through TDOT's GIS Mapping and Data Visualization portal.

3.10.1 Alternative A– The No Action Alternative

Under the No Action Alternative, TVA would not continue operation of CT Units 1 through 10. These units would proceed with decommissioning in accordance with the process outlined in the Paradise and Colbert Combustion Turbine Plants EA (TVA 2021a). These units would remain on their current decommissioning schedule and would not contribute additional dispatchable capacity to the grid. From a transportation perspective, the No Action Alternative would result in no change to current traffic patterns or volumes in and around the Johnsonville Reservation. Existing traffic generated by ongoing activities would continue at current levels.

The mix of vehicle types, including cars, light-duty trucks, and medium- to heavy-duty trucks, would remain consistent with present conditions.

3.10.2 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under Alternative B, TVA would continue operation of CT Units 1 through 10 that were previously scheduled for decommissioning. This action would provide an estimated 650 MW of additional dispatchable capacity to the power grid during periods of peak demand, supporting system reliability and regional energy needs.

Continued operation of the CT units would result in a negligible to minor increase in traffic volumes to and from the Johnsonville Reservation. This increase would primarily be associated with the commuting workforce, as well as periodic deliveries of equipment, materials, and fuel. The vehicle mix would remain similar to current conditions, consisting of passenger vehicles, light-duty trucks, and occasional medium- to heavy-duty trucks (e.g., delivery vehicles and semi-tractor trailers).

Reservation access would continue to be provided via three existing entry points from US 70:

- Steam Plant Road (western access): A two-lane road with an at-grade intersection on the south side of US 70 that loops around to the north, crosses over the road and railroad tracks, and enters the site.

- North Street (central access): Located approximately 0.83 miles east of Steam Plant Road, this two-lane road crosses the railroad tracks and continues north along the east side of the reservation. This entrance would serve as the primary access point for the operations workforce. The at-grade railroad crossing is signalized and equipped with crossing gates.

- County Highway 929 (DuPont Access Road) (eastern access): A two-lane road accessed via a service interchange with US 70, featuring a diamond configuration on the westbound ramps and a directional/cloverleaf ramp for eastbound traffic.

While the increase in traffic is expected to be incremental, it would concentrate during shift changes and delivery windows. However, based on historical traffic data from 2018 to 2021, surrounding roadways, including US 70, have demonstrated the capacity to accommodate similar volumes without significant congestion. The AADT has remained relatively stable, with only a temporary dip in 2020 attributed to the COVID-19 pandemic. Therefore, the anticipated traffic increase under this alternative is not expected to exceed the capacity of existing infrastructure or result in substantial impacts to local traffic flow.

3.11 Solid and Hazardous Waste

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

RCRA regulations define what constitutes a hazardous waste and establishes a “cradle to grave” system for management and disposal of hazardous wastes. Universal waste is a subset of hazardous waste that is widely generated. Universal waste includes batteries, lamps and high intensity lights, and mercury thermostats. Universal waste may be managed in accordance with the RCRA requirements for hazardous waste or by special, less stringent provisions.

Solid waste consists of a broad range of materials that include refuse, sanitary wastes, contaminated environmental media, scrap metals, nonhazardous wastewater treatment plant sludge, nonhazardous air pollution control wastes, various nonhazardous industrial waste, and other materials (solid, liquid or contained gaseous substances). Solid waste is regulated by the EPA and RCRA Subtitle D.

Special waste is a solid waste, other than a hazardous waste, that requires special handling and management to protect public health or the environment. In some states, special wastes may include sludges, bulky wastes, pesticide wastes, industrial wastes, combustion wastes, friable asbestos, and certain hazardous wastes exempted from RCRA Subtitle C requirements. Any of these wastes, if generated, would be disposed of as required by state and federal regulations.

For gas- and oil-fired plants the solid waste concerns are the by-products from emission controls. The solid waste produced from these controls is dependent upon the specific control technology implemented and is not anticipated to be considerable (Brown et al. 2017). Other hazardous waste generated at Johnsonville Reservation include waste paint, waste paint solvents, paper insulated lead cable, debris from sandblasting and scraping paint chips, solvent rags used to clean equipment, and liquid-filled fuses (TVA 2019c).

3.11.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not continue operation of CT Units 1 through 10. These units would proceed with decommissioning in accordance with the process outlined in the Paradise and Colbert Combustion Turbine Plants EA (TVA 2021a). These units would remain on their current decommissioning schedule and would not contribute additional dispatchable capacity to the grid.

From a hazardous materials and waste management perspective, the No Action Alternative would result in a reduction in the generation of hazardous and solid wastes associated with the continued operation of the CT units. This includes a decrease in the production of waste paint, solvents, paper-insulated lead cable, sandblasting debris, solvent rags, and liquid-filled fuses. Similarly, the generation of small quantities of hazardous waste from equipment maintenance, such as waste oils, coolants, cleaning chemicals, and petroleum products, would be avoided.

3.11.2 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under the Action Alternative, TVA would continue operating CT Units 1 through 10 at the Johnsonville Reservation. Continued operation of the CT units would result in the ongoing generation of hazardous and solid waste associated with plant operations. Hazardous materials involved in these activities may include substances regulated under federal laws such as the OSHA standards, EPCRA, RCRA, CERCLA, and TSCA.

Hazardous waste generated at the Johnsonville Reservation would include but are not limited waste paint, paint solvents, paper-insulated lead cable, sandblasting debris, solvent rags, and liquid-filled fuses. Small quantities of hazardous waste such as waste oils, anti-freeze, chemical cleaning agents, parts washer liquids, and other petroleum-based products may also be generated during continued operation of the CT units. These materials would be managed in accordance with RCRA's "cradle to grave" requirements and other applicable federal and state regulations.

Universal waste such as batteries, lamps, and mercury thermostats, may also be generated and would be handled under either the standard RCRA hazardous waste requirements or the less stringent universal waste provisions, depending on the specific waste type and quantity.

Solid waste generated from the operation of gas- and oil-fired CT units would primarily consist of by-products from emission control technologies. While the volume of such waste is not anticipated to be substantial, it would be managed in compliance with RCRA Subtitle D and other relevant EPA regulations. Additional solid waste may include refuse, nonhazardous industrial waste, and other materials associated with plant operations.

In summary, continuing the operation of CT Units 1 through 10 would result in the continued generation and management of hazardous, universal, solid, and special wastes at the Johnsonville Reservation. TVA would continue to comply with all applicable environmental regulations to ensure proper handling, storage, and disposal of these materials. While this alternative would have ongoing environmental impacts related to waste generation, it would fulfill TVA's need for additional dispatchable capacity and contribute to grid reliability during peak demand periods.

3.12 Public Health and Safety

The Johnsonville Reservation is located in New Johnsonville, in Humphreys County, which is a rural, sparsely populated area, located on the south side of US 70/State Highway 1. Public emergency services in the area include urgent care clinics, hospitals, law enforcement services, and fire protection services. West Tennessee Healthcare Camden Hospital is the closest hospital located approximately 7.2 miles northwest of the Project Area in Camden, Tennessee. The closest urgent care is the Fast Pace Health Urgent Care located 7.8 miles northwest of the Project Area in Camden. Police and fire protection services are provided by the city of New Johnsonville. The Tennessee Emergency Management Agency has the responsibility and authority to coordinate with state and local agencies in the event of a release of hazardous materials.

Workplace health and safety regulations are designed to eliminate personal injuries and illnesses from occurring in the workplace. These laws may comprise both federal and state statutes. The OSHA Act of 1970 is the main statute protecting the health and safety of workers in the workplaces. 29 CFR 1926 contains health and safety regulations specific to the construction industry. TVA has a robust safety conscious culture that is focused on awareness and understanding of workplace hazards, prevention, intervention, and active integration of BMPs to avoid and minimize hazards.

3.12.1 Alternative A – The No Action Alternative

Under the No Action Alternative, TVA would not continue the operation of CT Units 1 through 10 at the Johnsonville Reservation. These units would proceed toward decommissioning, consistent with the decision documented in the Paradise and Colbert Combustion Turbine Plants EA and associated FONSI (TVA 2021a). These units would remain on their current

decommissioning schedule and would not contribute additional dispatchable capacity to the grid.. Because the units would no longer operate, there would be no new or ongoing impacts to public health and safety. Additionally, decommissioning activities would be limited in scope and duration and are not expected to result in adverse impacts to public health and safety.

3.12.2 Alternative B – Continued Operation of Johnsonville Combustion Turbine Units 1 through 10

Under Alternative B, TVA would continue to operate CT Units 1 through 10 at the Johnsonville Reservation to provide flexible, dispatchable capacity critical for supporting TVA's power system, particularly during extreme weather events and periods of high demand. These measures would enable the continued provision of approximately 650 MW of dispatchable capacity to support system reliability during peak demand periods.

The Johnsonville Reservation is located in a rural, sparsely populated area of Humphreys County, on the south side of US 70/State Highway 1. Public emergency services in the area include urgent care clinics, hospitals, law enforcement, and fire protection. West Tennessee Healthcare Camden Hospital located approximately 7.2 miles northwest of the Project Area, and Fast Pace Health Urgent Care, located 7.8 miles northwest of Camden, provide the nearest medical services. Police and fire protection services are provided by the City of New Johnsonville, and the Tennessee Emergency Management Agency maintains responsibility for coordinating responses to hazardous materials incidents.

Continued operation of the CT Units 1 through 10 would involve routine and periodic activities that are subject to federal and state workplace health and safety regulations. These include the OSHA of 1970 and industry-specific standards under 29 CFR 1926. TVA's strong safety-conscious culture emphasizes hazard awareness, prevention, and the integration of BMPs to minimize risks to workers and the public.

In summary, Alternative B would maintain the current level of public health and safety protection while supporting regional energy reliability. Continued adherence to regulatory standards and TVA's safety practices would ensure that risks to workers and the surrounding community remain low.

3.13 Unavoidable Adverse Environmental Impacts

Potential adverse impacts associated with the proposed action were identified during the environmental review process. TVA has minimized these impacts through careful planning and project design. Where potential effects remain, TVA would implement appropriate BMPs. As a result, no unavoidable adverse impacts are anticipated.

CHAPTER 4 – LIST OF PREPARERS

4.1 NEPA Project Management

Amanda Pagels (TVA)

Education:	B.S., Agriculture
Project Role:	TVA Project Manager, TVA NEPA Coordinator, NEPA Compliance
Experience:	11 years of professional experience in NEPA and Environmental Compliance

Anita E. Masters (TVA)

Education:	M.S., Biology/Fisheries; B.S., Wildlife Management
Project Role:	NEPA Project Manager, TVA NEPA Coordinator, NEPA Compliance
Experience:	36 years in project management, managing and performing NEPA analyses; Endangered Species Act compliance; Clean Water Act evaluations; community/watershed biological assessments

Brittany Kunkle (TVA)

Education:	B.S., Environmental and Soil Science
Project Role:	TVA Project Manager, TVA NEPA Coordinator, NEPA Compliance
Experience:	6 years of professional experience in NEPA and Environmental Compliance

Joe Santangelo (TVA)

Education:	M.S., Environmental Engineering and B.S., Environmental Engineering
Project Role:	Environmental Program Manager
Experience	20 years of professional experience in Environmental Compliance.

Rececca Porath (WSP)

Education:	M.S., Biology and B.S., Marine Biology
Project Role:	Wood Deputy Project Manager. Chapters 1 and 2; Surface Waters; Wetlands; Threatened and Endangered Species; Aquatic Ecology; and Wildlife reviews
Experience	11 years of professional experience in NEPA and ecological studies

4.2 Other Contributors

Angela Love (WSP)

Education:	B.S., Biology (M.S. in progress)
Project Role:	Vegetation

Experience:	10 years of experience in ecological and botanical investigations

Caitlin Baird (TVA)

Education:	M.B.A., Environmental Management; B.S., Environmental Science
Project Role:	Document preparation
Experience:	2 years in environmental policy and 1 year in NEPA compliance

Christine Robichaud (WSP)

Education:	M.S. Ecology, B.S. Biology
Project Role:	WSP Project Manager, Technical Review, Aquatic Ecology
Experience:	16 years in environmental assessment and monitoring

Jonathan Bourdeau (WSP)

Education:	B.S. Forest Resources, M.S. Management Science
Project Role:	Vegetation, wetlands, water resources
Experience:	29 years of experience in ecological and botanical investigations

Bailey Hickey (WSP)

Education:	B.S., Environmental Engineering
Project Role:	Water Resources
Experience:	6 years of experience in engineering consulting and environmental planning

Andrea Johnston (WSP)

Education:	B.S., Environmental Science
Project Role:	Aquatic Ecology
Experience:	3 years of experience in NEPA analysis and scientific studies

Christopher Bone (TVA)

Education:	B.S. Mechanical Engineering
Project Role:	TVA Senior Manager, Strategic Projects
Experience:	20 Years Power Generation, 10 years in Project Management

Erin Alsop (WSP)

Education:	B.S., Environmental Science
Project Role:	WSP Deputy Project Manager, Technical Review, Climate Change
Experience:	8 years of experience in NEPA analysis and documentation

Jonathan Bourdeau (WSP)

Education:	B.S., Biology (M.S. in progress)
Project Role:	Vegetation
Experience:	10 years of experience in ecological and botanical investigations

Phillip Crittenden (TVA)

Education:	B.S., Building Construction
Project Role:	Sr. Manager, Strategic Planning
Experience:	20 Years of transmission experience spanning project management, operations and planning

Ryan O'Keefe (TVA)

Education:	B.S., Business
Project Role:	Project Manager
Experience:	16 years at TVA in maintenance, construction and project management.

Sarah Ottinger (TVA)

Education:	M.S. and B.S., Environmental Science and Ecology
Project Role:	Socioeconomics
Experience:	Two years experience in environmental compliance including biological and NEPA compliance, 6+ years in GIS-based software and statistical data modeling

Steve Cole (TVA)

Education:	PhD, Anthropology; MA Anthropology; BA Anthropology
Project Role:	Cultural Resources
Experience:	32 years in Archaeology and Cultural Resources

Fallon Parker Hutcheon (TVA)

Education:	M.S. and B.S., Environmental Studies; B.S. Biology
Project Role:	Wetland Biologist
Experience:	3 years in wetland assessment, impact analysis and compliance

Sara McLaughlin-Johnson (TVA)

Education:	B.S. Wildlife & Fisheries Science
Project Role:	Terrestrial Ecology (Animals), Terrestrial Threatened and Endangered Species

Experience:	9 years in terrestrial wildlife assessment, impact analysis, and NEPA compliance; 15 years of combined experience in wildlife management, conservation, and husbandry.

Chloe Sweda (TVA)

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

Robert Stinson (TVA)

Education:	B.S. Wildlife and Fisheries Science
Project Role:	Terrestrial Zoology
Experience:	13 years of experience with wildlife biology and threatened and endangered species surveys, 4 years of experience with NEPA and ESA compliance.

Jesse Troxler (TVA)

Education:	M.S. and B.S., Wildlife and Fisheries Science
Project Role:	Terrestrial Zoology
Experience:	20 years working in wildlife research, surveying, and monitoring; 7 years in NEPA and ESA compliance

Carrie Williamson (TVA)

Education:	M.S., Civil Engineering; B.S., Civil Engineering; Professional Engineer, Certified Floodplain Manager
Project Role:	Floodplains and Flood Risk
Experience:	11 years in Floodplains and Flood Risk; 3 years in River Forecasting; 11 years in Compliance Monitoring

Craig Phillips (TVA)

Education:	M.S. and B.S., Wildlife and Fisheries Science
Project Role:	Aquatic Ecology and Threatened and Endangered Species
Experience:	7 years sampling and hydrologic determination for streams and wet-weather conveyances; 5 years in environmental reviews.

Christopher Dunay (WSP)

Education:	B.S. Meteorology, M.S. Environmental Science Management
Project Role:	Air Quality and Greenhouse Gases
Experience:	35 years primarily in air permitting and compliance

CHAPTER 5 – LITERATURE CITED

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Appendix A – Maps and Figures

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Legend

- CT Units 1-10
- Fuel Tanks
- Laydown
- Project Site Boundary
- Johnsonville Reservation

Landcover Description

- Deciduous Forest
- Developed-Low Intensity
- Grassland/Herbaceous

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Legend

- CT Units 1-10
- Fuel Tanks
- Laydown Area
- Project Site Boundary
- Intermittent Stream
- Ephemeral Stream/Wet Weather Conveyance
- Emergent Wetland
- Forested Wetland

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Appendix B – Public and Agency Comments on the Draft Environmental Assessment

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Appendix C – Coordination

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

February 2, 2015

Mr. E. Patrick McIntyre, Jr.
Executive Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), PROPOSED HEAT RECOVERY STEAM GENERATOR (HRSG), JOHNSONVILLE FOSSIL PLANT (JOF), HUMPHREYS COUNTY, TENNESSEE

TVA proposes to construct a heat recovery steam generator (HRSG) at Johnsonville Fossil Plant (JOF). The HRSG would be used to provide steam to an external strategic customer ("the customer"). TVA has a contractual obligation to provide steam to the customer, and does so using steam produced by JOF coal-fired generating units. However, TVA plans to retire all ten coal-fired units at JOF by December 2017 in order to meet requirements of a Federal Facilities Compliance Agreement (which TVA entered into with the U.S. Environmental Protection Agency in April 2011), as well as the requirements of a judicial consent decree with four states and three non-governmental organizations. Constructing the HRSG would allow TVA to continue to provide steam to the customer after JOF coal-fired units are retired.

TVA would construct the HRSG within the JOF reservation at combustion-turbine (CT) Unit 20 ("the undertaking"). Permanent modifications would be limited to a 7.4-acre area at the north end of the Johnsonville CT facility (see "Permanent Use Area" on Figure 1, below). Although TVA has not yet issued detailed designs for the HRSG, the profile would be somewhat lower than the existing CT Unit 20 exhaust stack. Two temporary use areas (covering areas of 6.4 and 4.8 acres) would be set aside for use as laydown or staging areas during construction. In addition, TVA is considering three alternatives for supplying water to the HRSG. One option would be to install a water supply line from an existing raw water intake directly west of CT Unit 20, on the Tennessee River shoreline. A second option would be to install a 708-foot water supply line underground from the existing water treatment building north to the Permanent Use Area, routing the line along the west side of the CT units. The third option is substantially similar to this latter option, but would be routed along the east side of the CT units. These options are shown on the enclosed map.

TVA is simultaneously considering a second alternative, the "No Action" alternative. Under this alternative, TVA would not provide steam to the customer. Instead, the customer would provide

their own steam by constructing and operating a HRSG. Since TVA would not be involved in the funding, permitting, licensing, or approval of this action, and would not provide financial assistance to the customer, this alternative would not be a TVA undertaking. However, although TVA does not know the location or size of the areas that would be affected by the customer's actions, impacts from the No Action alternative are expected to be limited to previously developed and disturbed lands on the customer's property.

TVA has determined that the undertaking's area of potential effects (APE), for archaeological resources, consist of the 7.4-acre Permanent Use Area and the three water supply line options under consideration. The APE for above-ground (architectural) resources consists of a one-half mile radius surrounding the Permanent Use Area, which is the only location where permanent structures would be constructed as part of the undertaking.

TVA finds that the undertaking would not affect archaeological resources included or eligible for inclusion in the National Register of Historic Places (NRHP). TVA has records of four previous archaeological surveys that included areas in proximity to the Permanent Use Area (Cable 1999, Ezell 2000, Kerr 1996, and McKee 2001). None of the studies resulted in the identification of archaeological sites within the project footprint or its immediate vicinity. During construction of JOF in the 1950s, and maintenance activities and additional construction since that time, significant ground disturbance has taken place within the archaeological APE. Figure 2 shows a comparison of the archaeological APE (labelled "project study area") as depicted on the TVA Land Acquisition Map, based on a 1937 land survey for TVA's Kentucky Reservoir Project, with modern aerial imagery. Prior to construction of JOF, the project area consisted of rolling terrain bisected by a small creek, with a one-story frame house, a barn, scattered outbuildings, a cemetery, and an orchard. Currently, the study area consists of nearly level ground, much of which is paved or covered in gravel. Given the degree of ground disturbance from modern development, TVA finds that the archaeological APE has virtually no potential for the presence of significant, intact archaeological sites.

The undertaking could result in visual effects to any historic architectural resources that may be present within the APE, from the introduction of a new visual element. TVA contracted with Tennessee Valley Archaeological Research (TVAR) to perform a Phase I architectural survey of the APE. Enclosed are two copies of the draft report titled, *Phase I Architectural Survey for the Proposed Construction of a Heat Recovery Steam Generator at TVA's Johnsonville Fossil Plant, Humphreys County, Tennessee*, along with two CDs containing digital copies of the report.

Background research indicated that there are no previously recorded historic architectural resources within the one-mile architectural APE. TVAR completed an architectural assessment of JOF and recommends that it is ineligible for listing in the NRHP due to a lack of architectural distinction and to loss of integrity resulting from extensive modern alterations. TVA agrees with this recommendation and finds that the undertaking would affect no historic properties included or eligible for inclusion in the NRHP.

Pursuant to 36 CFR Sections 800.4(d)(1) and 800.5(b), we are seeking your concurrence with TVA's findings and determinations,

Pursuant to §800.3(f)(2), TVA is consulting with federally recognized Indian tribes regarding historic properties within the APE that may be of religious and cultural significance to the tribes.

Should you have any questions or comments, please contact Richard Yarnell in Knoxville at wryarnell@tva.gov or (865) 632-3463.

Sincerely,

Clinton E. Jones, Manager
Biological and Cultural Compliance
Safety, River Management and Environment
WT 11B-K

SCC:CSD
Enclosure
cc (Enclosure):
Ms. Jennifer Barnett
Tennessee Division of Archaeology
1216 Foster Avenue, Cole Bldg. #3
Nashville, Tennessee 37210

REFERENCES CITED

Cable, John S.
1999 *Phase I Intensive Cultural Resource Survey of the New Johnsonville Natural Gas Pipeline Route Alternatives, Humphreys and Hickman Counties, Tennessee. Final Report.* Prepared for Tennessee Valley Authority, Norris, TN. Prepared by Palmetto Research Institute, Irmo, South Carolina.

Ezell, Raymond
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McKee, Larry
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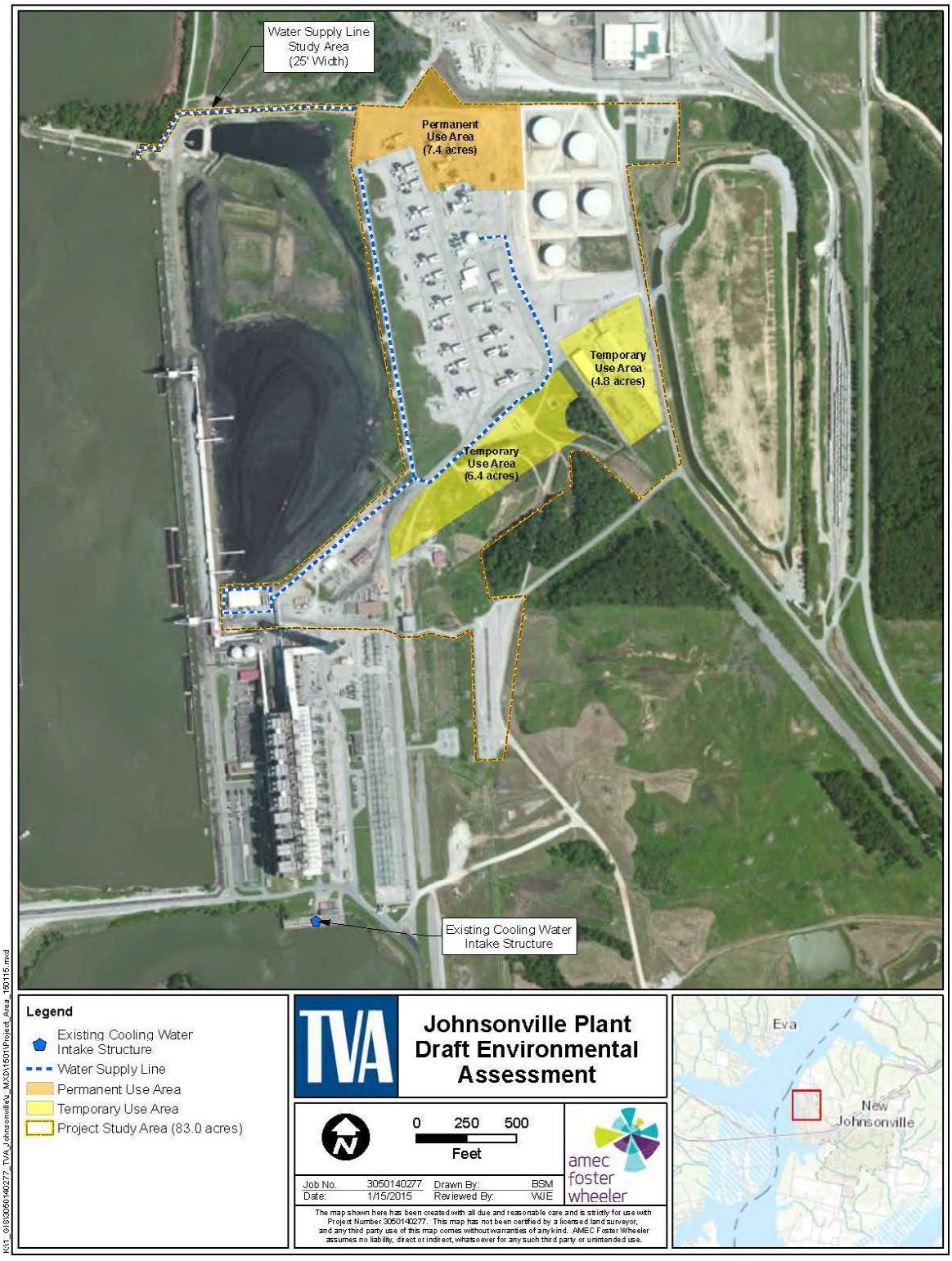

Figure 1. Map of areas affected by the undertaking.

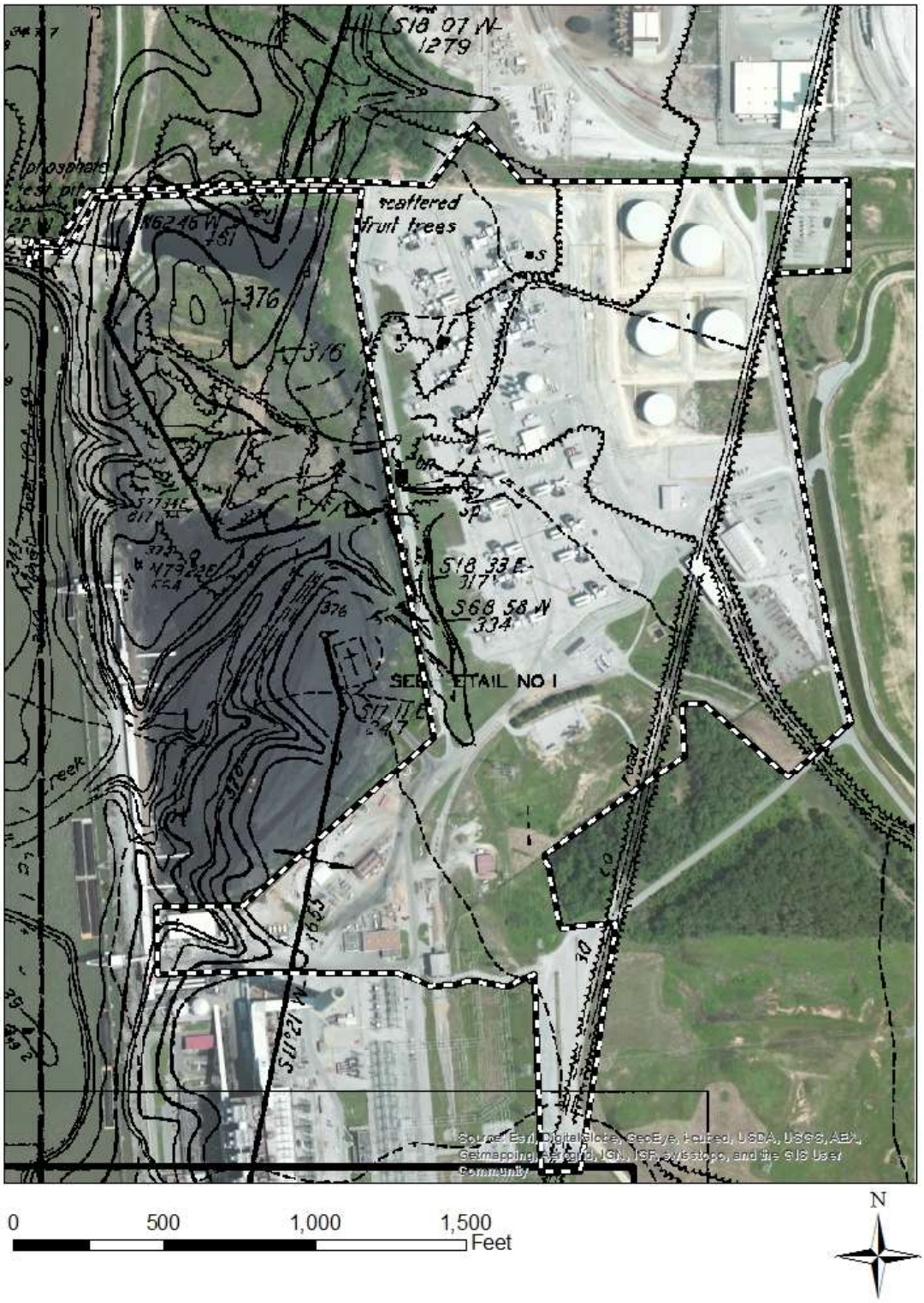

Figure 2. Project study area (dashed line) with the TVA Land Acquisition Map for Kentucky Reservoir (1937) superimposed on modern aerial imagery.

PHASE I ARCHITECTURAL ASSESSMENT FOR THE PROPOSED CONSTRUCTION OF A HEAT RECOVERY STEAM GENERATOR AT TVA'S JOHNSONVILLE FOSSIL PLANT, HUMPHREYS COUNTY, TENNESSEE

Tennessee Valley Archaeological Research

INTERNAL COPIES, NOT INCLUDED WITH OUTBOUND LETTER:

Ashley Farless, BR 4A-C
Bo Baxter, WT11C-K
Skip Markham, BR 4A-C
Richard Yarnell, WT11D-K
EDMS, WT CA-K

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

February 23, 2015

Mr. Clinton Jones
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902

RE: TVA, CULTURAL RESOURCES ASSESSMENT, JOF/HEAT RECOVERY STEAM GENERATOR, JOHNSONVILLE, HUMPHREYS COUNTY, TN

Dear Mr. Jones:

At your request, our office has reviewed the above-referenced cultural resources survey report in accordance with regulations codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739). Based on the information provided, we concur that the project area contains no historic properties eligible for listing in the National Register of Historic Places.

If project plans are changed or archaeological remains are discovered during construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act.

Your cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.

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

EPM/jmb

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

February 2, 2017

Mr. Clinton E. Jones
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902

RE: TVA / TENNESSEE VALLEY AUTHORITY, Construction of a Heat Recovery Steam Generator at Johnsonville Fossil Plant, Johnsonville, HUMPHREYS COUNTY, TN

Dear Mr. Jones:

At your request, our office has reviewed the above-referenced architectural resources final report. This review is a requirement of Section 106 of the National Historic Preservation Act for compliance by the participating federal agency or applicant for federal assistance. Procedures for implementing Section 106 of the Act are codified at 36 CFR 800 (Federal Register, December 12, 2000, 77698-77739).

Based on the information provided, we find that the final report meets the Tennessee State Historic Preservation Office Reporting Standards and/or the Tennessee SHPO Standards and Guidelines for Archaeological Resource Management Studies.

Your continued cooperation is appreciated.

Sincerely,

E. Patrick McIntyre, Jr.

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

EPM/dlc

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

January 25, 2018

Mr. E. Patrick McIntyre, Jr.
Executive Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), JOHNSONVILLE FOSSIL PLANT DECONSTRUCTION, HUMPHREYS COUNTY, TENNESSEE

TVA retired Units 1 through 10 of Johnsonville Fossil Plant (JOF) on December 31, 2017 in accordance with a Federal Facilities Compliance Agreement (Docket No. CAA-04-20120-1760) that TVA signed in 2010 with the U.S. EPA, and in accordance with a judicial consent decree with four states and three non-governmental organizations. These agreements, collectively referred to as the "EPA Agreements", require TVA to reduce emissions from its coal-fired power plants, including JOF.

TVA proposes to deconstruct JOF with the goal of developing the site as a brownfield. Alternatives under consideration include (1) closing and securing the site without demolition; (2) selective demolition of most outlying structures including the coal handling facilities and a steam pipeline that was used in conveying steam to an adjacent industrial facility; and (3) demolition of the entire site except for structures that will remain in support of the continued operation of the combustion turbines. If TVA selects the latter option, all fossil plant-related structures including the powerhouse, coal handling facilities, roads and parking lots would be demolished to grade. The exhaust stack may be left in place, demolished, or disassembled in whole or part by hand. TVA has determined that the proposed deconstruction of JOF is an undertaking (as defined at 36 CFR § 800.16(y)) that has the potential to cause effects on historic properties. We are initiating consultation under Section 106 of the National Historic Preservation Act for this undertaking.

Figure 1, below, shows the area affected by the demolition project. All demolition activities would be confined to the area within the red polygon in Figure 1. TVA will continue to operate the Johnsonville Combustion Turbine Units (JCT), located within the JOF reservation. The JCT water treatment plant, diesel fire pump house, fuel oil unloading facility, 69-kilovolt (kV), 161-kV and 500-kV switchyards, and Booster Fan Building will remain in service indefinitely regardless of the plant deconstruction option carried out at JOF.

TVA determined the area of potential effects (APE) for archaeological resources to include all areas where physical actions associated with demolition would take place. Although no

physical actions related to the undertaking would take place outside the archaeological APE, facilities that are part of JOF but located outside the archaeological APE could be considered to be contributing elements to JOF, were JOF to be determined eligible for inclusion in the National Register of Historic Places (NRHP). Therefore, TVA considers the APE for aboveground properties to include JOF and all related facilities within the fossil plant reservation, exclusive of JCT.

TVA evaluated the undertaking's potential to affect archaeological resources through background research that included historic United States Geological Survey topographic maps, TVA's 1937 land acquisition map for Kentucky Reservoir, TVA's original plant grading plan from 1949, current satellite imagery (as shown in Figure 1), and previous archaeological investigations. Currently, the study area consists of level ground covered in asphalt, the powerhouse, the coal conveyor, the steam pipeline, a section of the coal yard, and an area containing utility buildings such as the yard equipment maintenance building. Prior to JOF construction in 1949-52, most of the APE consisted of terraces and stream banks associated with a small creek (Figure 2, below). Small farms were scattered around the area, although none were located in the APE. One historic cemetery is shown on the 1937 land acquisition map within the JOF reservation but outside of the archaeological APE. TVA's technical report on JOF (TVA 1958:207-208) states that the cemetery was "within an area which was to be excavated to a depth of more than 8 feet, making removal necessary." During construction of JOF the powerhouse foundation was excavated to a grade of 340 feet above mean sea level (amsl) (TVA 1958:228), which is 14-40 feet lower than the original ground surface. Excavation spoils were used as fill to create the south harbor dike and the coal yard.

One archaeological site (40HS277) was recorded previously within the APE. The site was recorded by the Tennessee Division of Archaeology in 1994 based on information provided by an artifact collector, who collected artifacts during JOF construction. Site 40HS277 was reported as measuring 100 meters by 100 meters, and yielded a Clovis point. The site was located where the JOF condenser intake and water treatment plant were later constructed (Figure 3, below; this location is also shown by Figure 19 in the enclosed report). Comparison of pre-1950 contour maps with the JOF grading plan and current setting indicates the site was destroyed by the construction of the condenser water intake. According to the site form, the site could not be relocated during a 2006 revisit. Based on this information, TVA finds that site 40HS277 is no longer extant. During four previous archaeological surveys that included areas in proximity to the APE (Cable 1999, Ezell 2000, Kerr 1996, and McKee 2001) no archaeological sites were identified in the APE or its immediate vicinity.

In 2015, TVA consulted with your office regarding TVA's proposed heat recovery steam generator (HRSG) at JOF. The archaeological APE for that study, which was north of the powerhouse area, slightly overlapped the current APE. TVA and your office agreed that the construction, maintenance, and additions at JOF since the 1950s rendered the archaeological APE void of intact archaeological sites. Our background research for the current undertaking leads to the same conclusion. Therefore, TVA finds that the proposed retirement of JOF would affect no archaeological sites.

In TVA's previous consultation on the HRSG in 2015, we proposed that JOF is ineligible for inclusion in the NRHP due to a lack of architectural distinction and to the loss of integrity resulting from extensive modern alterations. Your office agreed (letter dated February 23, 2015). Based on this previous consultation TVA finds that JOF is ineligible for inclusion in the NRHP.

TVA finds that the proposed deconstruction of JOF would have no effect on historic properties. Pursuant to 36 CFR Part 800.4(d)(1), we are seeking your concurrence with TVA's finding of "no historic properties affected".

Pursuant to 36 CFR Part 800.3(f)(2), TVA is consulting with 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.

Should you have any questions or comments, please contact Ted Wells by email, ewwells@tva.gov or by phone, (865) 632-2259.

Sincerely,

Clinton E. Jones
Manager
Cultural Compliance

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

References Cited

Cable, John S.
1999 *Phase I Intensive Cultural Resource Survey of the New Johnsonville Natural Gas Pipeline Route Alternatives, Humphreys and Hickman Counties, Tennessee. Final Report.* Prepared for Tennessee Valley Authority, Norris, TN. Prepared by Palmetto Research Institute, Irmo, South Carolina.

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Tennessee Valley Authority (TVA)
1958 *The Johnsonville Steam Plant: A Comprehensive Report on the Planning, Design, Construction, Costs, and First power Operations of the Initial Six-Unit Plan. Technical Report No. 31*. Tennessee Valley Authority, Knoxville, TN.

INTERNAL COPIES ONLY, NOT TO BE INCLUDED WITH OUTGOING LETTER:

Sheliah D. Baker, LP 5P-C
A. Michelle Cagley, KFP 1T-KST
Stephen C. Cole, WT 11D-K
Carol Freeman,
Susan R. Jacks, WT 11C-K
Stacey S. McCluskey, OSA 1D-M
Rebecca J. Seaton, JOF A-NJT
M. Susan Smelley, BR 4A-C
Edward W. Wells, WT 11D-K

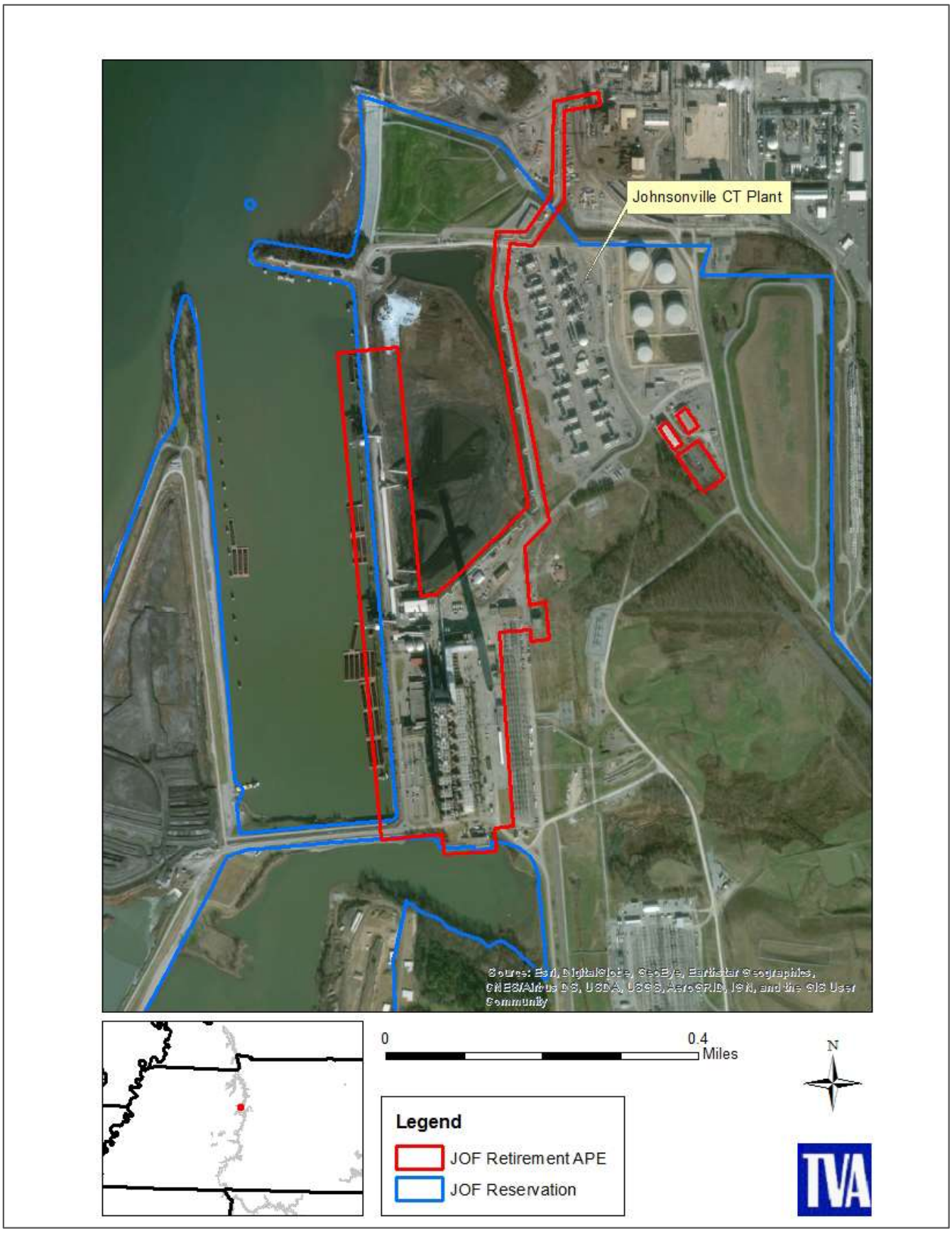


Figure 1. JOF Reservation (TVA fee-owned) and JOF Deconstruction APE.

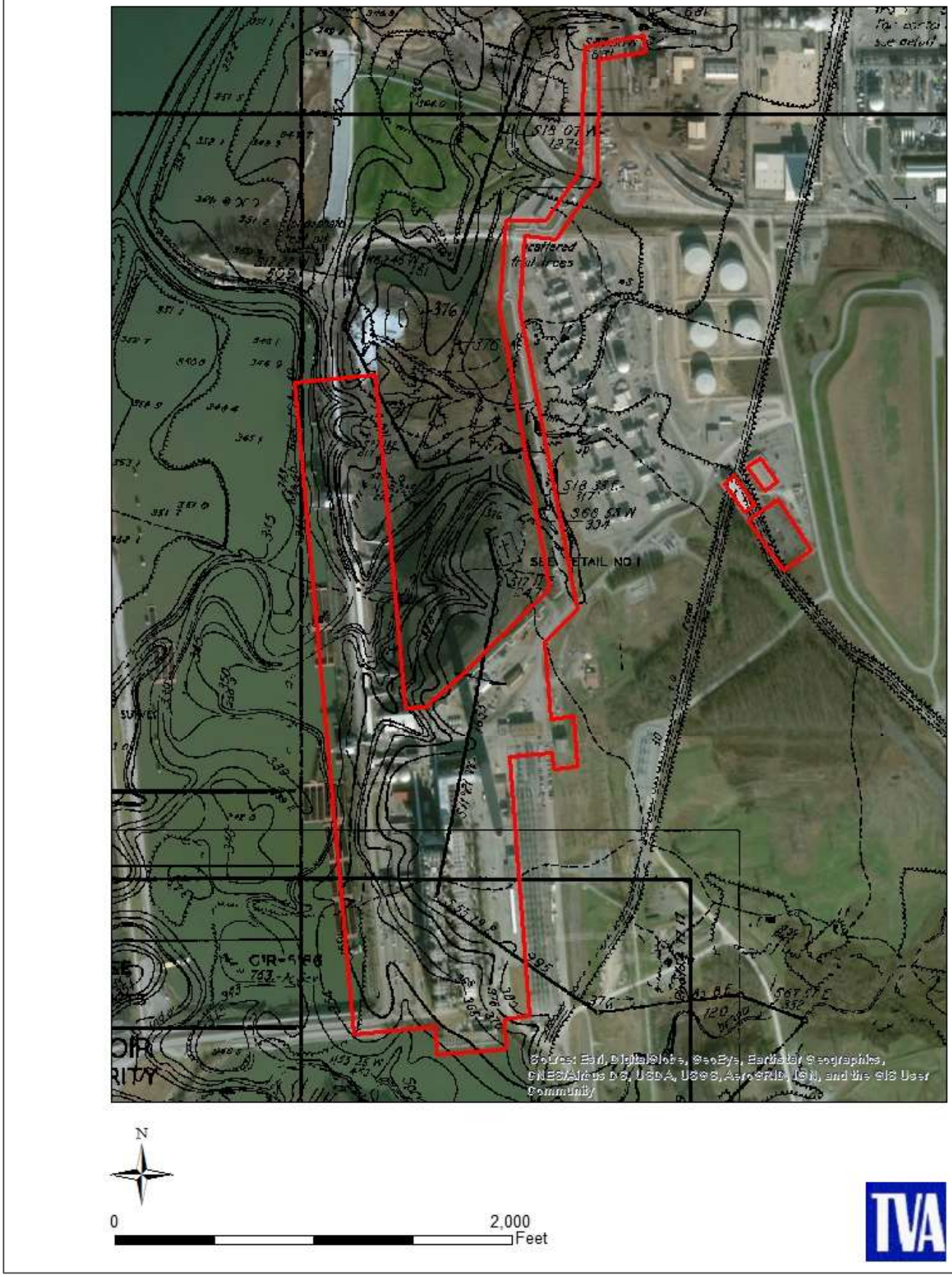


Figure 2. TVA's 1937 land acquisition map for Kentucky Reservoir, overlaid on the archaeological APE.

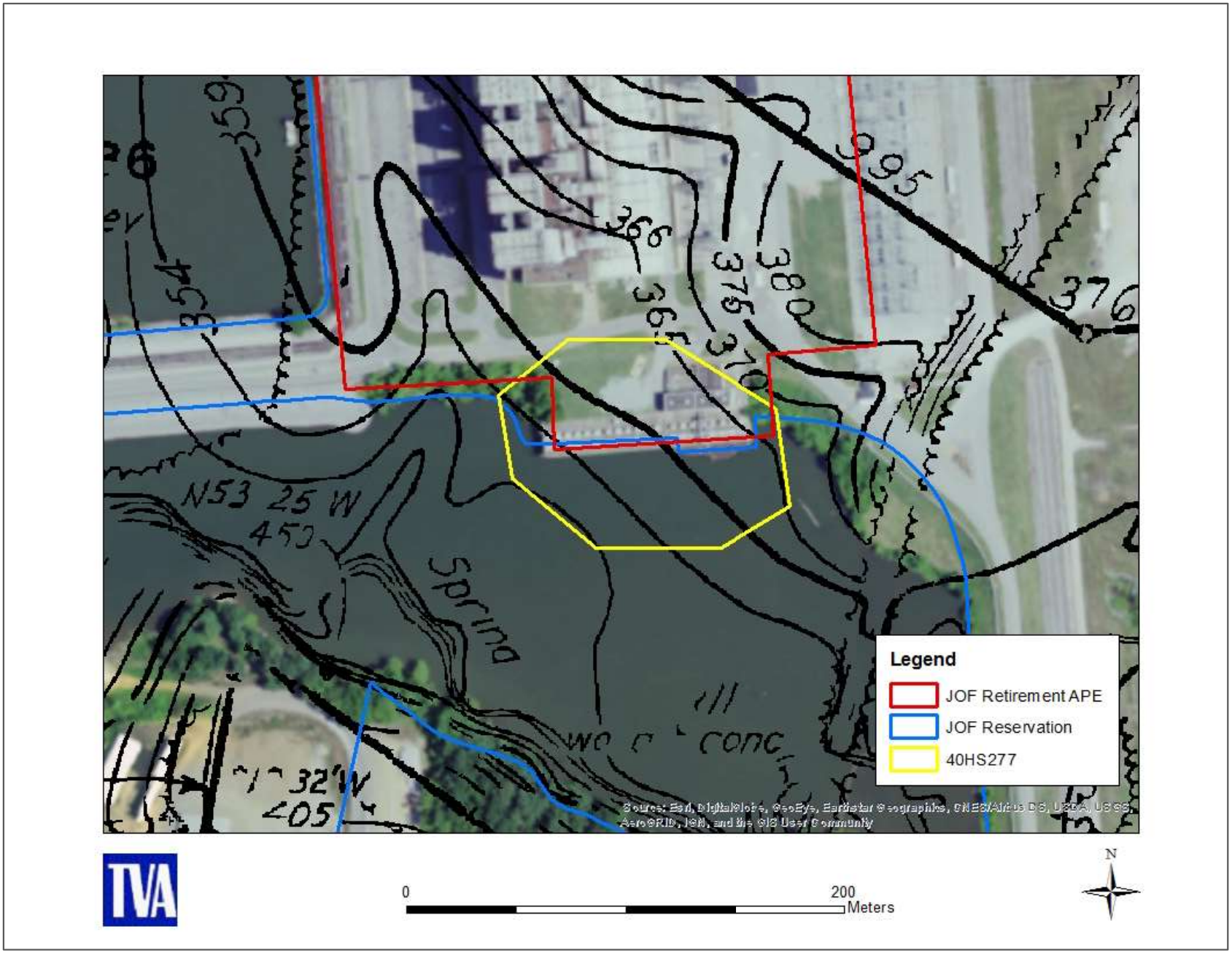


Figure 3. Recorded location of 40HS277, currently occupied by the JOF condenser water intake and water treatment plant. Overlay shows TVA's 1937 land acquisition map, with original contours. Normal summer pool elevation of Kentucky Reservoir is 359 feet amsl.

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

February 14, 2018

Mr. Clinton E. Jones
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902

RE: TVA / Tennessee Valley Authority, Johnsonville Fossil Plant Deconstruction, , Humphreys County, TN

Dear Mr. Jones:

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

Considering the information provided, we concur that no historic properties eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Casey Lee (615 253-3163).

Your cooperation is appreciated.

Sincerely,

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

EPM/cjl

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

March 21, 2018

Mr. E. Patrick McIntyre, Jr.
Executive Director
Tennessee Historical Commission
2941 Lebanon Road
Nashville, Tennessee 37243-0442

Dear Mr. McIntyre:

TENNESSEE VALLEY AUTHORITY (TVA), JOHNSONVILLE FOSSIL PLANT, COAL YARD CLOSURE, COAL YARD RUNOFF POND CLOSURE, PROCESS WATER BASIN, AND BORROW PIT, HUMPHREYS COUNTY, TENNESSEE

TVA has ended power generation at the Johnsonville Fossil Plant (JOF) in Humphreys County, Tennessee. Earlier this year we consulted with your office regarding TVA's proposed deconstruction of the generating facility. Our offices agreed that deconstruction of JOF would result in no effects on historic properties. TVA proposes four additional actions at JOF related to the deconstruction of JOF:

- Closure of the JOF Coal Yard (CY)
- Closure of the JOF Coal Yard Runoff Pond (CYRP)
- Construction of a Process Water Basin (PWB)
- Development of a Borrow Site

Figure 1, below, shows the location of each of these proposed actions. The JOF CY is a graded area where TVA stockpiled coal prior to pulverizing it and feeding it into the plant's generating units. The JOF CYRP is a pond that was constructed to hold runoff from the CY. TVA proposes to close the CY one of three ways; capping the CY in its current footprint, consolidating the material in the CY footprint and capping it, or removing the CY material to an offsite landfill and covering the CY with soil and vegetation. TVA would also close the CYRP and construct a new storm water outfall to convey drainage from the site to Kentucky Lake. The PWB would be constructed to capture and treat storm water and process water flows from the Johnsonville gas plant site (also called the combustion turbine or "CT" site). TVA would construct the PWB within the footprint of the CY and/or the CYRP. TVA would obtain fill material for the CY, PWB, and CYRP projects from a new soil borrow site located south of the JOF generating facility.

The proposed actions would necessitate use of a construction laydown yard. Two existing laydowns areas located east of the plant switchyard would be utilized for this purpose. The actions also require the use of haul roads. Existing paved and gravel roads would be used as haul roads (the laydown yard and haul roads are shown in Figure 1). TVA does not consider

the continued use of an existing construction laydown, or the use of existing paved/gravel roads as haul roads, to have potential to result in effects on historic properties. TVA determined that the area of potential effects (APE) for archaeological sites includes the CY, the CYRP, and the proposed borrow site.

Part of the area affected by the JOF Deconstruction project extends into the CY, and was discussed in our January 25, 2018 letter to your office concerning that project. Figure 2, below, shows the CY and CYRP areas with modern satellite imagery. Figure 3 shows an overlay of TVA's 1937 land acquisition map for Kentucky Reservoir on satellite imagery of these areas. In evaluating the potential for intact Holocene deposits in the CY and CYRP areas, we examined TVA's 1937 land acquisition map for Kentucky Reservoir, TVA's original plant grading plan from 1949, current satellite imagery (as shown in Figure 1), and previous archaeological investigations. Prior to construction of JOF these areas consisted of two branches of a small creek and its terraces. As documented in TVA's technical report on JOF (TVA 1958:207-208) and by the 1949 grading plan, TVA construction crews excavated and graded soil to depths ranging from approximately 3 feet to nearly 20 feet throughout the CY and surrounding area during plant construction (JOF was constructed between 1949 and 1952). Based on these historical documents TVA finds that the CY and CYRP areas have no potential to contain intact archaeological sites due to these past land disturbing activities.

TVA proposes to borrow soil from an approximately 164-acre area south of the generating site (see Figure 1). The proposed soil borrow straddles an existing transmission line corridor. TVA performed a Phase I Archaeological survey of the portion of the proposed soil borrow that lies in the transmission line corridor in 2016, and consulted with your office on the findings. The survey identified no archaeological sites, and your office agreed (by letter dated March 20, 2017) with TVA's finding of "no historic properties affected".

In order to identify archaeological sites in the remaining portion of the proposed soil borrow, which encompasses approximately 100 acres, TVA retained Tennessee Valley Archaeological Research (TVAR) to perform a Phase I Archaeological survey. Enclosed are two copies of the draft report, titled, *A Phase I Archaeological Survey of a Proposed Borrow Pit in New Johnsonville, Humphreys County, Tennessee*.

The survey included the excavation of 470 shovel test pits in the APE. One isolated find, consisting of three flakes, was identified. The survey identified no archaeological sites. TVAR recommends that the isolated find is ineligible for inclusion in the National Register of Historic Places. The survey findings indicate that the majority of the APE has been affected by severe soil erosion.

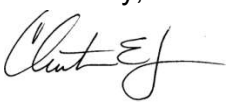
TVA has read the enclosed report and agrees with the authors' findings and recommendations. Based on this survey, TVA finds that the proposed undertaking would have no effect on historic properties.

Pursuant to 36 CFR Part 800.4(d)(1), we are seeking your concurrence with TVA's finding that no historic properties would be affected by the proposed undertaking.

Pursuant to 36 CFR Part 800.3(f)(2), TVA is consulting with 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.

Should you have any questions or comments, please contact Steve Cole in Knoxville by email, sccole0@tva.gov or by phone, (865) 632-2551.

Sincerely,



Clinton E. Jones
Manager
Cultural Compliance

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

INTERNAL COPIES ONLY, NOT TO BE INCLUDED WITH OUTGOING LETTER:

Sheliah D. Baker, LP 5P-C
A. Michelle Cagley, KFP 1T-KST
Stephen C. Cole, WT 11D-K
Carol Freeman, BR 4A-C
Marty M. Gamble, WT 11C-K
Susan R. Jacks, WT 11C-K
Stacey S. McCluskey, OSA 1D-M
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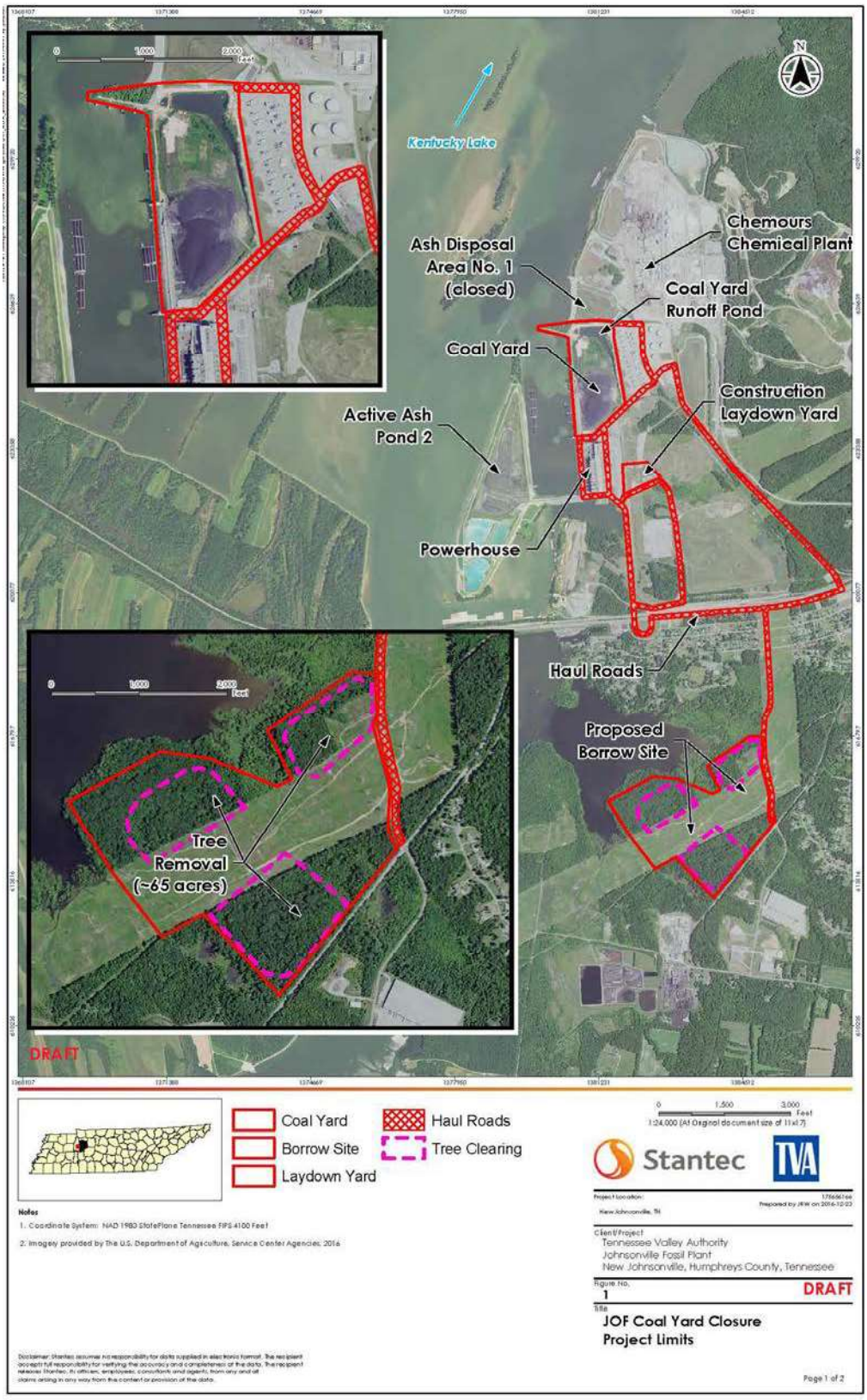

Figure 1. Locations of the proposed actions.

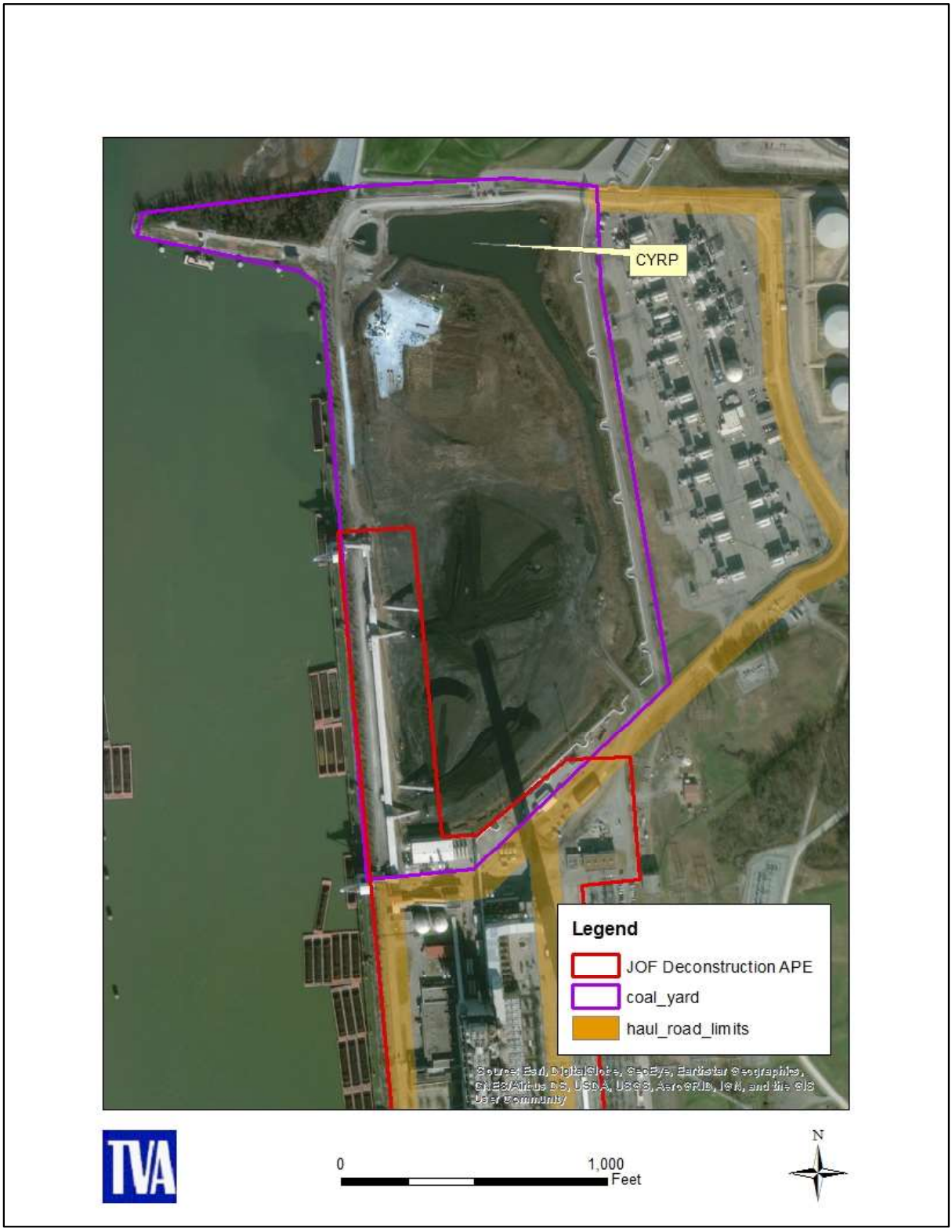

Figure 2. Location of the CY, CYRP, and haul roads in relation to the JOF Deconstruction APE.

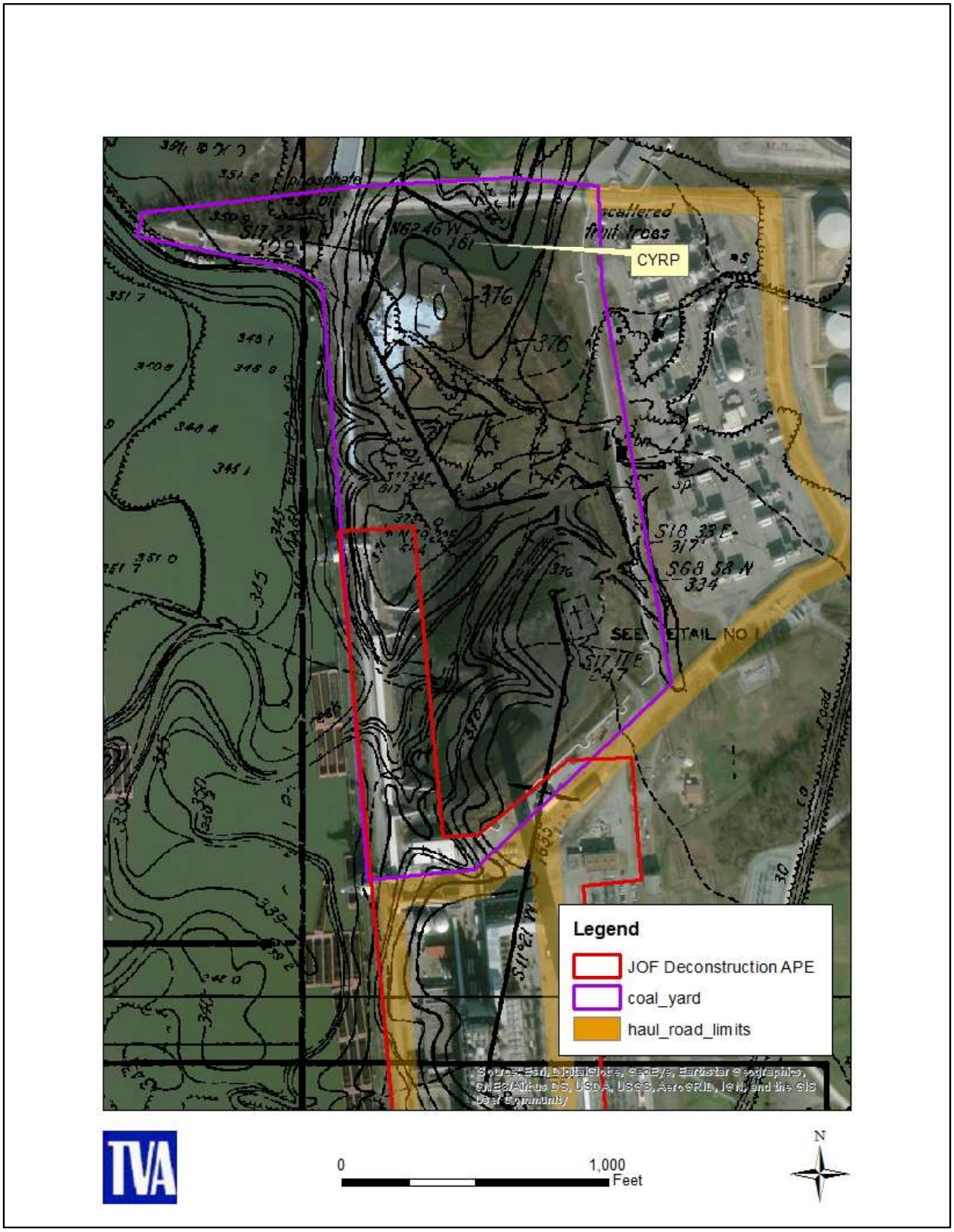

Figure 3. Project area with overlay of the 1937 land acquisition map.

A Phase I Archaeological Survey of a Proposed Borrow Pit in New Johnsonville, Humphreys County, Tennessee

Tennessee Valley Archaeological Research

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

April 5, 2018

Mr. Clinton E. Jones
Tennessee Valley Authority
Biological and Cultural Compliance
400 West Summit Hill Drive
Knoxville, TN 37902

RE: TVA / Tennessee Valley Authority, Johnsonville Fossil Plant Coal Yard Closure, Coal Yard Runoff Pond Clouser, Process Water Basin, and Borrow Pit, New Johnsonville, Humphreys County, TN

Dear Mr. Jones:

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

Considering the information provided, we concur that no historic properties eligible for listing in the National Register of Historic Places will be affected by this undertaking. If project plans are changed or archaeological remains are discovered during project construction, please contact this office to determine what further action, if any, will be necessary to comply with Section 106 of the National Historic Preservation Act. Questions or comments may be directed to Jennifer Barnett (615) 687-4780.

Your cooperation is appreciated.

Sincerely,

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

EPM/jmb