FINAL

ENVIRONMENTAL ASSESSMENT

PROPOSED LAND ACQUISITION FOR THE CONSTRUCTION AND OPERATION

OF THE

CHATTANOOGA NATIONAL CEMETERY REPLACEMENT

CHATTANOOGA, TENNESSEE AREA

U.S. DEPARTMENT OF VETERANS AFFAIRS

OFFICE OF CONSTRUCTION AND FACILITIES MANAGEMENT
425 I STREET, NW
WASHINGTON, DC 20001

May 3, 2022

EXECUTIVE SUMMARY

This environmental assessment (EA) has been prepared to identify, analyze, and document the potential physical, environmental, cultural, and socioeconomic impacts associated with the U.S. Department of Veterans Affairs' (VA's) proposed acquisition of approximately 225 to 270 acres of land and the construction of and operation of a new National Cemetery in the Chattanooga, Tennessee area to replace the existing Chattanooga National Cemetery. The existing Chattanooga National Cemetery has limited space for new interments and is projected to reach its burial capacity within the next 10 years. This EA evaluates the site acquisition and the initial phase of cemetery development (approximately 40 to 60 acres). Supplemental NEPA analyses will be conducted for subsequent phases of cemetery development. This EA has been prepared as required in accordance with the National Environmental Policy Act of 1969 ([NEPA]; 42 United States Code 4321 *et seq*.), the President's Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and *Environmental Effects of the Department of Veterans Affairs Actions* (38 CFR Part 26), and in accordance with *VA NEPA Interim Guidance for Projects* (2010).

Proposed Action

The Proposed Action is to acquire at least 200 acres of land within a 30-mile radius of downtown Chattanooga for the construction and operation of a new replacement cemetery for the Chattanooga National Cemetery. The new cemetery would provide burial facilities for Veterans and eligible family members in the Chattanooga area for at least 100 years.

VA would acquire the land in 2022 and would begin the cemetery master planning and design approximately six months after site acquisition. The master planning and design process is anticipated to require two years. VA would follow the National Cemetery Administration (NCA) *Facilities Design Guide* in the proposed National Cemetery design. The cemetery would include a gated entrance and perimeter fencing, an administration and public information building, an assembly area, a memorial wall, committal shelters, a loop road through the cemetery, casket gravesites, columbarium niches, and a maintenance building/facility. The cemetery would be developed in phases, with the first phase (approximately 40 to 60 acres) including the buildings and infrastructure needed to support the first 15 years of burial capacity. It is anticipated the first phase of cemetery development would be completed within two years of the completion of the cemetery design and the cemetery would open in approximately 2027.

The proposed National Cemetery would be open to the public every day throughout the year. VA anticipates approximately 15 to 25 funeral processions per week at the cemetery, averaging approximately 10 to 20 cars per procession. VA estimates that the cemetery, once fully established, would receive approximately 300 to 400 visitors per day.

Purpose and Need

The purpose of the Proposed Action is to establish a new National Cemetery of sufficient size and capacity to serve the burial needs of Veterans and their family members in the Chattanooga area for at least the next 100 years.

The Proposed Action is needed to ensure the burial needs of area Veterans are met once the burial space at the existing Chattanooga National Cemetery is exhausted. The existing Chattanooga National Cemetery is the only National Cemetery in the region and is nearing its burial capacity; VA estimates that the existing burial space at the cemetery will be depleted in 10 years.

Alternatives

This EA examines in depth two Action Alternatives for the implementation of the Proposed Action (Site 1 and Site 2) and the No Action Alternative:

- **Proposed Action Alternative 1 – Site 1:** Site 1 consists of approximately 270 acres of land located south of the intersection of Hiwassee Highway and Chickamauga Lake/Tennessee River in an unincorporated area of Meigs County, Tennessee, approximately 29 miles northeast of downtown Chattanooga. Site 1 is located in a rural area consisting of mostly agricultural and low-density residential properties. Site 1 consists of unimproved agricultural land and wooded land. A small overgrown, derelict cemetery (Old Browder Cemetery) is located in an area of trees in the central portion of the site, but is located on its own 0.46-acre parcel that is not part of the site. Old Browder Cemetery would remain in place as an independent cemetery located within the National Cemetery.
- **Proposed Action Alternative 2 – Site 2:** Site 2 consists of approximately 225 acres of land located northeast of the intersection of Bostontown Road and Kelly Cross Road in an unincorporated area of Sequatchie County, Tennessee, approximately 25 miles north of downtown Chattanooga. Site 2 is located in a rural area consisting of mostly agricultural land and low-density residential properties. The site is mostly unimproved agricultural land and wooded land with a house and two sheds located in the western portion of the site. The residence and associated structures would likely be removed during initial cemetery development. An intermittent stream is located in the western portion of the site and McWilliams Creek runs along the eastern site boundary.
- **No Action Alternative:** Under the No Action Alternative, the Proposed Action would not be implemented. NCA would continue to provide burial services at the existing Chattanooga National Cemetery until the existing capacity is reached, after which the cemetery would be maintained and open for visitors, but would be closed for new interments. Veterans and their families residing in the Chattanooga area would no longer be served by a proximate National Cemetery and would be required to travel a substantial distance for burial at a National Cemetery. The Action Alternative sites would likely remain mostly undeveloped agricultural land for the foreseeable future.

The Proposed Action Alternative sites provide additional land necessary to meet the regional cemetery requirements of VA. The No Action Alternative would not enable VA to provide adequate National Cemetery facilities in the Chattanooga area, and thus, does not meet the purpose of or need for the Proposed Action. However, the No Action Alternative is assessed in this EA to provide a benchmark for comparing potential impacts of the Proposed Action, as required under the CEQ Regulations.

Affected Environment and Environmental Consequences

The affected environment of the Proposed Actional Alternative sites and their immediate surroundings, or the region of influence of the Proposed Action, is discussed in Section 3 of this EA.

The three considered alternatives, the two Proposed Action Alternatives and the No Action Alternative, are evaluated in this EA to determine their potential direct or indirect impact(s) on the physical, environmental, cultural, and socioeconomic aspects of the Proposed Action's region of influence.

Technical areas evaluated in this EA include:

- *Aesthetics*
- *Air Quality*
- *Cultural Resources*
- *Geology, Topography, and Soils*
- *Hydrology and Water Quality*
- *Wildlife and Habitat*
- *Noise*
- *Land Use*
- *Floodplains, Wetlands, and Coastal Zone Management*
- *Socioeconomics*
- *Community Services*
- *Solid Waste and Hazardous Materials*
- *Transportation and Parking*
- *Utilities*
- *Environmental Justice*
- *Cumulative Impacts*
- *Potential for Generating Substantial Controversy*

Potential Effects of the Proposed Action Alternatives

The Proposed Action would result in the impacts identified throughout Section 3 and summarized in the table below. These include potential short-term and/or long-term adverse impacts to aesthetics, air quality, geology and soils, hydrology and water quality, wildlife and habitat, noise, land use, wetlands, solid waste and hazardous materials, transportation, utilities, and environmental justice. All of these potential impacts are less than significant and would be further reduced through careful implementation of the general best management practices (BMPs); management, minimization, and avoidance measures; and compliance with regulatory requirements, as identified in Section 4.

The Proposed Action Alternatives would enable VA to provide proximate National Cemetery burial benefits to the regional Veteran community for at least 100 years after the existing Chattanooga National Cemetery interment space is depleted, a significant beneficial socioeconomic effect.

Potential Effects of the No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. No beneficial impacts attributable to the Proposed Action would occur. Veterans and their families residing in the Chattanooga area would continue to use Chattanooga National Cemetery until space is no longer available. Once Chattanooga National Cemetery reaches capacity, Veterans and their families in the region would be required to travel much longer distances to the nearest National Cemetery for burial and subsequent visits, at increased cost and time.

Summary of Impact Analysis			
Resource Area	**Proposed Action Alternative 1 – Site 1**	**Proposed Action Alternative 2 – Site 2**	**No Action**
Aesthetics	**Minor short-term and long-term, direct adverse impacts**. Minor short-term direct adverse visual impacts during cemetery construction (heavy machinery, land disturbance, and dust). Minor long-term direct adverse aesthetic impacts as a result of the cemetery development. Cemetery would be designed in concert with the natural topography and features and would have low visual impact, generally consistent with surrounding land uses. Cemetery design would include unimproved buffers and/or berms along boundaries with adjacent residences.		No impact

<table>
<tr><th colspan="4">Summary of Impact Analysis</th></tr>
<tr><th>Resource Area</th><th>Proposed Action
Alternative 1 – Site 1</th><th>Proposed Action
Alternative 2 – Site 2</th><th>No Action</th></tr>
<tr><td rowspan="2">Air Quality</td><td colspan="2">Minor short-term and long-term, direct adverse and beneficial impacts.
Minor short-term direct adverse impact due to construction dust and particulate matter managed through BMPs.</td><td rowspan="2">Indirect long-term impacts associated with vehicular air emissions as Veterans travel greater distances to other National Cemeteries.</td></tr>
<tr><td>Minor local long-term direct adverse impacts due to vehicle emissions from visitors to the cemetery, less than existing emissions from adjacent Hiwassee Highway. Regional long-term reduction in vehicle emissions from visitors traveling to more distant cemeteries (beneficial impact).</td><td>Minor local long-term direct adverse impacts due to vehicle emissions from visitors to the cemetery. Regional long-term reduction in vehicle emissions from visitors traveling to more distant cemeteries (beneficial impact).</td></tr>
<tr><td>Cultural Resources</td><td colspan="2">No impact.
No NRHP-eligible historic buildings or districts were identified at either site or within the surrounding areas and no NRHP-eligible archaeological resources were identified at either site. No historic properties would be affected.
TN SHPO concurred with VA’s no adverse effect determination.</td><td>No impact</td></tr>
<tr><td>Geology and Soils</td><td colspan="2">Minor short-term and long-term direct adverse impacts.
Minor short-term direct adverse soil erosion and sediment impacts during cemetery construction managed through BMPs.
Minor long-term direct adverse impacts to prime farmland soils being converted to non-agricultural uses.</td><td>Minor soil erosion impacts from continued agricultural use of the sites</td></tr>
<tr><td>Hydrology and Water Quality</td><td colspan="2">Minor short-term direct adverse impact.
Minor short-term direct adverse stormwater runoff impacts during cemetery construction managed through BMPs.
Cemetery would be designed in concert with the current drainage patterns and would include on-site stormwater retention with no/negligible long-term water quality impact.</td><td>Negligible long-term impact from agricultural use</td></tr>
</table>

<table>
<tr><th colspan="4">Summary of Impact Analysis</th></tr>
<tr><th>Resource Area</th><th>Proposed Action
Alternative 1 – Site 1</th><th>Proposed Action
Alternative 2 – Site 2</th><th>No Action</th></tr>
<tr><td rowspan="2">Wildlife and Habitat</td><td colspan="2">Minor short-term direct adverse impacts.
Minor potential short-term adverse impact during construction. Both sites provide summer/fall roosting habitat for federally-listed Indiana and northern long-eared bats. Tree clearing would be conducted outside of the bat roosting season. If tree clearing cannot be conducted outside of bat roosting season, VA would consult with the USFWS and implement measures to minimize disturbance to roosting bats.</td><td rowspan="2">No impact</td></tr>
<tr><td>Site 1 provides potential nesting habitat for bald eagles and herons, although no nests were observed. Prior to construction, a qualified biologist would inspect the site for active nests. If active nests are found, VA would coordinate with TWRA and USFWS to determine appropriate conservation measures.</td><td>The wooded area along McWilliams Creek (Site 2) provides potential habitat for the federally-listed large-flowered skullcap. It is anticipated this area, along the site boundary, would not be disturbed by the cemetery development.</td></tr>
<tr><td>Noise</td><td colspan="2">Minor short-term and long-term, direct and indirect adverse impact.
Minor short-term direct adverse heavy equipment noise impacts and indirect adverse material transportation impacts during cemetery development controlled through construction BMPs.
Negligible to minor long-term operational direct adverse noise impacts associated with occasional heavy equipment use and ceremonial rifle fire (approximately 4 to 6 times per day) during weekday business hours.</td><td>Negligible long-term impact from agricultural use</td></tr>
</table>

Summary of Impact Analysis			
Resource Area	**Proposed Action Alternative 1 – Site 1**	**Proposed Action Alternative 2 – Site 2**	**No Action**
Land Use	**Minor long-term direct adverse impact**. Minor long-term direct adverse impact as a result of the site's conversion from agricultural land into a cemetery. However, Site 1 has already been rezoned for medium density residential development (that did not occur). Cemetery would be generally consistent with surrounding land uses.	**Minor long-term direct adverse impact**. Minor long-term direct adverse impact as a result of the site's conversion from mostly undeveloped agricultural land into a cemetery. Cemetery would be generally consistent with surrounding land uses.	No impact
Floodplains, Wetlands, and Coastal Zone Management	**Minor short-term and long-term direct adverse wetlands impact.** Site 1 contains three small wetlands that total less than one acre. The cemetery would be designed to avoid the identified wetland areas, to the extent possible. If the wetlands cannot be fully avoided, VA would obtain all necessary permits and approvals from USACE and TDEC DWR, and would implement any required mitigation measures.	**Minor short-term and long-term direct adverse wetlands impact.** Site 2 is bordered by McWilliams Creek and contains a tributary to McWilliams Creek and an approximately 0.11-acre wetland on-site. The cemetery would be designed to avoid the identified wetland areas and streams, to the extent possible. If the wetlands and streams cannot be fully avoided, VA would obtain all necessary permits and approvals from USACE and TDEC DWR, and would implement any required mitigation measures.	No impact
	No floodplains impacts are anticipated. No coastal zone impacts; Tennessee has no designated coastal zones.		

Summary of Impact Analysis			
Resource Area	**Proposed Action Alternative 1 – Site 1**	**Proposed Action Alternative 2 – Site 2**	**No Action**
Socioeconomics	**Minor short-term, indirect beneficial impacts and long-term direct beneficial impacts.** Minor short-term indirect beneficial impacts to local economy as a result of temporary construction jobs. Significant long-term direct beneficial impact as Proposed Action would provide a regionally proximate National Cemetery of sufficient size for Chattanooga area Veterans and their families for at least 100 years.		Inadequate VA cemetery options – long-term direct adverse impact to local Veterans.
Community Services	**No/negligible impact.** Proposed cemetery would put minimal additional load on the local police department and other community services.		No impact
Solid and Hazardous Materials	**Minor short-term and long-term direct adverse impacts.** Potential minor short-term and long-term direct adverse impacts from petroleum/hazardous substance storage and handling during cemetery construction and operation managed through standard BMPs.		Minor long-term impact from agricultural use
Transportation and Parking	**Minor short-term and long-term, direct adverse transportation impacts.** Minor short-term direct adverse impacts associated with cemetery construction traffic on local roads. Minor long-term direct adverse traffic impacts during cemetery operation. Traffic impact analyses found area intersections would continue to operate at LOS A and B during AM and PM peak hours during cemetery operation. Periodic short-duration impacts associated with funeral processions. Infrequent higher traffic volumes and potential impacts associated with national holidays and special events. No parking impacts, proposed cemetery would include adequate on-site parking.		No impact

Summary of Impact Analysis			
Resource Area	**Proposed Action Alternative 1 – Site 1**	**Proposed Action Alternative 2 – Site 2**	**No Action**
Utilities	**Minor long-term, direct adverse impact.** Negligible short-term local utility impacts; most utilities needed by the cemetery are already located adjacent to the sites. No additional connections to distant lines are anticipated. Minor potential long-term direct adverse utility impact associated with the use of municipal water for cemetery irrigation. The availability and capacity of the municipal water for cemetery irrigation would be determined during the cemetery design. VA would install an irrigation well, if necessary.		No impact
Environmental Justice	**Minor short-term and long-term direct adverse impact and minor long-term beneficial impact.** Site 1 is located in an area with a slightly larger than average low-income population. Construction and operational impacts (dust, noise and traffic) on area residents would be minor and minimized through BMPs.	**Minor long-term beneficial impact.** Regional low-income and minority Veterans and their families would benefit from the closer cemetery, a minor long-term beneficial impact.	No impact

Cumulative Impacts

This EA also examines the potential cumulative effects of implementing each of the considered alternatives. This analysis finds that the Proposed Action Alternatives, with the implementation of the BMPs; management, minimization, and avoidance measures; and regulatory compliance measures specified in this EA, would not result in significant adverse cumulative impacts to onsite or regional, natural or cultural resources, and would maintain or enhance the socioeconomic environment of the area through the long-term provision of required National Cemetery facilities for regional Veterans and their families. The No Action Alternative would not produce these potential beneficial socioeconomic gains.

Agency and Public Involvement

Agencies consulted for this EA include:

- U.S. Fish and Wildlife Service
- U.S. Environmental Protection Agency
- U.S. Army Corps of Engineers
- U.S. Department of Agriculture Natural Resource Conservation Service
- Tennessee Department of Agriculture

- Tennessee Department of Environmental Conservation (various divisions)
- Tennessee Department of Transportation
- Tennessee Wildlife Resources Agency
- Tennessee Valley Authority
- Southeast Tennessee Development District
- Meigs County (various departments)
- Sequatchie County

Responses were received from U.S. Environmental Protection Agency, Tennessee Department of Environmental Conservation (TDEC) Division of Air Pollution Control (APC), TDEC Tennessee Division of Archaeology, TDEC Division of Underground Storage Tanks and TDEC Division of Water Resources. Input provided by these agencies is summarized in Section 5. Agency information and comments have been incorporated into this EA, as and where appropriate. Copies of relevant correspondence can be found in Appendix B.

In December 2021, VA initiated National Historic Preservation Act (NHPA) Section 106 consultation with the Advisory Council on Historic Preservation, Tennessee Historical Commission (Tennessee State Historic Preservation Office, TN SHPO), the National Association of Tribal Historic Preservation Officers, the National Trail of Tears Association, and 17 federally recognized Native American Tribes with possible geographic or cultural affiliation with the areas of the sites. The Section 106 consultation letters included a description of VA's proposed undertaking (Proposed Action), definition of the areas of potential effects, identification of historic properties, and VA's finding of effects on historic properties (no adverse effect). VA invited the agencies and Tribes to provide input regarding the Proposed Action.

TN SHPO concurred with VA's findings and no adverse effect determination in response letters dated December 27, 2021. No other agencies or Tribes have responded or elected to participate in the Section 106 consultation process. Section 106 agency and Tribal information and comments have been incorporated in this EA (Section 3.4) and are summarized in Section 6. Section 106 correspondence is provided in Appendix C.

VA published and distributed the Draft EA for a 30-day public comment period, as announced by a Notice of Availability (NOA) published in the Chattanooga Times Free Press, a local newspaper of general circulation, on March 20 and 23, 2022. A copy of the Draft EA was made available for public review on the VA Office of Construction and Facilities Management Environmental Program website: (https://www.cfm.va.gov/environmental/index.asp). VA also emailed notification of the Draft EA for review and comment, with a link to the Draft EA on VA's website, to each of the government agencies and Tribes that were contacted during the NEPA scoping and Section 106 consultation, and State and Federal congressional representatives. The TDEC APC and Tennessee State Senator, Mr. Bo Watson provided comments on the Draft EA. These comments were considered in preparing the Final EA, as appropriate, and area summarized in Section 5.2.

CONCLUSIONS

This EA concludes there would be no significant adverse impact, either individually or cumulatively, to the human environment associated with either of the Proposed Action Alternatives, provided the management, minimization and regulatory compliance measures described in this EA are implemented.

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ACRONYMS AND ABBREVIATIONS

AADT	annual average daily traffic
ADT	average daily traffic
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act of 1990
amsl	above mean sea level
APC	Air Pollution Control
APE	Area of Potential Effects
bgs	below ground surface
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CZMP	Coastal Zone Management Program
CNC	Chattanooga National Cemetery
CRS	Cultural Resources Survey
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dBA	decibels, A-weighted scale
DWR	Division of Water Resources
EA	Environmental Assessment
EO	Executive Order
ERG	Environmental Research Group
ESA	Endangered Species Act
FBO	Federal Business Opportunity
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FPPA	Farmland Protection Policy Act
HAP	Hazardous Air Pollutants
ICRIP	Initial Cultural Resource Impact Prediction
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
LOS	level of service
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NCA	National Cemetery Administration
NEPA	National Environmental Policy Act of 1969
NHL	National Historic Landmark
NHPA	National Historic Preservation Act
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
NWIS	National Water Information System
OSHA	Occupational Safety and Health Administration

Phase I ESA	Phase I Environmental Site Assessment
RCRA	Resource Conservation and Recovery Act
RONA	Record of Non-Applicability
ROW	right-of-way
ROW 10	Row 10 Historic Preservation Solutions
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SR	State Route
SWPPP	Storm Water Pollution Prevention Plan
TCA	Tennessee Code Annotated
TDEC	Tennessee Department of Environment and Conservation
TDOA	Tennessee Department of Archaeology
TDOT	Tennessee Department of Transportation
TEHP	Tennessee Earthquake Hazards Program
THC	Tennessee Historical Commission
tpy	tons per year
TTL	TTL Associates, Inc.
TWRA	Tennessee Wildlife Resource Agency
US	United States
USACE	United States Army Corps of Engineers
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VA	Department of Veterans Affairs
VEC	Volunteer Energy Cooperative
WOTUS	Waters of the US
WWC	wet weather conveyance

1.0 INTRODUCTION, INCLUDING PURPOSE OF AND NEED FOR THE ACTION

1.1 Introduction

This environmental assessment (EA) has been prepared as required in accordance with the National Environmental Policy Act of 1969 ([NEPA]; 42 United States Code [USC] 4321 et seq.), the President's Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), *Environmental Effects of the Department of Veterans Affairs Actions* (38 CFR Part 26), and the Department of Veterans Affairs (VA's) *NEPA Interim Guidance for Projects* (U.S. Department of Veterans Affairs 2010). Federal agencies are required to consider the environmental effects of their proposed actions. This EA is required to determine if VA's Proposed Action would have significant environmental impacts.

This EA has been prepared to identify, analyze, and document the potential physical, environmental, cultural, and socioeconomic impacts associated with VA's proposed acquisition of approximately 225 to 270 acres of land for the construction and operation of a new National Cemetery in the Chattanooga, Tennessee area to replace the existing Chattanooga National Cemetery. The existing Chattanooga National Cemetery has limited space for new interments and is projected to reach its burial capacity within the next 10 years. This EA evaluates the site acquisition and the initial phase of cemetery development (approximately 40 to 60 acres). Supplemental NEPA analyses will be conducted for subsequent phases of cemetery development.

In accordance with the cited regulations, this EA allows for public input into the federal decision-making process; provides federal decision-makers with an understanding of potential environmental effects of their decisions, before making these decisions; identifies measures the federal decision-maker could implement to reduce potential environmental effects; and documents the NEPA process.

1.2 Background

One of the primary objectives of the VA burial program is to ensure that the burial needs of Veterans and eligible family members are met. The VA National Cemetery Administration (NCA) further defines this objective on the assumption that the burial needs of Veterans are met if they have reasonable access to burial options (whether for caskets, remains or cremated remains, either in-ground or in a columbarium) in a National or VA-funded State Veterans Cemetery within 75 miles of the Veteran's place of residence.

Chattanooga National Cemetery, located at 1200 Bailey Avenue within the City of Chattanooga, is the only existing National Cemetery in the Chattanooga area, the primary population center of southeast Tennessee, northwest Georgia, and northeast Alabama. The next closest National Cemetery, Georgia National Cemetery in Canton, Georgia, is located approximately 85 miles to the southeast. The locations of the existing National Cemeteries and VA-funded State Cemeteries in the region are shown on Figure 1-1.

The existing Chattanooga National Cemetery was established in 1863, is fully developed, and has limited remaining space for additional burials. VA estimates cemetery space for first interments will be exhausted within the next 10 years. Land contiguous to the existing Chattanooga National Cemetery is fully developed and is not available to acquire for cemetery expansion. Therefore, VA concluded that a new replacement National Cemetery in the Chattanooga area best suited the needs of area Veterans and their families. Two sites (Site 1 and Site 2) are being evaluated for the proposed new replacement cemetery. The general locations of the two prospective cemetery sites are also shown on Figure 1-1.

Figure 1-1 Locations of National Cemeteries and State Veterans Cemeteries in the Region

1.3 Purpose and Need

The purpose of the Proposed Action is to establish a new National Cemetery of sufficient size and capacity to serve the burial needs of Veterans and their family members in the Chattanooga area for at least the next 100 years.

The Proposed Action is needed to ensure the burial needs of area Veterans are met once the burial space at the existing Chattanooga National Cemetery is exhausted. The existing Chattanooga National Cemetery is the only National Cemetery in the region and is nearing its burial capacity; VA estimates that the existing burial space at the cemetery will be depleted in 10 years.

1.4 Decision-Making

This EA has been prepared to identify, analyze, and document the potential physical, environmental, cultural, and socioeconomic impacts associated with VA's proposed acquisition and development of approximately 225 to 270 acres of land within the Chattanooga area to serve as a new replacement National Cemetery. This EA evaluates the site acquisition and the initial phase of cemetery development (approximately 40 to 60 acres). Supplemental NEPA analyses will be conducted for subsequent phases of cemetery development.

VA, as a federal agency, is required to incorporate environmental considerations into their decision-making process for the actions they propose to undertake. This is done in accordance with the regulations identified in Section 1.1.

Ultimately, VA will decide, in part based on the analysis presented in this EA and after having taken potential environmental, cultural, and socioeconomic effects into account, whether VA should implement the Proposed Action, and, as appropriate, carry out management, minimization, and mitigation measures (if necessary) to reduce effects on the environment.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 Introduction

This Section provides information regarding the Proposed Action and its alternatives, including those that VA initially considered, but eliminated, and the reasons for eliminating them. The screening criteria and the process developed and applied by VA to refine the number of reasonable alternatives are described to provide an understanding of VA's rationale for analyzing two Proposed Action Alternatives and the No Action Alternative in this EA.

2.2 Proposed Action

The Proposed Action is to acquire at least 200 acres of land within a 30-mile radius of downtown Chattanooga for the construction and operation of a new replacement cemetery for the Chattanooga National Cemetery. The new cemetery would provide burial facilities for Veterans and eligible family members in the Chattanooga area for at least 100 years.

The proposed National Cemetery would be open to the public every day throughout the year. VA anticipates approximately 15 to 25 funeral processions per week at the cemetery, averaging approximately 10 to 20 cars per procession. VA estimates that the cemetery, once fully established, would receive approximately 300 to 400 visitors per day.

VA would acquire the land in 2022 and would begin the cemetery master planning and design approximately six months after acquisition. The master planning and design process is anticipated to require two years. VA would follow the NCA *Facilities Design Guide* for the proposed replacement National Cemetery design. Development would occur in phases, with the first phase (approximately 40 to 60 acres) including the buildings and infrastructure required to support the first 15 years of burial capacity. It is anticipated the first phase of cemetery development would be completed within two years of the completion of the cemetery design and the cemetery would open in approximately 2027.

It is anticipated that the proposed cemetery would generally include the following components:

- A gated entrance designed to provide a sense of a National Shrine or ceremonial place. The entrance road would be a divided boulevard with masonry or stone walls at the entrance, indicating the name of the cemetery.
- An Administration and Public Information Building in the vicinity of the cemetery entrance. This building would be architecturally consistent with the cemetery design and would serve as office space for approximately six staff members. The structure would include appropriate storage, administration space, a public information lobby, and public restroom facilities, as well as adjacent parking for staff and visitors. All facilities would be compliant with the American with Disabilities Act (ADA).
- Near the Administration and Public Information Building would be three separate parallel lanes that split off from the main entrance road and would be used for staging funeral cortege processions. These lanes would be designed to hold at least 30 vehicles each. Additionally, an approximate 28-foot-wide road would wind throughout the cemetery in harmony with the natural grade and environmental features of the land. This road would loop back around the property to maintain a complete, simple traffic pattern around the cemetery. All onsite roads would have a speed limit of 15 miles per hour (mph).

- Approximately two to four permanent committal shelters would be constructed for ceremonies (there are no grave-side ceremonies at National Cemeteries). These shelters would be designed and located where there are scenic views, maximum weather protection, and minimal potential for noise disruption.
- An assembly area would be centrally located at a visible, high elevation location that would include a flagpole bearing the US flag. Non-burial ceremonies would occur at the assembly area. The ideal location would represent a natural amphitheater setting.
- A Memorial Wall area with markers designating those Veterans whose remains are unavailable for burial (i.e., missing in action, buried at sea, etc.).
- A Prisoner of War/Missing in Action (POW/MIA) flagpole would be located along with a Memorial Walkway feature in an aesthetically pleasing area of the site to accommodate donated monuments from veterans' organizations.
- A maintenance facility is proposed and would be located in an area out of the general public view, while still being convenient for maintenance staff. A secondary entrance to this maintenance facility from local surrounding public roads would be developed, if possible.
- The National Cemetery would be developed in phases. The initial phase would include the construction of the cemetery roads, entrance, Administration and Public Information Building, committal shelters, maintenance facility, and irrigation infrastructure. Each subsequent phase would include enough gravesites and columbarium niches as needed to accommodate approximately 15 years of burial demand. Cremation sites, casket gravesites, and columbarium would be developed in each subsequent phase. The size of each phase, and the total number of phases, is currently unknown. However, excluding the initial phase that builds much of the cemetery infrastructure and support buildings, each subsequent phase is estimated to include approximately 25 acres.
- Environmentally constrained areas, such as environmentally and culturally sensitive areas, and areas that are otherwise difficult to develop (e.g., steep slopes, wetlands, etc.) would be left undeveloped and remain as scenic locations at the cemetery. The utilized portions of the site would be developed to within 20 feet of the site boundaries.
- The standard for NCA design is to achieve an on-site cut-and-fill soil balance as much as possible. Proposed development would primarily be located in relatively level areas and following natural contours to the extent possible. Areas may be minimally leveled to develop a consistent grade with each phase. Development would include the installation of grave sites, which would consist of gravel base, drainage piping, and pre-placed concrete vault/crypt system. Approximately 20 to 22 inches of soil would be placed on top of each vault/crypt. This design would provide the most space-efficient option. Each grave site would be marked with a small, upright marble headstone.
- Utilities, including potable and irrigation water, sewer, electric, and other supporting infrastructure would be extended to and throughout the site, as required.

Prior to construction, VA would obtain all applicable required federal, state, and local permits for the proposed cemetery development from appropriate government authorities. VA would avoid significant on-site environmental resources through sensitive site design, including avoidance of cultural and sensitive natural resources. Figure 2-1 provides an example National Cemetery design for reference.

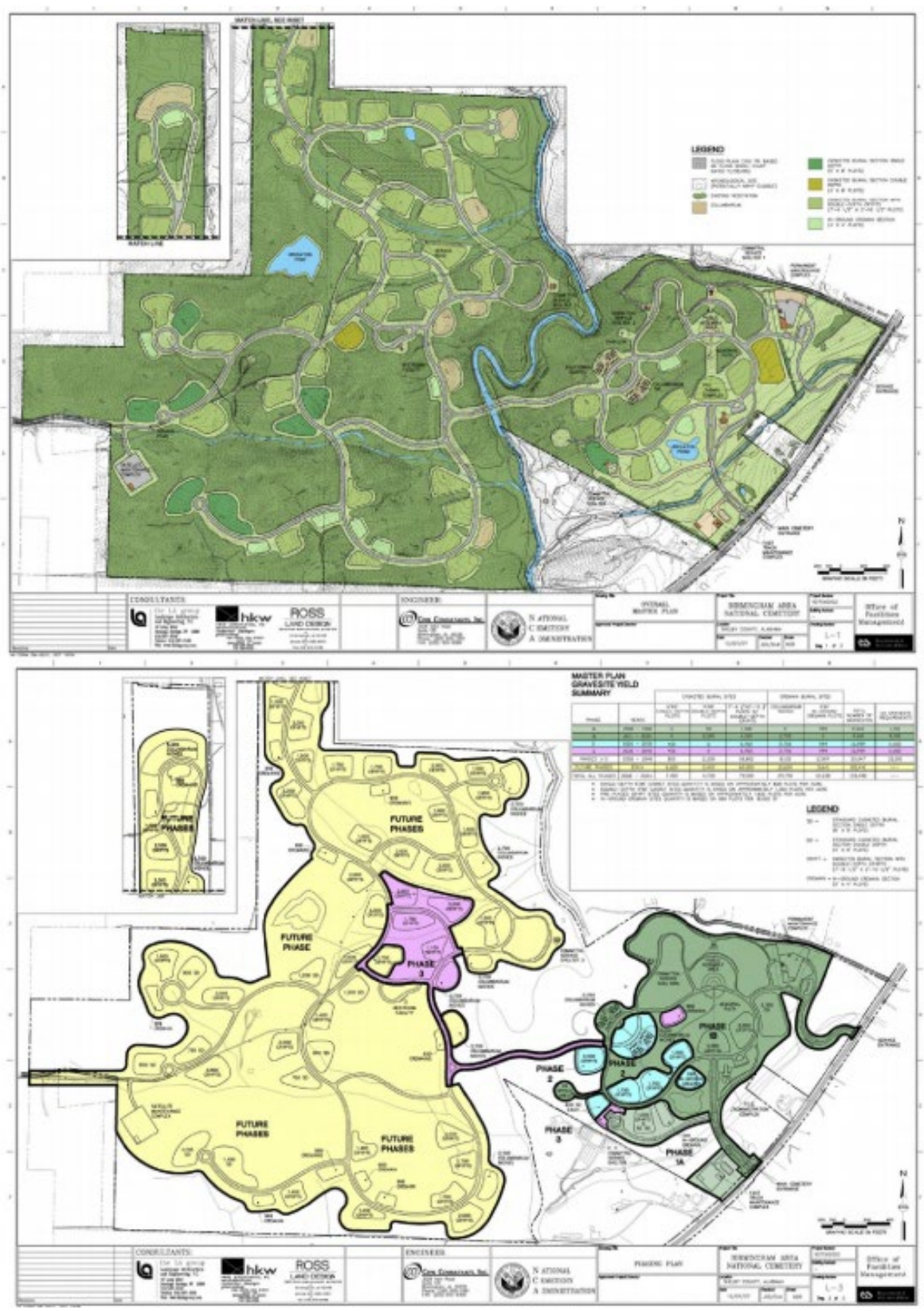

Figure 2-1 Representative (Example Only) National Cemetery Design Layout

2.3 Alternatives Development

NEPA, CEQ Regulations, and 38 CFR Part 26 require reasonable alternatives to be explored and objectively evaluated. Alternatives that are eliminated from detailed study must be identified along with a brief discussion of the reasons for eliminating them. For purposes of analysis, an alternative was considered "reasonable" only if it would enable VA to accomplish the primary mission of providing a suitable cemetery site that meets the purpose of and need for the Proposed Action, including availability at a price consistent with the fair market value based on an independent appraisal, or donation. "Unreasonable" alternatives would not enable VA to meet the purpose of and need for the Proposed Action.

VA initially considered the expansion of the existing Chattanooga National Cemetery; however, land contiguous to the cemetery is fully developed and was not available to acquire. As a result, VA concluded that a new replacement National Cemetery near Chattanooga best suited their purpose and need to fully serve the burial needs of area Veterans.

After identifying a need for a new replacement National Cemetery in the Chattanooga area, VA advertised its need for an appropriate site for the proposed cemetery. In 2020, VA published a Solicitation for Federal Business Opportunity (FBO), soliciting offers for at least 200 acres of land suitable for cemetery development within 30 miles of downtown Chattanooga. No responses were received.

In 2021, VA published a second Solicitation for offers for at least 150 acres of land suitable for cemetery development within 30 miles of downtown Chattanooga. VA received several responses to the second advertisement. Through a comprehensive screening process, VA narrowed the number of viable sites based on analyses of site-specific attributes including topography and natural aesthetics; soil/geology; environmental issues; site configuration; availability of utilities; existing structures and obstructions; site adjacencies; aesthetic quality and zoning; proximity to catchment area; and accessibility. Through this analysis, VA identified two suitable sites that best met the established screening criteria. These sites are described in Section 2.4.

2.4 Alternatives Evaluated in this EA

This EA examines in depth two Action Alternatives for the implementation of the Proposed Action as described in Section 2.2 (Site 1 and Site 2), and the No Action Alternative.

2.4.1 Proposed Action Alternative 1 – Site 1

Site 1 consists of approximately 270 acres of land located south of the intersection of Hiwassee Highway and Chickamauga Lake/Tennessee River in an unincorporated area of Meigs County, Tennessee, approximately 29 miles northeast of downtown Chattanooga. Site 1 is located in a rural area consisting of mostly agricultural and low-density residential properties. Site 1 consists of unimproved agricultural land and wooded land. A small overgrown cemetery (Old Browder Cemetery) is located in an area of trees in the central portion of the site but is located on its own 0.46-acre parcel that is not part of the site. Old Browder Cemetery would remain in place as an independent cemetery located within the National Cemetery.

The location and features of Site 1 are depicted on Figures 2-2 and 2-3.

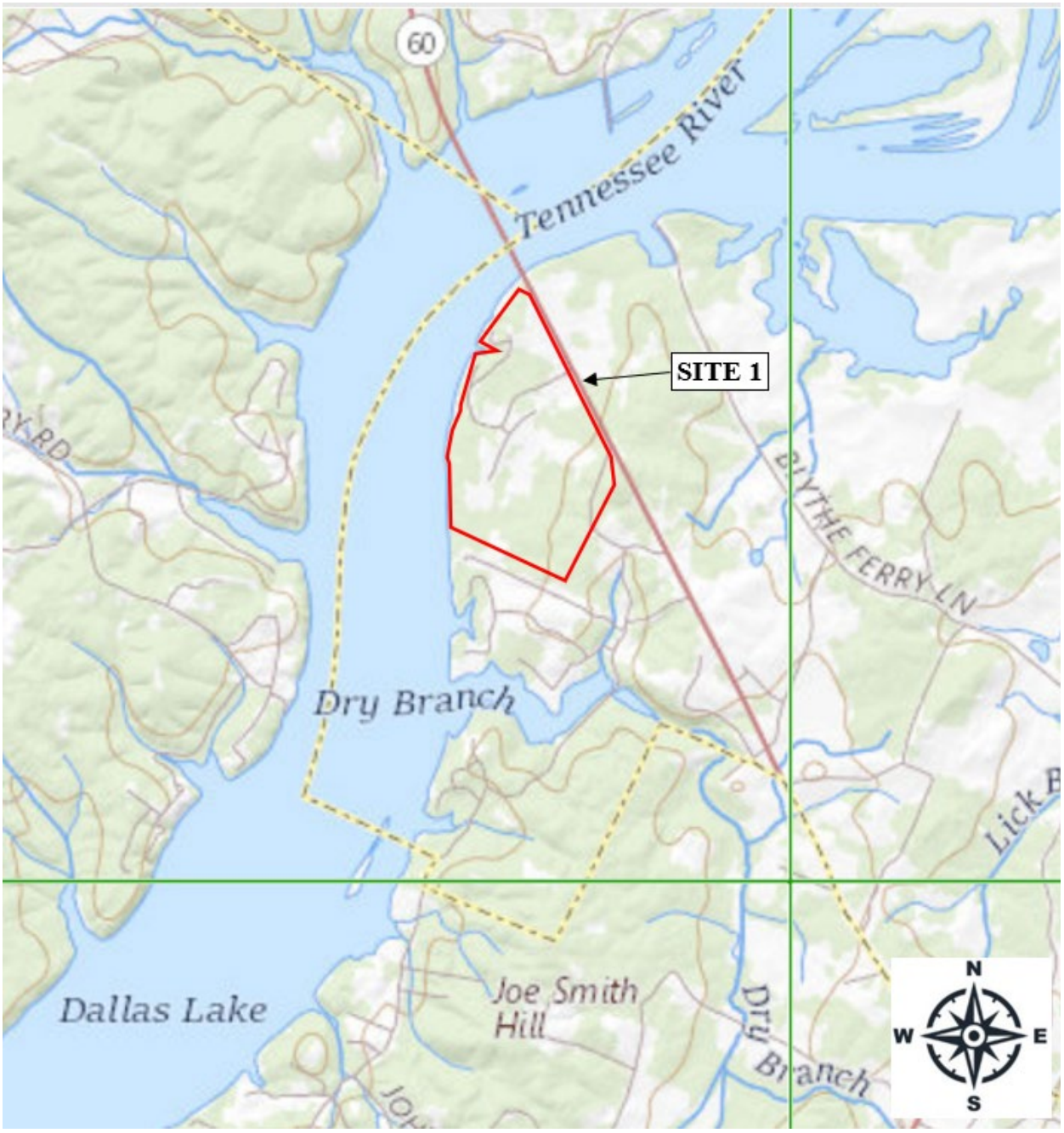

Figure 2-2 Topographic Location Map of Site 1 (Graysville, TN)

Figure 2-3 Aerial Photograph of Site 1

2.4.2 Propose Action Alternative 2 – Site 2

Site 2 consists of approximately 225 acres of land located northeast of the intersection of Bostontown Road and Kelly Cross Road in an unincorporated area of Sequatchie County, Tennessee, approximately 25 miles north of downtown Chattanooga. Site 2 is located in a rural area consisting of agricultural land and low-density residential properties. The site is mostly unimproved agricultural land and wooded land with a house and two sheds located in the western portion of the site. The residence and associated structures would likely be removed during initial cemetery development. An intermittent stream is located in the western portion of the site and McWilliams Creek runs along the eastern site boundary.

The location and features of Site 2 are depicted on Figures 2-4 and 2-5.

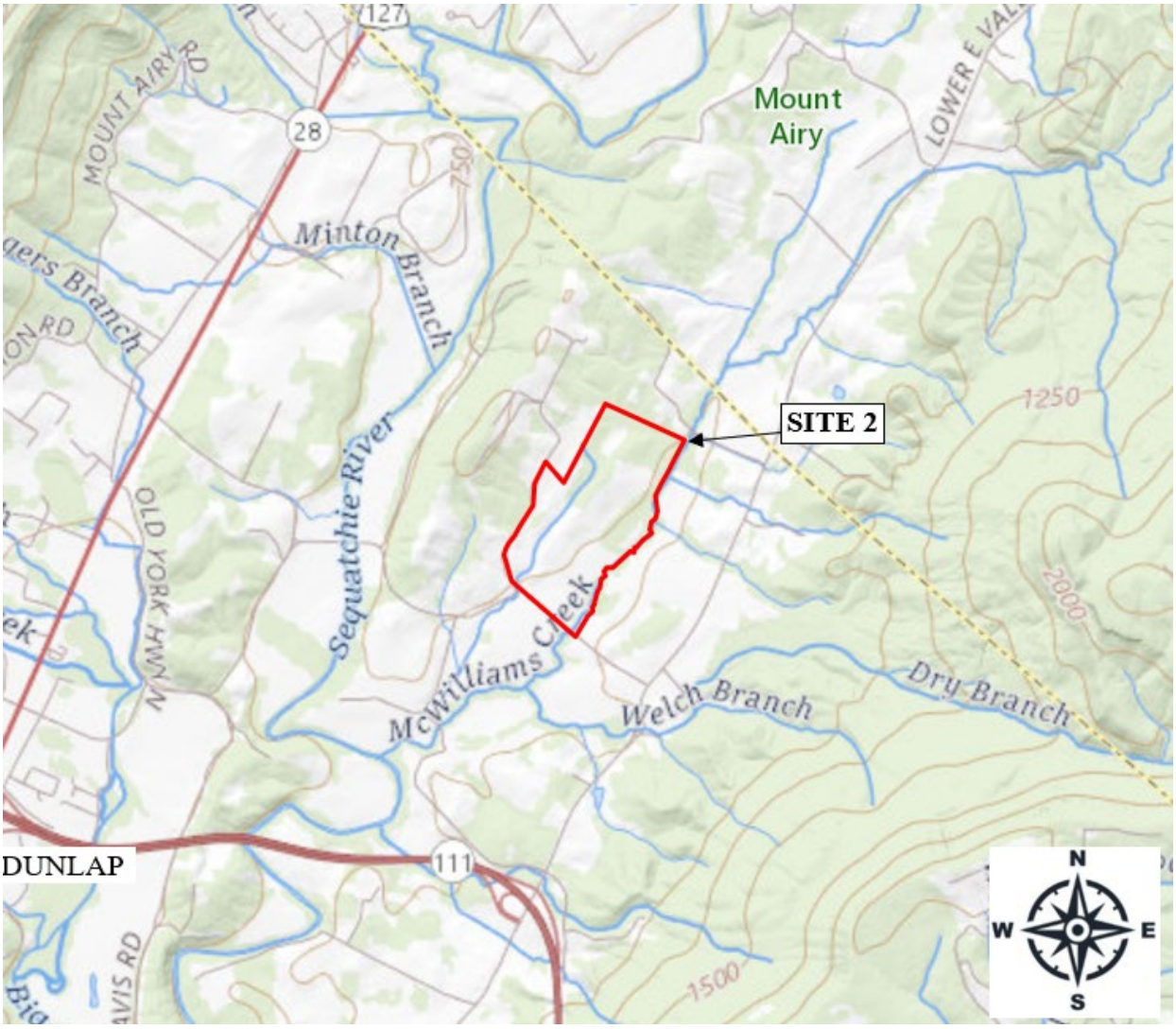

Figure 2-4 Topographic Location Map of Site 2 (Mount Airy, TN)

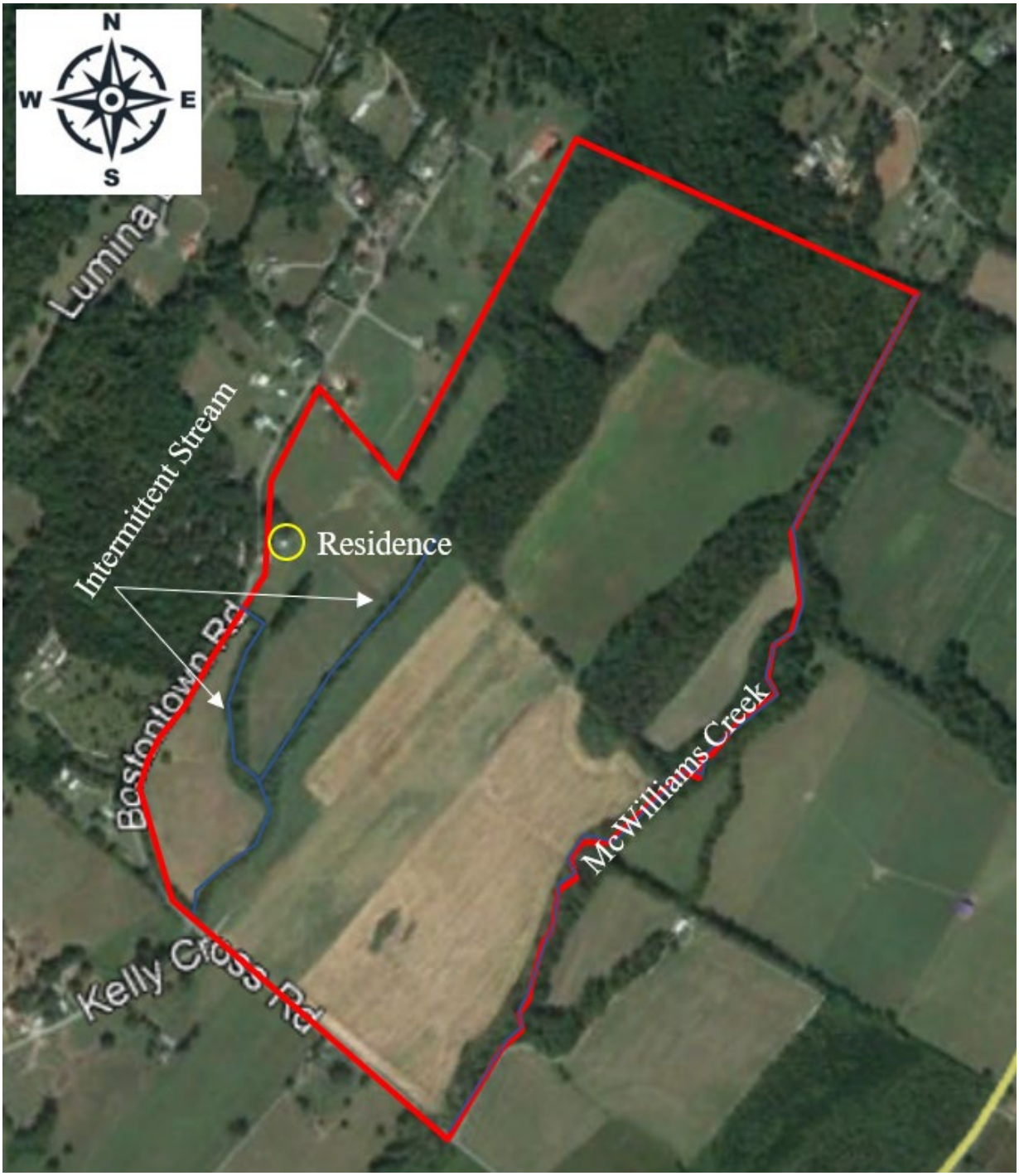

Figure 2-5 Aerial Photograph Location Map of Site 2

2.4.3 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. NCA would continue to provide burial services at the existing Chattanooga National Cemetery until the existing capacity is reached, after which the cemetery would be maintained and open for visitors but would be closed for new interments. Veterans and their families residing in the Chattanooga area would no longer be served by a proximate

National Cemetery and would be required to travel a substantial distance for burial at a National Cemetery. The Proposed Action Alternative sites would likely remain mostly undeveloped agricultural land for the foreseeable future.

The No Action Alternative would not enable VA to provide adequate National Cemetery facilities in the Chattanooga area and, thus, does not meet the purpose and the need for the Proposed Action. However, the No Action Alternative was retained to provide a benchmark for comparing potential impacts of the Proposed Action, as required under the CEQ regulations.

2.5 Alternatives Eliminated from Further Consideration

As described in Section 2.3, VA initially considered the expansion of the existing Chattanooga National Cemetery; however, land contiguous to the existing cemetery is fully developed and was not available to acquire. As a result, this alternative was eliminated from further consideration.

VA considered other offered sites in the Chattanooga area for acquisition and development of the proposed new National Cemetery. However, as discussed in Section 2.3, based on site screening evaluations, the remaining sites were eliminated from further consideration.

3.0 AFFECTED ENVIRONMENT & ENVIRONMENTAL CONSEQUENCES

3.1 Introduction

This Section describes the baseline (existing) physical, environmental, cultural, and socioeconomic conditions of the Proposed Action Alternative sites and their general vicinities (i.e., the Proposed Action's region of influence), with emphasis on those resources potentially affected by the Proposed Action. Appendix D contains photographs of the sites and their surrounding areas. Under each resource area (Sections 3.3 through 3.17), the potential direct and indirect effects of the Proposed Action Alternatives and the No Action Alternative are identified. Potential cumulative impacts are discussed in Section 3.18.

Resource areas considered in this EA are as follows:

- *Aesthetics*
- *Air Quality*
- *Cultural and Historic Resources*
- *Geology and Soils*
- *Hydrology and Water Quality*
- *Wildlife and Habitat*
- *Noise*
- *Land Use*
- *Floodplains, Wetlands, and Coastal Zone Management*
- *Socioeconomics*
- *Community Services*
- *Solid Waste and Hazardous Materials*
- *Traffic, Transportation, and Parking*
- *Utilities*
- *Environmental Justice*
- *Cumulative Impacts*
- *Potential for Generating Substantial Controversy*

3.2 Criteria for Analysis of Impacts

Each alternative was evaluated for its potential impacts on physical, biological, and socioeconomic resources in accordance with the CEQ regulations at 40 CFR 1508.8. The specific criteria for evaluating the potential environmental impacts of the Proposed Action Alternatives and the No Action Alternative are described in the following sections. The significance of an action is also measured in terms of its context and intensity. The potential environmental impacts are described in terms of duration, whether they are direct or indirect, the magnitude of the impact, and whether they are adverse or beneficial, as summarized in the following paragraphs:

Short-term or long-term: In general, **short-term** impacts are those that would occur only with respect to a particular time-lined activity, for a finite period, or only during the time required for construction or installation activities. **Long-term** impacts are those that are more likely to be persistent and chronic.

Direct or indirect: A **direct** impact is caused by an action and occurs around the same time at or near the location of the action. An **indirect** impact is caused by an action and might occur later in time or be farther removed in distance but still be a reasonably foreseeable outcome of the action.

Less than significant (negligible, minor, moderate), or significant: These relative terms are used to characterize the magnitude or intensity of an impact. **Negligible** impacts are generally those that might be perceptible but are at the lower level of detection. A **minor** impact is slight, but detectable. A **moderate** impact is readily apparent. **Significant** impacts are those that, in their context and due to their magnitude (severity), have the potential to meet the thresholds for significance set forth in the CEQ regulations (40 CFR 1508.27) and, thus, warrant heightened attention and examination for potential means for mitigation to fulfill the policies set forth in NEPA.

Adverse or beneficial: An **adverse** impact is one having unfavorable or undesirable outcomes on the man-made or natural environment. A **beneficial** impact is one having positive outcomes on the man-made or natural environment.

3.3 Aesthetics

Aesthetics refers to the visual resources including natural and man-made features that give a particular site its aesthetic properties. This section includes descriptions of the current site conditions and the surrounding area, and the visual impacts of the alternatives assessed from the associated viewshed to the sites.

There are no, officially designated, federal, state, or local scenic or aesthetic resources within the vicinities of either site.

Site 1

The approximately 270-acre site is located south of the intersection of Hiwassee Highway and Chickamauga Lake/Tennessee River in an unincorporated area of Meigs County, Tennessee. The site consists mostly of agricultural fields with gentle rolling hills and a general downward slope to the west. Areas near the eastern, southern and western site boundaries are mostly wooded. In the central portion of the site, a small derelict, overgrown cemetery (Old Browder Cemetery) is located on its own 0.46-acre parcel that is not part of the site. The Old Browder Cemetery would remain in place as an independent cemetery located within the National Cemetery.

The area surrounding Site 1 is mostly agricultural land and low-density residential properties. The areas located to the north and east, across Hiawassee Highway, are agricultural fields and unimproved forested lands. Low-density residential properties are located to the south and southeast of the site. Chickamauga Lake/Tennessee River forms the western boundary of the site. Site 1 features are shown on Figure 2-2 and Figure 2-3.

Site 2

Site 2 is located northeast of the intersection of Bostontown Road and Kelly Cross Road in an unincorporated area of Sequatchie County, Tennessee. The approximately 225-acre site consists of mostly unimproved agricultural land and wooded land with a single-story house and two sheds located on the western portion of the site. The northern portion of the site contains agricultural fields and wooded areas; the southern portion of the site is almost entirely agricultural. An intermittent stream is located in the western portion of the site and McWilliams Creek runs along the eastern site boundary.

Site 2 is located in a rural area consisting of agricultural fields and low-density residential properties. Residential properties to the north of the site are separated from the northern portion of the site by wooded land along the site border. To the east of the site lies McWilliams Creek and wooded land that forms the eastern site boundary, beyond which are agricultural fields. Kelly Cross Road forms the southern site border, across which are agricultural lands with a few residential properties. Approximately 200 feet southwest of the site, across the intersection of Kelly Cross Road and Bostontown Road, is a small cemetery, McWilliams Family Cemetery. Bostontown Road continues along the western boundary of the site and separates the site from a mix of agricultural fields, wooded land, and low-density residential properties. Site 2 features are shown on Figure 2-4 and Figure 2-5.

3.3.1 Effects of the Proposed Action

After VA's acquisition, the selected site would remain mostly undeveloped land, although current agricultural fields may become fallow and the residence (Site 2) may be vacated, until such a time that the cemetery design process is complete, and construction is ready to begin (approximately three years). VA's

acquisition of the site and initial holding of the site prior to cemetery development could result in minor adverse aesthetic impacts.

Development and operation of the National Cemetery on the selected site would produce visual changes, including the installation of the cemetery road, perimeter fencing, two or three small single-story structures, parking areas, grassy burial areas, columbarium walls, and committal shelters. Given the active agricultural use of the majority of both sites, the initial phase of cemetery development would likely require only limited tree clearing. At Site 2, the existing residence and associated structures would be removed during initial cemetery development. VA would design and develop the cemetery in concert with the selected site's topography and natural features, with no major grading, to provide an aesthetically pleasing experience for visitors. Additionally, the cemetery design would include natural buffers and/or berms along boundaries with adjacent residences to minimize potential aesthetic adverse impacts at either site.

Given the low visual impact of the cemetery development, which would be designed in concert with the existing topography and landscape and would be largely consistent with the use of the surrounding lands, no significant impacts to aesthetics would occur at either site.

3.3.2 Effects of the No Action Alternative

Under the No Action Alternative, no development or changes to the sites by VA would occur. The sites would likely remain mostly unimproved, agricultural lands for the foreseeable future with no aesthetic impacts.

3.4 Air Quality

3.4.1 Ambient Air Quality

The ambient air quality in an area can be characterized in terms of whether or not it complies with the primary and secondary National Ambient Air Quality Standards (NAAQS). The Clean Air Act (CAA) requires the U.S. Environmental Protection Agency (USEPA) to set NAAQS for pollutants considered harmful to public health and the environment. NAAQS are provided for the principal pollutants, called "criteria pollutants," which include carbon monoxide; lead; nitrogen oxides; ozone; particulate matter; and sulfur dioxide.

Areas are designated by the USEPA as "attainment", "non-attainment", "maintenance", or "unclassified" with respect to the NAAQS. Regions in compliance with the standards are designated as "attainment" areas. In areas where the applicable NAAQS are not being met, a "non-attainment" status is designated. Areas that have been classified as "non-attainment," but are now in compliance can be re-designated "maintenance" status if the state completes an air quality planning process for the area. Areas for which no monitoring data is available are designated as "unclassified," and are by default considered to be in attainment of the NAAQS.

The General Conformity Provision of the CAA, including the USEPA's implementation mechanism, the General Conformity Rule, prohibits the Federal government from conducting, supporting, or approving any actions that do not conform to a USEPA-approved State Implementation Plan (SIP). A SIP is a state's self-authored blueprint for achieving and maintaining compliance with the goals of the CAA.

According to the USEPA Green Book (January 2022) website, Meigs County and Sequatchie County are both designated as areas of full attainment that meet the national air quality standards for the NAAQS pollutants. Consequently, VA would not be subject to the General Conformity Provision of the CAA for the new replacement cemetery at either site.

3.4.2 State and Local Regulations

The Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution Control (APC), establishes emission standards and procedure requirements to monitor industries in the State through the issuance of construction and operating permits. APC Rule Chapter 1200-03-09 contains the general requirements for construction permits. There are various emission levels that determine the types of construction and operating permits required under the TDEC APC regulations.

Based on the nature of the proposed cemetery development and input received from the TDEC APC air quality permitting department, it is not anticipated that a TDEC APC air permit would be required for the Proposed Action. However, VA would secure any required minor air emissions permits from the TDEC APC, as appropriate and based on the final cemetery design.

3.4.3 Greenhouse Gases and Climate Change

In December 2014, CEQ released its revised draft guidance for federal agencies on consideration of greenhouse gas (GHG) emissions and the effects of climate change in NEPA reviews, which describes how federal agencies should consider the effects of GHG emissions and climate change in their NEPA decision-making documents. The guidance indicates that federal agencies should consider both the potential effect of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action. The guidance indicates that the agency analysis should be commensurate with the projected GHG emissions and climate impacts of the proposed action. It recommends that agencies consider 25,000 metric tons of carbon dioxide equivalent emissions on an annual basis as a threshold below which quantitative analysis of GHG is not recommended.

3.4.4 Sensitive Receptors

CEQ's NEPA regulations require evaluation of the degree to which the proposed action affects public health. Sensitive receptors for air quality impacts include hospitals, schools, daycare facilities, elderly housing and convalescent facilities, and residences.

Site 1

The area surrounding Site 1 is mostly agricultural land and low-density residential properties. Sensitive air quality receptors in the vicinity of the site include residences located approximately 50 to 100 feet and farther east of the site and approximately 250 feet and farther south of the site. No hospitals, schools, daycare facilities, elderly housing or convalescent facilities are located within 0.50-mile of Site 1.

Site 2

Site 2 is located in a rural area consisting of agricultural fields and low-density residential properties. Sensitive air quality receptors in the vicinity of Site 2 include scattered residences located approximately 150 to 200 feet and farther north of the site, scattered residences approximately 500 feet and farther east of the site, scattered residences approximately 50 feet and farther south of the site, and several residences approximately 50 to 500 feet west of the site. No hospitals, schools, daycare facilities, elderly housing or convalescent facilities are located within 0.50-mile of Site 2.

3.4.5 Effects of the Proposed Action

Air emissions generated from the proposed cemetery would be expected to have direct and indirect short-term and long-term minor adverse impacts to the existing air quality environment. Short-term direct increased air emission levels would occur as a result of the initial cemetery development and during each subsequent phase of cemetery expansion. Long-term direct and indirect emissions would occur during the operation of the cemetery as a result of visitor vehicle emissions.

Construction activities would be performed in accordance with federal and state air quality requirements. Construction-related emissions are generally short-term, but may still have adverse impacts on air quality, primarily due to the production of dust. Dust can result from a variety of activities, including excavation, grading, and vehicle travel on paved and unpaved surfaces. Fugitive dust air emissions would be greatest during the initial site grading and excavation and would vary day to day depending on the work phase, level of activity, and prevailing weather conditions. Dust from construction can lead to adverse health effects and nuisance concerns, such as reduced visibility on nearby roadways. The amount of dust is dependent on the intensity of the activity, soil type and conditions, wind speed, and dust suppression activities used. Implementing dust control measures (BMPs) greatly reduces dust emissions from construction. Construction-related emissions also include the exhaust from the operation of construction equipment, including diesel particulate matter. The use of newer construction equipment with emissions controls and minimizing the times that the equipment is idling (BMPs) reduces construction equipment exhaust emissions. Construction workers daily commuting in their personal vehicles would also result in negligible increased criteria pollutant emissions. Implementation of BMPs, discussed in Section 4, would minimize the anticipated minor, short-term, construction-related, air quality impacts.

During operation of the cemetery, there would be vehicular emissions associated with site visits by Veterans and their families. A minor long-term increase in local vehicle miles (and associated emissions) is anticipated, as visitors would travel to the site (approximately 600 to 800 one-way vehicle trips per day). However, overall vehicle emissions would decrease because regional Veterans and their families would not be required to travel greater distances to other National Cemeteries or State Veterans Cemeteries once the existing Chattanooga National Cemetery reaches its capacity and is closed for new interments. Vehicle air emissions associated with the operation of the cemetery would be minor. Cemetery operational air emissions, associated with interments and grounds maintenance, would be negligible.

The Proposed Action would have a negligible contribution to long-term global climate change. Direct GHG emissions from the short-term use of vehicles and mechanical equipment during construction activities would cease after the construction has been completed. Indirect GHG emissions from the vehicle traffic to and from the cemetery are anticipated to be minor. GHG emissions as a result of Proposed Action construction and operational activities are anticipated to be well below the threshold of 25,000 metric tons of carbon dioxide annually.

3.4.6 Effects of the No Action Alternative

Under the No Action Alternative, no air quality impacts associated with VA's Proposed Action would result. Once the existing Chattanooga National Cemetery reaches its burial capacity and regional Veterans are interred at more distant National and State Cemeteries, Veterans and their families would travel greater distances, which would contribute to increased regional air emissions, a minor, long-term adverse air quality impact. The sites would likely remain as agricultural lands with no negligible air quality impacts.

3.5 Cultural and Historic Resources

Cultural resources include both historic and prehistoric archaeological resources, as well as historic structures in the built environment. This impact analysis focuses on sites and structures listed in, or eligible for nomination to, the National Register of Historic Places (NRHP), the regulations (36 CFR Part 800) for implementing Section 106 of the National Historic Preservation Act (NHPA) of 1966, and cultural items as defined in the Native American Graves Protection and Repatriation Act (NAGPRA).

Site 1

Site 1 has been predominantly agricultural land with some wooded areas since at least 1935. Old Browder Cemetery has been present in the central portion of the site (on its own separate parcel) since at least 1943. A road (now vacated) has been present in the southeastern portion of the site since at least 1935. One to

three structures (two residences and one barn) were located on the site along the road from at least 1935 to at least 1958. The road has been vacated since at least the early 2000s. In the late 2000s, an unimproved access road was constructed onto the central portion of the site from Hiwassee Highway and some tree clearing was conducted in preparation for a residential development; however, the development was never completed.

On behalf of VA, Row 10 Historic Preservation Solutions (Row 10) completed an Initial Cultural Resources Impact Prediction (ICRIP) study for Site 1 in 2021. The ICRIP study included a records and literature search of the Tennessee Historical Commission (Tennessee State Historic Preservation Office, TN SHPO), National Historic Landmarks, and NRHP data, and a pedestrian survey of the site by an architectural historian. The ICRIP report indicated no buildings are present at the site and all buildings located on the surrounding properties have been constructed less than 50 years ago or do not appear to be eligible farmsteads (Row 10 2021a). No NRHP-listed or eligible historic buildings or districts were identified at the site or within the immediate site area.

Site 1 completely surrounds an approximately 0.46-acre parcel identified on maps as Old Browder Cemetery. The cemetery is derelict and wooded with mixed tree and dense scrub vegetation. One headstone was observed, propped against a tree. The headstone was mostly illegible and noted a date of death of 1856. Scattered possible fieldstone markers and possible grave depressions were also observed within the cemetery parcel. Row 10 stated that cemeteries and graves are not ordinarily eligible for inclusion in the NRHP unless they meet special requirements and concluded the cemetery, which does not appear to be associated with historic events, people, or design, and lacks integrity, is not eligible for listing in the NRHP.

Environmental Research Group (ERG) completed a Phase I Archaeological Survey for Site 1 on behalf of VA in 2021. The archaeological survey included a review of TDEC Tennessee Department of Archaeology (TDOA) archaeological site files, a pedestrian field survey and shovel testing at the site on an approximately 30-meter grid by a team of archaeologists, laboratory analysis, and archaeological resources documentation. The review of the TDOA site files identified three known archaeological sites within the survey area, and one site likely falling within the survey area. None of the four sites had been evaluated for NRHP-eligibility (ERG 2021a).

The archaeological survey of Site 1 recovered two pre-contact and eleven post-contact artifacts from 1,008 shovel tests. ERG determined that these artifacts, occurring in three archaeological isolated finds, do not represent significant archaeological resources and are not considered eligible for the NRHP. ERG did not relocate any of the four previously identified sites by TDOA during the 2021 investigation, likely due to a combination of imprecise mapping of the sites at the time of their original recording and/or post-identification disturbances associated with the construction of Chickamauga Lake and Hiwassee Highway.

Site 2

Site 2 has been predominantly unimproved agricultural land with some wooded areas since at least 1888. In 1935, an unimproved road and a residential-sized structure were located in the northern portion of the site, which were no longer present in 1947. During the late 1970s/early 1980s, a residence and associated ancillary buildings were constructed in the western portion of the site, which are still present.

On behalf of the VA, Row 10 conducted an ICRIP study for Site 2 in 2021, as outlined for Site 1. The pedestrian survey identified nine residences and several outbuildings within the site area and surrounding properties; only four of the residences are more than 50 years old. Further review revealed none of the residences or outbuildings possess the qualities of significance to be individually eligible for inclusion on the NRHP (Row 10 2021b).

ERG completed a Phase I Archaeological Survey for Site 2 on behalf of VA in 2021. The archaeological survey included a review of TDOA archaeological site files, a pedestrian field survey and shovel testing at the site on an approximately 30-meter grid by a team of archaeologists, laboratory analysis, and

archaeological resources documentation. The review of the TDOA files identified no previous archaeological investigations of Site 2 (ERG 2021b).

The archaeological survey of Site 2 recovered one pre-contact and six post-contact artifacts from 1,028 shovel tests. ERG determined that these artifacts, occurring in two archaeological isolated finds, do not represent significant archaeological resources and are not considered eligible for the NRHP.

3.5.1 Effects of the Proposed Action

Based on the findings and conclusions from the 2021 ICRIP studies and Phase I Archaeological Surveys, no NRHP-listed or eligible historic buildings or districts were identified at the sites or within the immediate site areas and no NRHP-eligible archaeological sites were identified at the sites. Therefore, no impacts to NRHP-listed or eligible historic properties would occur as a result of the Proposed Action.

In December 2021, VA initiated NHPA Section 106 consultation for the Proposed Action with the Advisory Council on Historic Preservation (ACHP), TN SHPO, National Association of Tribal Historic Preservation Officers, National Trail of Tears Association, 17 federally recognized Native American Tribes with possible geographic or cultural affiliation with the areas of the sites, and other potentially interested consulting parties. The Section 106 consultation letters included a description of VA's proposed undertaking (Proposed Action), definition of the areas of potential effect (APEs), identification of historic properties (the results of the ICRIPs and Phase I Archaeological Surveys), and VA's finding of no effects on historic properties.

In letters dated December 27, 2021, the TN SHPO responded that they concur with VA's determination that no historic properties listed or eligible for listing in the NRHP would be affected with the Proposed Action at either site. No other agencies or Tribes have responded or elected to participate in the Section 106 consultation process. Section 106 correspondence is provided in Appendix C.

The State of Tennessee requires owners of properties that contain cemeteries to provide buffers around the perimeter of the graves, protect the graves from disturbance, and provide access to family members to visit the graves of their ancestors. As Old Browder Cemetery is located on a separate parcel that would not be owned or developed by VA if Site 1 were to be selected, the existing cemetery would not be disturbed. However, the small cemetery parcel is not fenced or marked. VA would mark/fence its boundary to prevent inadvertent disturbance if Site 1 is selected. VA would also provide reasonable access to the cemetery by family members, although it appears the derelict cemetery is rarely, if ever, visited.

3.5.2 Effects of the No Action Alternative

Under the No Action Alternative, no cultural resource impacts would occur.

3.6 Geology and Soils

The sites are located in the Cumberland Plateau section of the Appalachian Plateau province of the Appalachian Highlands physiographic region in Tennessee. The bedrock is mostly folded and faulted sedimentary strata formed from near-shore sediments washed westward from the old Appalachian Mountains. Some rock layers were laid down from shallow coastal waters and swampy environments. As such, the region is underlain by limestone, dolostone (dolomite), salt deposits, and gypsum deposits.

Both sites are located in the East Tennessee Seismic Zone (ETSZ) that is known to be subject to frequent small earthquakes. The ETSZ is the second most active earthquake zones in the eastern United States (Hatcher et al. 2013). Within this zone, there have been 188 earthquakes of magnitude 2.5 or greater since measurements began in the 1970s. The strongest earthquake on record for this region was a magnitude 4.7 in Maryville, Tennessee in 1973 (Coffman et al. 1984). The epicenter was 60 to 80 miles northeast of the sites. Magnitude 5.0 to 6.0 earthquakes are possible every 200-300 years in this region (Mays 2018).

Although eastern Tennessee is located within a seismically active area, no known active faults are known to be present beneath the sites (USGS and TEHP 2021).

Site 1

A review of the Graysville, Tennessee United States Geological Survey (USGS) Topographic Quadrangle (dated 2019) indicates that surficial topography in the site's vicinity consists of gentle rolling hills. Site 1 slopes down to the west towards Chickamauga Lake, located along the western boundary of the site, with elevations ranging from approximately 840 feet above mean sea level (msl) in the eastern portion of the site to approximately 680 feet above msl in the western portion of the site.

Bedrock in the area of Site 1, according to the Tennessee Division of Geology Geologic Map of Tennessee (East-Central Sheet), consists of the Newala Formation (combination of the Kingsport Formation and Mascot Dolomite). The Mascot Dolomite is comprised predominantly of carbonate-based rocks such as cherty dolomite with interbeds of limestone and chert-matrix quartz sandstone at the base with a thickness of approximately 350 to 840 feet. The Kingsport Formation is a cherty dolomite with a basal dense, gray limestone sequence and thickness of about 250 feet. The carbonate-based formation could be susceptible to dissolution along the joints and bedding planes forming voids and channels within the rock strata.

The United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) identified and mapped 18 soil map units within Site 1 (Figure 3-1). They include the following soil map units:

- DeC2- Dewey silt loam soils located on 6 to 15 percent slopes along stream terraces and ridges where the surface layer has been eroded away
- EsB2- Etowah silt loam found on stream terraces with 2 to 5 percent slopes with the surface layer typically eroded away
- EsC2- Etowah silt loam soils found on stream terraces with 5 to 12 percent slopes that have had the surface layer eroded away
- FcC- Fullerton gravelly silt loam located on ridges with 5 to 12 percent slopes
- FcD- Fullerton gravelly silt loam observed on 15 to 25 percent slopes along ridges
- FcF- Fullerton gravelly silt loam located on ridges with 25 to 60 percent slopes
- Ha- Hamblen-Tupelo complex observed along floodplains on 0 to 3 percent slopes that are occasionally flooded
- Re- Rockdell-Ennis complex located along drainages and floodplains with 0 to 3 percent slopes that are occasionally flooded
- Sh- Shady-Hamblen complex typical of floodplains that are occasionally flooded with 0 to 3 percent slopes
- TmC- Tasso-Minvale complex on 5 to 12 percent slopes along ridges and alluvial fans
- WaB2- Waynesboro clay loam observed on eroded terraces with 2 to 6 percent slopes
- WaC- Waynesboro loam soils typical of terraces with 6 to 15 percent slopes
- WaC2- Waynesboro clay loam observed on eroded terraces with 6 to 15 percent slopes
- WaD-Waynesboro loam soils occurring on 15 to 25 percent slopes along stream terraces
- WaD2- Waynesboro clay loam located on 12 to 25 percent slopes with the surface layer eroded away

- WrC- Waynesboro gravelly loam soils typical of 5 to 12 percent slopes along stream terraces
- WrD- Waynesboro gravelly loam found along stream terraces with 12 to 20 percent slopes
- WrF- Waynesboro gravelly loam soils occurring on stream terraces with 20 to 30 percent slopes

More than half of the soil map units at Site 1 (FcC, FcD, FcF, WrF, WrD, WrC, WaD2, WaD, WaC2, WaC2, WaC, TmC, EsC2, DeC2,FcF and Wrf) are moderately sloped and are susceptible to soil erosion once they have been disturbed. Throughout Site 1, undisturbed soils are marginally susceptible to wind erosion (USDA NRCS 2021a).

On behalf of VA, Terracon Consultants (Terracon) completed a subsurface exploration and geotechnical engineering investigation of Site 1 in May 2021. Terracon performed 20 borings spaced throughout the site to depths ranging from 12.5 to 15 feet below ground surface (bgs) during the investigation. Soils were found to generally consist of clay, sandy clay, and silt with varying amounts of sand and gravel. These soils were typically medium stiff to very stiff. At a few locations, clayey gravel was encountered near the bottom of the boring. No groundwater or bedrock was encountered in any of the soil borings. Terracon reported that Site 1 is underlain by carbonate bedrock that may be susceptible to chemical dissolution (karstification); which can lead to the development of sinkholes and ground subsidence. However, Terracon reported that Site 1 does not appear to be at greater risk for sinkhole development than other properties in the area.

Figure 3-1 Soil Map Units of Site 1

Site 2

A review of the Mount Airy, Tennessee USGS Topographic Quadrangle (dated 2019) indicates the Site 2 is located within the Sequatchie Valley that generally slopes to the southwest and is bounded by two northeast-southwest oriented mountain ridges. The site is located on the eastern side of a northeast-southwest oriented hill. Elevations range from approximately 820 feet above msl in the northwestern portion of the site to approximately 720 feet above msl in the southwestern portion of the site. The western portion of the site slopes towards an intermittent stream located in the western portion of the site and the eastern portion slopes towards McWilliams Creek, located along the eastern site boundary.

Bedrock in the area of Site 2, according to the Tennessee Division of Geology Geologic Map of Tennessee (East-Central Sheet), consists of the Pierce and Murfreesboro Limestones). These formations are comprised predominantly of carbonate-based rocks such as limestone with minimal chert or shale. The carbonate-based formation could be susceptible to dissolution along the joints and bedding planes forming voids and channels within the rock strata.

According to the USDA-NRCS Web Soil Survey, Site 2 is mapped with 14 soil map units (Figure 3-2). The map units consist of:

- BoE- Bodine and Pailo gravelly loams found along ridges with 20 to 50 percent slopes
- CtC2- Colbert-Talbott-Braxton complex found on ridges with 5 to 12 percent slopes located on ridges lacking the surface soil layer due to erosion
- FnC2- Fullerton gravelly silt loam, 5 to 15 percent slopes, eroded commonly found on ridges
- FnE- Fullerton gravelly loam typically located on ridges with 15 to 30 percent slopes
- HoB- Holston loam observed on stream terraces and hillslopes with 2 to 5 percent slopes
- HoC2- Holston loam is moderately eroded soil observed on stream terraces with 5 to 12 percent slopes
- Melvin and Newark silt loams occur within depressions on floodplains
- MvC- Minvale gravelly loam soils are located on hillslopes with 6 to 12 percent slopes
- MvD- Minvale gravelly loam occurs on hillslopes with 12 to 20 percent slopes
- SeA- Sequatchie loam is found on stream terraces with 0 to 2 percent slopes that are rarely flooded
- SeB- Sequatchie loam is observed on stream terraces with 2 to 6 percent slopes
- Su- Sullivan loam occur on floodplains that are occasionally flooded
- Sw- Swafford loam occur on 0 to 3 percent slopes along stream terraces
- WaC2- Waynesboro loam soils occur along stream terraces on 6 to 15 percent slopes that lack the surface layer due to erosion
- WaD2- Waynesboro loam occurs on terraces with 15 to 25 percent slopes with no surface layer
- WaD3- Waynesboro clay loam is found on 5 to 25 percent slopes on terraces that are subject to severe erosional forces

The majority of the soil map units within Site 2 are susceptible to soil erosion once they have been disturbed. However, undisturbed soils throughout Site 2 are, for the most part, minimally susceptible to wind erosion (USDA NRCS 2021b).

Figure 3-2 Soil Map Units of Site 2

On behalf of VA, Terracon completed a subsurface exploration and geotechnical engineering investigation of Site 2 in May 2021. Terracon performed 10 borings spaced throughout the site, ranging in depths from 10.9 to 15.5 feet bgs. Soils were found to generally consist of clay with varying amounts of sand and gravel. Soils were typically medium stiff to very stiff. Two borings slightly west of McWilliams Creek in the eastern portion of the site encountered weathered limestone bedrock at depths of 5.9 and 10.5 feet bgs. At one location, the limestone was highly weathered, contained clay seams, and was weak. Bedrock encountered in the second location was only slightly weathered and medium strong. Groundwater was not encountered in any to the soil borings. Terracon reported that Site 2 is underlain by carbonate bedrock that may be susceptible to chemical dissolution, which can lead to the development of sinkholes and ground subsidence. However, Terracon reported that Site 2 does not appear to be at greater risk for sinkhole development than other properties in the area.

3.6.1 Prime and Unique Farmland Soils

Prime farmland soils are protected under the Farmland Protection Policy Act (FPPA). The intent of the FPPA is to minimize the extent to which federal programs contribute to the unnecessary or irreversible conversion of farmland soils to non-agricultural uses. The Act also ensures that federal programs are administered in a manner that, to the extent practicable, will be compatible with private, state, and local government programs and policies to protect farmland. The USDA NRCS is responsible for overseeing compliance with the FPPA and has developed the rules and regulations for implementing the Act.

Site 1

Five of the 18 soil map units at Site 1 are indicated by the USDA NRCS to be prime farmland, which constitutes 91 acres or approximately 32.5 percent of the site. The five soil map units are EsB2- Etowah silt loam, Ha- Hamblen-Tupelo complex, Re- Rockdell-Ennis complex, Sh- Shady-Hamblen complex, and WaB2- Waynesboro clay loam. These soils occur throughout the site, mostly in areas of existing agricultural fields (see Figure 3-1).

Site 2

Four of the 14 soil map units at Site 2 are indicated by the USDA NRCS to be prime farmland. The four soil map units cover approximately 46 acres or 21 percent of Site 2. The four soil map units are HoB- Holston loam, SeA- Sequatchie loam, Su- Sullivan loam, and Sw- Swafford loam. These soils occur in several areas of the site, including areas of existing agricultural fields and wooded areas (see Figure 3-2).

3.6.2 Effects of the Proposed Action

The proposed cemetery development at either site would have minor impacts on geology. No major changes to topography or drainage are expected due to the development of the cemetery. The cemetery would be designed in concert with the natural topography and current drainage patterns. No significant cutting or filling is anticipated.

No known, active fault lines are located in the vicinities of the sites; therefore, no significant impacts associated with seismic hazards have been identified. Additionally, no significant impacts to mineral resources are anticipated, as the proposed cemetery would not involve the commercial extraction of mineral resources, nor affect mineral resources considered important on a local, state, national, or global basis.

During construction of the cemetery, less-than-significant, direct and indirect, short-term soil erosion and sedimentation (E&S) impacts could occur. Short-term soil disturbance would occur during construction, which would clear up to 60 acres during the first phase of development for the placement of as roads, parking areas, buildings, grave sites, and other cemetery components. Cemetery construction activities would remove the current vegetative cover, disturb the soil surface, and compact the soil. The soil would then be susceptible to erosion by wind and surface runoff. Exposure of the soils during construction has an

increased potential to result in offsite discharges of sediment-laden runoff due to the erosion susceptibility of the soils and slopes of the sites. However, such potential adverse E&S effects would be minimized through the utilization of appropriate BMPs as described in Section 4 and adherence to the terms of an approved TDEC Division of Water Resources (DWR) National Pollutant Discharge Elimination System (NPDES) Construction Stormwater General Permit, including the development and implementation of a site-specific Stormwater Pollution Prevention Plan (SWPPP), and the prevention of increased pre and post-construction sediment yield and flow velocity. Permit standards would be adhered to during all construction activities.

No long-term E&S impacts would be anticipated due to the nature of the Proposed Action. There would be limited impervious surfaces associated with the cemetery development and long-term soil erosion impacts would be managed by maintaining appropriately designed stormwater management features associated with the proposed cemetery.

The Proposed Action would irreversibly convert up to 91 acres at Site 1 or up to 46 acres at Site 2 of prime farmland into non-agricultural uses. As a result, the Proposed Action is subject to the FPPA requirements. VA would complete, in conjunction with the NRCS, a Farmland Conversion Impact Rating Form (Form AD-1006) for the selected site. This process evaluates the relative value of the site compared to other farmland in the locale. Based on characteristics of the sites and surrounding areas, the Proposed Action is anticipated to have minor, long-term, direct adverse impacts on farmland soils.

3.6.3 Effects of the No Action Alternative

Under the No Action Alternative, no impacts to soils or geology by VA would occur. The sites would likely remain mostly unimproved agricultural land. Minor soil erosion impacts from agricultural use would continue.

3.7 Hydrology and Water Quality

This section describes the affected environment, regulatory setting, and potential Proposed Action impacts for hydrology and water quality (surface water and groundwater). Wetlands, floodplains and coastal zones are discussed in Section 3.11.

The Federal Water Pollution Control Act, commonly referred to as the Clean Water Act (CWA), governs the control of water pollution in the U.S. The CWA authorizes the USEPA to regulate point sources that discharge pollutants into waters of the U.S. (WOTUS). USEPA has authorized TDEC DWR to implement the NPDES stormwater permitting program in Tennessee.

Under section 303(d) of the CWA, states are required to develop and update, every two years, a list of waters that are impaired by one or more pollutants. Impaired waters are those that do not meet Water Quality Standards (WQSs) for their designated use. After identification as impaired, the state creates and prioritizes Total Maximum Daily Loads (TMDLs) to target and implement pollution reduction strategies and watershed plans to improve water quality. The TDEC DWR Watershed Stewardship oversees Tennessee's TMDL program for the 303(d) listed waterbodies.

Section 438 of the Energy Independence and Security Act of 2007 (EISA) requires federal agencies to reduce stormwater runoff from federal development projects to protect water resources. Section 438 requires any development or redevelopment of a federal facility with a footprint exceeding 5,000 square feet to maintain or restore, to the extent technically feasible, the predevelopment hydrology of a property with regard to the temperature, rate, volume, and duration of flow.

3.7.1 Surface Waters

Site 1

Site 1 is located within the Tennessee River/Chickamauga Lake Middle watershed. Chickamauga Lake forms the western site boundary. Chickamauga Lake is reservoir along the Tennessee River that was created in 1940, when the Tennessee Valley Authority (TVA) installed the Chickamauga Dam (hydroelectric dam) in Chattanooga, approximately 25 miles southwest of the site. The lake is approximately 60 miles long and used by regional residents for recreational activities. The full pool elevation is approximately 682 to 683 feet above msl, which is typically maintained from May to August. The lake level drops to approximately 676 feet between November and March, depending upon weather conditions and power needs (www.chickamaugalake.info). TVA owns the shoreline property to the 685.44 feet above msl elevation.

On behalf of the VA, ERG performed a preliminary hydrology and stormwater evaluation of Site 1 in June 2021. ERG identified the presence of two surface water features (ponds) located in the north-central portion of the site on each side of the site access road near Hiwassee Highway (Figure 3-3). The ponds were dry at the time of ERG's site inspection. Section 3-11 discusses these ponds in more detail. No other surface waters were identified on or adjacent to Site 1.

ERG defined four existing, distinct stormwater drainage areas at the site, identified on Figure 3-3 as Tracts 1-4, which are controlled by the topographic slope of the site. Within Tract 1 and Tract 4, stormwater flows primarily to the west, whereas Tract 2 flows towards the northwestern section of the site and Tract 3 flows towards the southern portion of the site.

The Tennessee River/Chickamauga Lake is not listed on the State of Tennessee's' 303(d) list of impaired waterbodies.

Site 2

Site 2 is located in the Sequatchie River – Cannon Creek Watershed. McWilliams Creek, a perennial stream, flows along the entire eastern boundary of the site. From the site, McWilliams Creek flows southwest approximately one mile to the Sequatchie River. From there, the Sequatchie River flows southwest approximately 32 miles, where it discharges in toe the Tennessee River. In addition, an intermittent stream, an unnamed tributary to McWilliams Creek, is located in the western portion of the site. From the site, the tributary flows south approximately 3,500 feet, where it flows into McWilliams Creek. The locations of McWilliams Creek and its unnamed, intermittent tributary are shown on Figure 3-4. Section 3.11 provides additional information regarding these streams.

On behalf of the VA, ERG performed a preliminary hydrology and stormwater evaluation of Site 2 in June 2021. ERG identified McWilliams Creek along the eastern site boundary and the intermittent stream located in the western portion of the site. No other surface waters were identified on or adjacent to Site 2.

ERG defined three existing, distinct stormwater drainage areas at the site, identified on Figure 3-4 as Tracts 1-3, which are controlled by the site topography. Tract 1 and Tract 3 flow toward McWilliams Creek; Tract 2 flows toward the intermittent tributary.

McWilliams Creek is not listed on the State of Tennessee's' 303(d) list of impaired waterbodies.

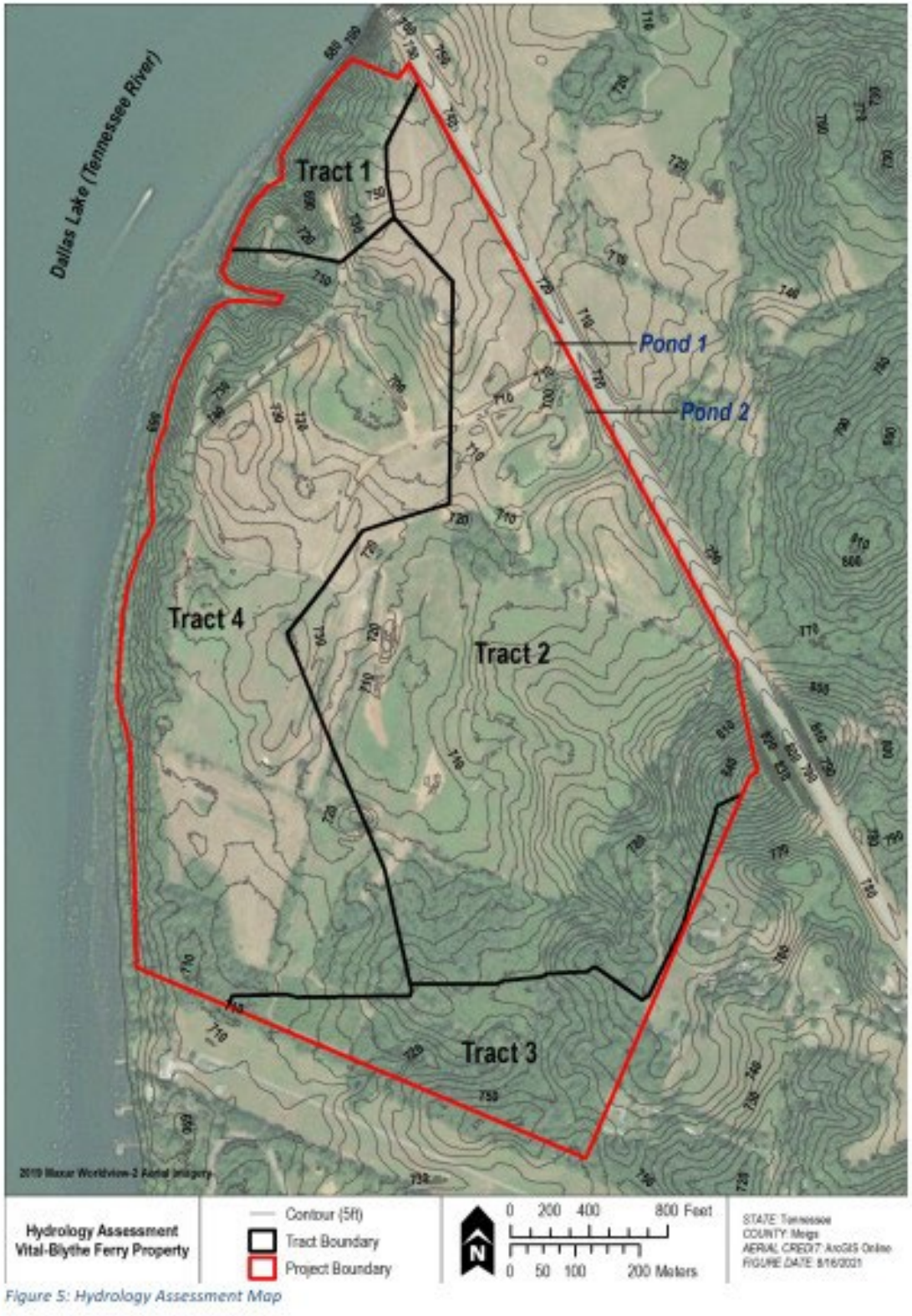

Figure 3-3 Surface Drainage Tracts and Surface Water Features at Site 1

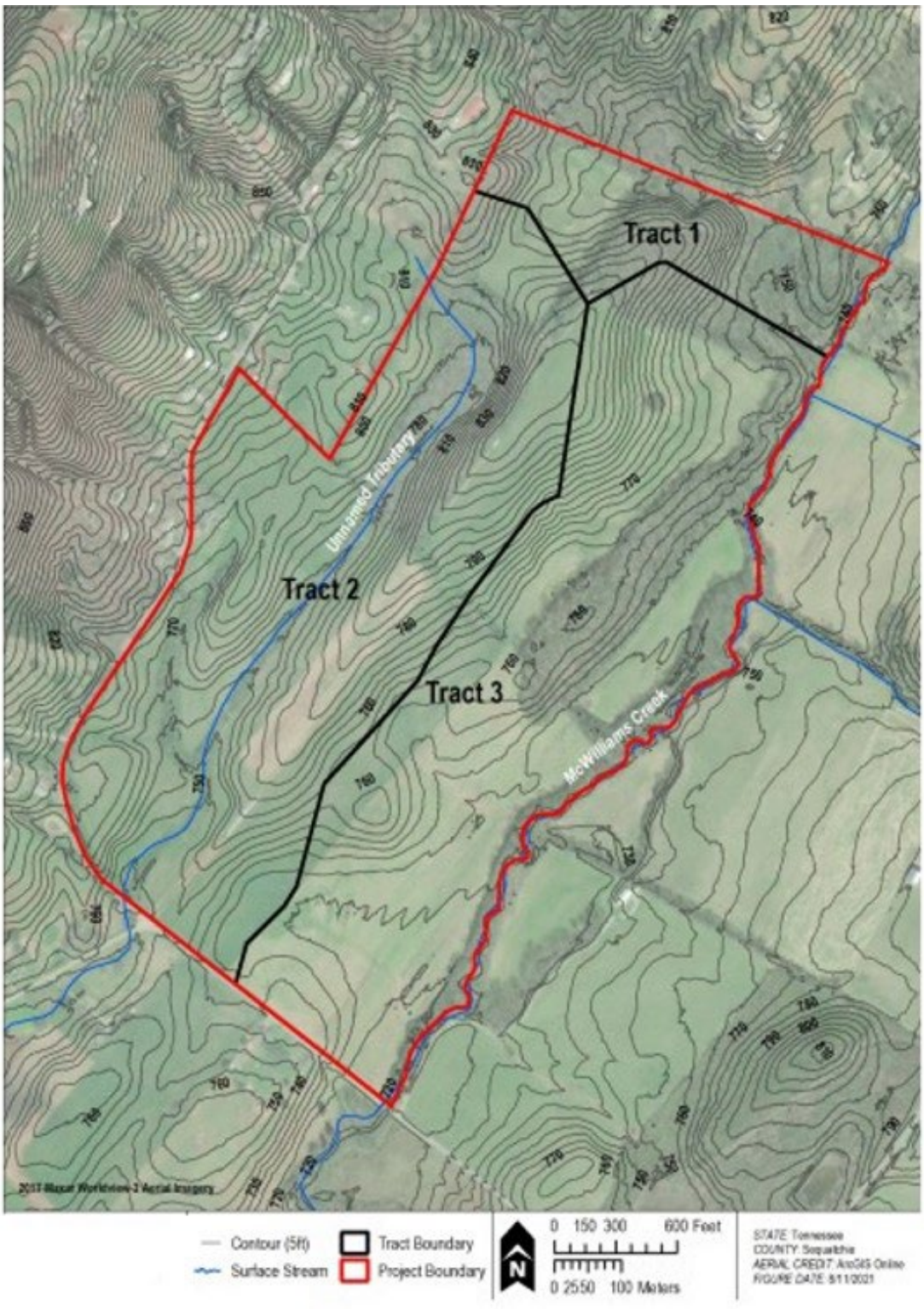

Figure 3-4 Surface Drainage Tracts and Surface Water Features at Site 2

3.7.2 Groundwater

Site 1

The Groundwater Atlas of the United States indicates that Site 1 is underlain by the Newala Formation aquifer, which is located within the Valley and Ridge physiographic province.

The Site 1 area is serviced with municipal water provided by the Savannah Valley Utility District. The site does not contain any water wells. The TDEC Water Well Desktop Application indicates there are water wells within the site area, but there are no recorded water wells at the site. Site 1 is not located within an USEPA-designated sole source aquifer area, per the USEPA Sole Source Aquifers internet mapping application.

The geotechnical investigation of the site did not encounter groundwater within 15 feet of the ground surface.

Site 2

The Groundwater Atlas of the United States indicates that Site 2 is Cumberland Plateau aquifer system, which is located within the Valley and Ridge physiographic province.

The Site 2 area is serviced with municipal water provided by the City of Dunlap. However, the site residence uses an on-site water well. The TDEC Water Well Desktop Application indicates Site 2 contains a 125 feet deep water well that was installed in 1977, likely the well associated with the on-site residence, and other water wells in the site area. Site 2 is not located within an USEPA-designated sole source aquifer area, per the USEPA Sole Source Aquifers internet mapping application.

The geotechnical investigation of the site did not encounter groundwater within 15 feet of the ground surface.

3.7.3 Effects of the Proposed Action

Surface water impacts associated with the cemetery development (associated with soil erosion and sedimentation) would be less than significant. The cemetery would be designed in concert with the natural topography and current drainage patterns. It is anticipated the cemetery design would include natural buffers of undeveloped land along Chickamauga Lake (Site 1) and McWilliams Creek and its unnamed tributary (Site 2). In addition, VA would implement BMPs described in Section 4 to control construction-related impacts of soil erosion and sedimentation and would provide onsite stormwater management consistent with the EISA Section 438 requirements following the development of the cemetery.

Based on the geotechnical investigation, groundwater is greater than 15 feet bgs at both sites and would not likely be encountered or adversely impacted during cemetery construction activities.

No significant long-term groundwater impacts are anticipated as a result of the Proposed Action. Based on standard modern burial practices, it is unlikely that toxic embalming fluid or other decomposition byproducts would be released into the soil and/or groundwater. The standard NCA design incorporates (for full casket burials) sub-surface concrete crypts, an entire section of which would be installed during site construction, above the water table. Using this technique, the caskets are not buried directly in the soil, but are rather set in a pre-placed concrete crypt (established turf and soil temporarily removed, crypt lid removed, casket placed, followed by the reverse process to complete). In addition, modern embalming fluids are markedly less toxic as the primary active ingredients are no longer arsenic based. Modern embalming fluids are commonly biodegradable. In addition, as selection of either cremains interment or columbaria placement increase, and green burials increase, the potential for soil or groundwater contamination commensurately decreases as no embalming fluids are used. Therefore, burial practices would have negligible impacts on groundwater resources.

During the cemetery design, VA would coordinate with the local water utility at the selected site to determine if the municipal water system has sufficient capacity to meet the irrigation needs of the cemetery. If the municipal water system does not have the capacity, VA would likely install an on-site irrigation water well. NCA's modern cemetery development practices include the use of native grasses and low-moisture vegetation species, to the extent possible, thereby reducing the need for irrigation. Consequently, the proposed cemetery would have a less-than-significant impact on groundwater resources in the site area.

3.7.4 Effects of the No Action Alternative

Under the No Action Alternative, no impacts to hydrology or water quality by VA would occur. The sites would likely remain mostly unimproved agricultural land within negligible hydrology or water quality impacts.

3.8 Wildlife and Habitat

Wildlife and habitat include native or naturalized plants and animals and the ecosystems (e.g., forest, freshwater, grasslands) in which they exist. The environment of southeastern Tennessee is known as a temperate deciduous and mixed forest area with mild temperatures.

Site 1

Site 1 consists mostly of agricultural fields with gentle rolling hills. Areas near the eastern, southern and western site boundaries are mostly wooded. In the drier, upland areas, Appalachian oak forest is typical, with a mixture of assorted oaks, hickory, pine, poplar, birch, and maple trees. In the wetter areas, bottomland oak and mesophytic forests dominate. The area surrounding the site consists of mostly agricultural and low-density residential properties with agricultural fields and unimproved forested lands. Chickamauga Lake forms the western boundary of the site. Vegetation communities on site and the surrounding area support the wildlife species typical of rural Meigs County (e.g., coyote, fox squirrel, raccoon, and white-tailed deer).

Site 2

Site 2 consists of mostly unimproved agricultural land and wooded land with a residence located on the western portion of the site. The northern portion of the site contains agricultural fields and wooded areas; the southern portion of the site is almost entirely agricultural. An intermittent stream is located in the western portion of the site and McWilliams Creek runs along the eastern site boundary. The areas around the streams are wooded. Mostly mixed oak forest occurs on the upland portions with mixed mesophytic forest of maple, buckeye, beech, tulip poplar, and oak in the deep richer soils of the lower slope areas. Vegetation communities on site and the surrounding area support the wildlife species typical of rural Sequatchie County (e.g., coyote, fox squirrel, raccoon, and white-tailed deer).

3.8.1 Threatened and Endangered Species

As part of the preparation of this EA, the USFWS and Tennessee natural resources agencies were contacted to identify the potential for the presence of federally or state listed species on or in the vicinity of the sites.

USFWS Information for Planning and Conservation (IPaC) official species lists were generated for the sites to assess for the potential presence of federally listed protected species. No critical habitats were identified on or adjacent to either site. The IPaC reports for both sites are provided in Appendix E.

The Tennessee Wildlife Resource Agency (TWRA) protects threatened and endangered animal species in Tennessee. The TDEC Division of Natural Areas is responsible for the oversight and management of Tennessee's rare, threatened, and endangered plant and animals, which are tracked through the Natural Heritage Inventory Program. Site-specific information was not available from the TDEC Natural Heritage

Inventory Program database; instead, sensitive species with potential to occur within the watershed and the USGS topographic quadrangle for each site were evaluated.

Table 3-1 provides a summary of the federally and state protected species listed in the IPaC report and the TDEC Natural Heritage Inventory Program database for each site and also includes species habitat requirements and their potential for occurrence at each site.

Table 3-1 Federal and State Listed Sensitive Species in the Vicinity of the Sites

Species	Status	Habitat	Potential Habitat Present	
			Site 1	Site2
Mammals				
Gray Bat *Myotis grisescens*	F/ S- Endangered	Year-round cave dwellers in limestone karst areas of the southeastern United States (USFWS 2019).	No	
Indiana Bat *Myotis sodalis*	F/ S- Endangered	Restricted to underground hibernacula (caves and mines) in winter. In summer, roosts under exfoliating bark of dead trees that retain large, thick slabs of peeling bark. Roost trees are typically within canopy gaps in a forest, in a fenceline, or along a wooded edge (USFWS 2007).	Yes, potential summer roosting habitat	
Northern Long-eared Bat *Myotis septentrionalis*	F/ S-Threatened	Found in a variety of forested habitats. During summer, roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. In winter, hibernates in caves and mines (USFWS).	Yes, potential summer roosting habitat	
Eastern small-footed bat *Myotis leibii*	F- None S- Deemed in Need of Management	Hibernates in caves and mines, also uses rock outcrops, abandoned buildings, bridges, and barns seasonally (TDEC 2021).	No	N/A
Allegheny woodrat *Neotoma magister*	F- None S- Deemed in Need of Management	Outcrops, cliffs, talus slopes, crevices, sinkholes, caves & karst in upland habitat.	No	N/A
Amphibian				
Berry Cave Salamander Gyrinophilus gulolineatus	F- Candidate S- Threatened	Aquatic cave obligate; subterranean waters of the Appalachian Ridge & Valley Province (TDEC 2021, USFWS 2019).	No	N/A
Four-toed Salamander *Hemidactylium scut*	F- None S- Deemed in Need of Management	Hardwood forests surrounding boggy areas, woodland swamps, shallow depressions and sphagnum mats on acidic soils (TDEC 2021).	N/A	No

Species	Status	Habitat	Potential Habitat Present	
			Site 1	Site2
Clams				
Oyster Mussel *Epioblasma capsaeformis*	F/ S- Endangered	Associated with riffle areas exhibiting high energy flows, high water quality, and rocky substrates. Also inhabits small to medium-sized rivers, and sometimes large rivers (NatureServe Explorer 2021).	N/A	No, McWilliams Creek lacks riffle areas exhibiting high energy flows
Slabside Pearlymussel *Pleuronaia dolabelloides*	F/ S- Endangered	Occurs in moderate to high gradient riffles systems in creeks to large rivers at depths < 1 meter (NatureServe Explorer 2021).	N/A	No, McWilliams Creek lacks moderate to high gradient riffle systems
Dromedary Pearlymussel *Dromus dromas*	F/ S- Endangered	Riffle dwelling species occurring at shoals with sand and gravel and moderate current velocities, but also found in deeper, slower moving water in Tennessee. Most often observed in clean, fast-flowing water in substrates that contain relatively firm rubble, gravel, and stable, clean substrates (NatureServe Explorer 2021).	No	N/A
Fanshell *Cyprogenia stegaria*	F/ S- Endangered	Medium to large rivers with sand or gravel in deep water of moderate current (USFWS 1997).	No	N/A
Orangefoot Pimpleback (pearlymussel) *Plethobasus cooperianus*	F/ S- Endangered	Medium to large rivers in sand, gravel, and cobble substrates in riffles and shoals in deep water and steady currents as well as some shallower shoals and riffles (NatureServe Explorer 2021).	No	N/A
Pink Mucket (pearlymussel) *Lampsilis abrupta*	F/ S- Endangered	Mud and sand in shallow riffles and shoals swept free of silt in major rivers and tributaries (USFWS 2019).	No	N/A
Rough Pigtoe *Pleurobema plenum*	F/ S- Endangered	Wide variety of streams from large too small (USFWS 2019).	No	N/A
Fishes				
Laurel Dace *Chrosomus saylori*	F/ S- Endangered	Limited to six small streams on Walden's Ridge, part of the Cumberland Plateau in central Tennessee (George et al. 2016).	No	No
Snail Darter *Percina tanasi*	F/ S- Threatened	Hiwassee River in sand and gravel runs (NatureServe Explorer 2021).	No	N/A
Lake Sturgeon *Acipenser fulvescens*	F- None S- Endangered	Bottoms of large clean rivers and lakes (TDEC 2021).	No	N/A

Species	Status	Habitat	Potential Habitat Present	
			Site 1	Site2
Highfin Carpsucker *Carpiodes velifer*	F- None S- Deemed in Need of Management	Large rivers, mostly in Tennessee River drainage (NatureServe Explorer 2021).	No	N/A
Tennessee Dace *Chrosomus tennesseensis*	F- None S-Deemed in Need of Management	First order spring-fed streams of woodlands in Ridge and Valley limestone region; Tennessee River watershed (TDEC 2021).	N/A	No
Flame Chub *Hemitremia flammea*	F- None S-Deemed in Need of Management	Springs and spring-fed streams with lush aquatic vegetation (TDEC 2021).	N/A	No
Avians				
Heron Rookery *Ardea* spp.	F- None S- Rare	Riparian corridors, marshes, and groves of trees next to water or on islands (GGAS 2021).	Possible along Chickamauga Lake	N/A
Flowering Plants				
White Fringeless Orchid *Platanthera integrilabia*	F- Threatened S- Endangered	Wet, flat, boggy areas in acidic muck or sand, and in partially, but not fully shaded areas at the head of streams or seepage slopes (Shaw et al. 2021, TDEC 2021).	N/A	Unlikely along McWilliams Creek
Large-flowered Skullcap *Scutellaria montana*	F/ S- Threatened	Rocky, submesic to xeric, well-drained, slightly acidic slope, ravine and stream bottom forests in the Ridge and Valley and Cumberland Plateau provinces (McKerrow 1996, Shaw et al. 2021).	No	Possible along McWilliams Creek
Virginia Spiraea *virginiana*	F/ S- Threatened	Periodically flood-scoured banks of high gradient (steep slope and rapid flow of water) mountain streams (NatureServe Explorer 2021).	N/A	No
Small's Stonecrop *Diamorpha smallii*	F- None S- Endangered	Sandstone outcrops in upland habitats (NatureServe Explorer 2021).	N/A	No
Southern Twayblade *Listeria australis*	F- None S- Endangered	Wet mesic woods, known from Coffee County (Shaw et al. 2021, TDEC 2021).	N/A	No
Roundleaf Shadbush *Amelanchier sanguinea*	F- None S- Threatened	Margins of woods, river ledges, shorelines, rocky slopes, crevices of open rock faces and cliffs, noncalcareous to slightly calcareous sites (Shaw et al. 2021).	N/A	No
White Prairie-clover *Dalea candida*	F- None S- Threatened	Upland barrens (TDEC 2021).	No	N/A
Alabama snow-wreath	F- None S- Threatened	Forested areas on thin soil over limestone that is moist for part of the	Possible along	N/A

Species	Status	Habitat	Potential Habitat Present	
			Site 1	Site2
Neviusia alabamensis		year like seasonal streambeds, margins of sinkholes, riverbluffs (NatureServe Explorer 2021, Shaw et al. 2021).	Chickamauga Lake	
American Ginseng *Panax quinquefolius*	F- None S- Special Concern	High quality mesic deciduous woodlands, not known in Sequatchie or Meigs Counties (Anderson and Peterson 2003, Shaw et al. 2021).	No	No

Site 1

Based on the IPaC report for Site 1, three mammals (gray bat, Indiana bat, and northern long-eared bat), two fish (laurel dace and snail darter), and five clams (dromedary pearlymussel, fanshell, orangefoot pimpleback, pink mucket, and rough pigtoe) have potential to occur in the Site 1 area. Based on the habitat requirements for the fish and clams (open/running water), these species are unlikely to occur on site. The lack of caves at Site 1 precludes the gray bat from occurring on site due to a lack of roosting habitat. The lack of caves at Site 1 also precludes both the Indiana bat and the northern long-eared bat during the wintertime since these species require caves for hibernation. However, both species roost during the summer (and through the fall for the northern long-eared bat) in wooded areas, which are found along the eastern, southern and western sides of the site. Therefore, potential roosting habitat may be present at Site 1 during the summer and fall for both the Indiana bat and the northern long-reared bat.

The TDEC Natural Heritage Program database identified nine species, one mammal (gray bat), two fish (lake sturgeon and highfin carpsucker), four flowering plants (Alabama snow-wreath, American ginseng, large-flowered skullcap, and white prairie-clover), one amphibian (berry cave salamander), and a general animal assemblage (heron rookery) that have potential to occur in the Site 1 Tennessee River-Chickamauga Lake Middle watershed. The TDEC Natural Heritage Program database identified seven species that have potential to occur within the Site 1 Graysville USGS topographic quadrangle, including three mammals (Allegheny woodrat, eastern small-footed bat, and gray bay), one amphibian (berry cave salamander), two flowering plants (Alabama snow-wreath and large-flowered skullcap), and a general animal assemblage (heron rookery).

Some of the species identified within the TDEC Natural Heritage Program database were also listed on the IPaC report and were previously discussed. State species unique to the TDEC database are discussed in this paragraph. Based on the habitat requirements for the highfin carpsucker and lake sturgeon, consisting of large running rivers and lakes, these fish species do not occur on site. However, they may occur within the adjacent Chickamauga Lake/Tennessee River. The lack of subterranean aquatic caves precludes the berry cave salamander from occurring on site. The lack of roosting habitat associated with caves, mines, abandoned buildings, and rock outcrops precludes the eastern small-footed bat from occurring at Site 1. The Allegheny woodrat is found within outcrops, cliffs, talus slopes, sinkholes, and caves in upland habitat which is lacking in the Site 1 area. Of the four flowering plant species, the Alabama snow-wreath is the only plant species with potential habitat at Site 1. The wooded shoreline along Chickamauga Lake, which is seasonally wet due to fluctuating lake levels, provides potential habitat for this plant. The wooded shoreline along the lake also provides potential heron rookery habitat.

Site 2

Based on the IPaC report for Site 2, three mammals (gray bat, Indiana bat, and northern long-eared bat), two clams (oyster mussel and slabside pearlymussel), and three flowering plants (large-flowered skullcap,

Virginia spirea, and white fringeless orchid) have potential to occur in the Site 2 area. Based on the habitat requirements for the two clam species (riffle areas of fast-flowing streams and rivers), the Virginia spirea (high gradient, steep sloped stream), and the white fringeless orchid (shrub/scrub or bog wetlands), they are unlikely to occur at the site. No caves were observed at Site 2; therefore, there is no roosting habitat for the gray bat at the site. The large-flowered skullcap is typically found in rocky, shallow soils in ravine and stream bottom forests and has potential to occur in the wooded area along McWilliams Creek. Wooded areas provide potential roosting habitat for the Indiana bat and northern long-eared bat and occur along the eastern boundary of Site 2 and in the northern portion of the site.

The TDEC Natural Heritage Program database identified six species, three flowering plants (American ginseng, roundleaf shadbush, and small's stonecrop), two mollusks (oyster mussel and slabside pearlymussel), and one fish species (Tennessee dace) that have potential to occur within the Site 2 Sequatchie River-Cannon Creek watershed. The TDEC Natural Heritage Program database identified nine species that have potential to occur within the area of the Site 2 Mount Airy USGS topographic quadrangle, including three flowering plants (southern twayblade, American ginseng, and roundleaf shadbush), two molluscs (oyster mussel and slabside pearlymussel), three fish (flame chub, laurel dace, and Tennessee dace), and one amphibian (four-toed salamander).

Other than the large-flowered skullcap, no plant species identified by the TDEC Natural Heritage Program database have potential to occur at Site 2. Tennessee dace is a fish species that is found within spring-fed first order streams. McWilliams Creek is a third order perennial stream with a groundwater table connection that is unlikely to provide suitable habitat for the Tennessee dace. McWilliams Creek also does not provide suitable habitat for flame chub fish, which are associated with springs and spring-fed streams. Likewise, McWilliams Creek lacks riffles with high gradient flows, which precludes the two mollusk species from occurring on site. The four-toed salamander prefers hardwood forests surrounded by boggy areas. Site 2 does not contain this habitat.

Migratory Birds and Eagles

Certain birds are protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. The IPaC reports identified bald eagles and golden eagles have the potential to occur in the area of Site 1. The IPaC reports also identified the rusty blackbird as a migratory Bird of Conservation Concern protected under the MBTA that has the potential to occur at both sites. Of these birds, only the bald eagle (Site 1 area) has the potential to be in the site area during its breeding season. Other migratory birds, common to the region and not listed by USFWS as Birds of Conservation Concern, also have potential nest within the vicinities of the sites.

3.8.2 Effects of the Proposed Action

Construction activities would result in direct and indirect, short-term and long-term impacts to wildlife at the selected site through displacement of common wildlife that inhabit or use the site for nesting, foraging, or cover and potentially causing direct mortality to individuals of some species. Habitat associated with common wildlife would be impacted from the permanent conversion of unimproved land into manicured cemetery grounds. However, both sites are mostly cultivated agricultural land, which provides very limited wildlife habitat. It is anticipated that the initial phase of cemetery development would largely occur within the agricultural areas with little impact to wooded areas. Additionally, the common terrestrial wildlife species that could be impacted are widely distributed; thus, loss of some individuals and habitat would not measurably impact population abundance or the distribution throughout their range.

Both sites contain wooded areas that provide potential summer roosting habitat for the federally protected Indiana bat and the northern long-eared bat and fall roosting habitat for the northern-long eared bat. The active roosting season for these bats (based on the northern-long eared bat which has the potential to occur over a longer time period) is from April 1st to October 31st (USFWS 2016). Although large, wooded areas

are not expected to be cleared as part of the initial cemetery development, some tree clearing may occur. It is anticipated that VA would conduct seasonal tree clearing (between November 1 and March 31), outside the active season for bat roosting to avoid potential impacts to Indiana bats and the northern long-eared bats. If seasonal tree clearing is not possible, VA would consult with USFWS to develop and implement appropriate measures to minimize potential impacts to the protected bat species.

The federally protected large-flowered skullcap has the potential to occur in the wooded area along McWilliams Creek at the eastern boundary of Site 2. If Site 2 is selected, it is anticipated that the wooded area along McWilliams Creek would remain undisturbed; therefore, no impacts to the large-flowered skullcap would be expected. VA would coordinate with the USFWS for any proposed development near McWilliams Creek.

The wooded western border of Site 1 along Chickamauga Lake provides potential nesting habitat for bald eagles and herons, which have the potential to occur in the site vicinity. No active or inactive eagle or heron nests were observed at Site 1 during the 2021 site visit. It is not anticipated that the wooded area along the lake would be disturbed during the cemetery development. However, if Site 1 is selected, a qualified biologist would inspect the site prior to construction. If active bald eagle or heron nests are identified, VA would work with TWRA and USFWS to determine appropriate conservation measures.

Additionally, State of Tennessee special status species, Alabama snow-wreath has the potential to occur along the Chickamauga Lake shoreline at the western boundary of Site 1. However, it is not anticipated the shoreline where this plant might occur would be disturbed the cemetery development.

Any initial clearing of an area within the sites that occurs during the bird breeding season, generally mid-April to July 1st (USDA FDA 2013) could impact nesting migratory birds protected under the MBTA. It is anticipated that clearing for the cemetery development would occur outside of this timeframe.

Immediately prior to initial clearing, the selected site would be surveyed for active nests. For nesting sites discovered within active or imminent construction areas, nest protection practices would be developed in consultation with the USFWS to minimize potential impacts, on a case-by-case basis in consideration of nest location, bird species and habitat requirements, expected duration of nesting activity, and the location, type, and duration of construction activities (based on recommendations published by USFWS *Nationwide Standard Conservation Measures*).

3.8.3 Effects of the No Action Alternative

Under the No Action Alternative, no impacts to vegetation or wildlife by VA would occur. The sites would likely remain mostly unimproved agricultural land with negligible biological resource impacts.

3.9 Noise

The existing noise environment at and around the sites is relatively quiet with minor noise associated with vehicle traffic on Hiwassee Highway (Site 1) and nearby rural roads (Site 2), and occasional noise associated with agricultural equipment such tractors, combines, and harvesters. As such, both sites' noise environment can be characterized as that typical of a partially developed, mostly agricultural, rural area.

3.9.1 Sensitive Receptors

Site 1

Sensitive noise receptors in the vicinity of Site 1 include residences located approximately 50 to 100 feet and farther east of the site and residences approximately 250 feet and farther south of the site. No other sensitive noise receptors, such as schools, daycare facilities, libraries, parks and designated natural areas are located within 0.50-mile of Site 1.

Site 2

Sensitive noise receptors in the vicinity of Site 2 include scattered residences located approximately 150 to 200 feet and farther north of the site, scattered residences approximately 500 feet and farther east of the site, scattered residences approximately 50 feet and farther south of the site, and several residences approximately 50 to 500 feet west of the site. No other sensitive noise receptors are located within 0.50-mile of Site 2.

3.9.2 Effects of the Proposed Action

The Proposed Action would have short-term adverse impacts to the existing noise environment during the cemetery construction activities. Noise generating sources during construction activities would be associated primarily with standard construction equipment and construction equipment transportation. These increased noise levels could directly affect the neighboring areas.

Construction activities generate noise by their very nature and are highly variable, depending on the type, number, and operating schedules of equipment. Construction projects are usually executed in stages, each having its own combination of equipment and noise characteristics and magnitudes. Construction activities are expected to be typical of other similar construction projects and would include mobilization, site preparation, excavation, placing foundations, pre-placed crypt installation, utility development, heavy equipment movement, and paving roadways and parking areas. Although shallow bedrock was encountered at two locations during the geotechnical investigation of Site 2, it is anticipated that the cemetery could be developed at the site with conventional construction equipment without the need for rock blasting.

The most prevalent noise source at typical construction sites is the internal combustion engine. General construction equipment using engines includes, but is not limited to, heavy, medium, and light equipment such as excavators, roller compactors, front-end loaders, bulldozers, graders, backhoes, dump trucks, water trucks, concrete trucks, pump trucks, utility trucks, and lube, oil, and fuel trucks.

Peak noise levels vary at a given location based on the line of sight, topography, vegetation, and atmospheric conditions. In addition, peak noise levels would be variable and intermittent because each piece of equipment would only be operated when needed. However, peak construction noise levels would be considerably higher than existing noise levels. Relatively high peak noise levels in the range of 93 to 108 dBA (decibels, A-weighted scale) would occur on the active construction site, decreasing with distance from the construction areas. Table 3-2 presents peak noise levels that could be expected from a range of construction equipment during proposed construction activities.

Generally speaking, peak noise levels within 50 feet of active construction areas and material transportation routes would most likely be considered “striking” or “very loud”, comparable to peak crowd noise at an indoor sports arena. At approximately 200 feet, peak noise levels would be loud and approximately comparable to a garbage disposal or vacuum cleaner at 10 feet. At 0.25-mile, construction noise levels would generally be quiet enough so as to be considered insignificant, although transient noise levels may be noticeable at times.

Combined peak noise levels, or worst-case noise levels when several loud pieces of equipment are used in a small area at the same time as described in Table 3-2, are expected to occur rarely, if ever, during the project. However, under these circumstances, peak noise levels could exceed 90 dBA within 200 feet of the construction area, depending on equipment being used.

Table 3-2 Peak Noise Levels Expected from Typical Construction Equipment

Source	Peak Noise Level (dBA, attenuated)							
	Distance from Source (feet)							
	0	50	100	200	400	1,000	1,700	2,500
Heavy truck	95	84-89	78-93	72-77	66-71	58-63	54-59	50-55
Dump truck	108	88	82	76	70	62	58	54
Concrete mixer	108	85	79	73	67	59	55	51
Jack-hammer	108	88	82	76	70	62	58	54
Scraper	93	80-89	74-82	68-77	60-71	54-63	50-59	46-55
Bulldozer	107	87-102	81-96	75-90	69-84	61-76	57-72	53-68
Generator	96	76	70	64	58	50	46	42
Crane	104	75-88	69-82	63-76	55-70	49-62	45-48	41-54
Loader	104	73-86	67-80	61-74	55-68	47-60	43-56	39-52
Grader	108	88-91	82-85	76-79	70-73	62-65	58-61	54-57
Pile driver	105	95	89	83	77	69	65	61
Forklift	100	95	89	83	77	69	65	61

Combined Peak Noise Level (Bulldozer, Jackhammer, Scraper)					
Combined Peak Noise Level	Distance from Source				
	50 feet	100 feet	200 feet	¼ mile	½ mile
	103	97	91	74	68

Source: Tipler 1976

Although noise levels would be quite loud in the immediate area, the intermittent nature of peak construction noise levels would not create the steady noise level conditions for an extended duration that could lead to hearing damage. Construction workers would follow standard Federal Occupational Safety and Health Administration (OSHA) requirements to prevent hearing damage.

Areas that could be most affected by noise from construction include those closest to the construction footprint, including nearby residences. Indoor noise levels would be expected to be 15-25 dBA lower than outdoor levels. In addition, construction noise impacts would be temporary and would be minimized through BMPs outlined in Section 4.

Indirect impacts include noise from workers commuting and material transport. Area traffic volumes and noise levels would increase as construction employees commute to and from work at the project area, and delivery and service vehicles (including trucks of various sizes) transit to and from the site. Because trucks are present during most phases of construction and leave and enter the site via local roads, truck noises tend to impact more people over a wider area. For this Proposed Action, persons in the area near the selected site would experience temporary minor adverse increases in traffic noise during day-time hours. These

effects are considered minor because they would be temporary and generally similar to existing traffic noise levels in the area.

Proposed operational activities at the cemetery would include vehicle traffic to and from the selected site, use of powered equipment for grave site preparation, maintenance, and upkeep, and periodic (during weekday, day-time hours) ceremonial rifle discharges from the committal shelters. Estimated ceremonial rifle salute noise levels at varying distances based on US Army estimates are provided in Table 3-3. The cemetery operational activities would not produce excessive noise and would not produce a significant adverse noise impact on surrounding land uses. The facility would be a relatively quiet cemetery.

Table 3-3 Estimated M-16 Rifle Blank Noise Levels at Varying Distances

Distance (meters)	A-Weighted Exposure Level (dBA)	A-Weighted Maximum Level (dBA)
50	67	76
100	61	70
200	54	63
400	40	49
800	32	41
1,600	22	31

3.9.3 Effects of the No Action Alternative

Under the No Action Alternative, the noise environment surrounding the sites would not be altered by activities from the Proposed Action. The sites would likely remain mostly unimproved agricultural land with periodic noise from agricultural equipment.

3.10 Land Use

Site 1

Site 1 consists mostly of agricultural fields with wooded areas near the eastern, southern and western site boundaries. A small derelict, overgrown cemetery (Old Browder Cemetery) is located on its own 0.46-acre parcel in the central portion of the site but is not part of the site. The area surrounding the site is mostly agricultural land and low-density residential properties. The areas located to the north and east, across Hiawassee Highway, are agricultural fields and unimproved forested lands. Low-density residential properties are located to the southeast and to the south of the site. Chickamauga Lake forms the western boundary of the site.

TVA manages Chickamauga Lake/Tennessee River and owns the shoreline property to the 685.44 feet above msl elevation. TVA also maintains permanent flood rights to the 690 feet above msl and restricts the building of habitable structures below the 691 feet above msl mark.

Site 1 is located in unincorporated Meigs County. Community growth and development in the site area is overseen by the Meigs County Regional Planning Commission. The site is zoned for R-2 (medium density residential district), which was likely established in anticipation of a residential development at the site that

was planned in the late 2000s but was never constructed. The R-2 zoning district does not include cemeteries as a specific permitted use; however, as a federal agency, VA is not subject to local zoning regulations.

Site 2

Site 2 consists of mostly unimproved agricultural land and wooded land with a single-story house and two sheds located on the western portion of the site. The northern portion of the site contains agricultural fields and wooded areas; the southern portion of the site is almost entirely agricultural. The site is located in a rural area consisting of agricultural fields, wooded land and low-density residential properties. Approximately 200 feet southwest of the site, across the intersection of Kelly Cross Road and Bostontown Road, is McWilliams Family Cemetery.

Site 2 is located within unincorporated Sequatchie County; Sequatchie County does not have any zoning regulations.

3.10.1 Effects of the Proposed Action

The Proposed Action would have less-than-significant, long-term land use effects. The selected site would be transformed from mostly undeveloped agricultural land with wooded areas to a National Cemetery However, the proposed cemetery would be generally consistent with the low impact development of the aera and generally compatible with the surrounding land uses at both sites.

3.10.2 Effects of the No Action Alternative

Under the No Action Alternative, no land use impacts due to VA's Proposed Action would occur. The sites would likely remain mostly unimproved, agricultural land with no land use impacts.

3.11 Wetlands, Floodplains, and Coastal Zone Management

3.11.1 Wetlands

This section discusses wetlands at or near the sites and surface waters (streams) as they pertain to wetlands. Additional information regarding surface waters is provided in Section 3.7.

Site 1

The USFWS National Wetlands Inventory (NWI) Map for the Site 1 area identified three small freshwater ponds, two on-site and one adjacent to the site (Figure 3-5). The two on-site ponds are depicted in the north-central portion of the site and the third pond is depicted in the area of SR 60/ Hiwassee Highway. The NWI map did not identify any other wetlands or surface waters on the site.

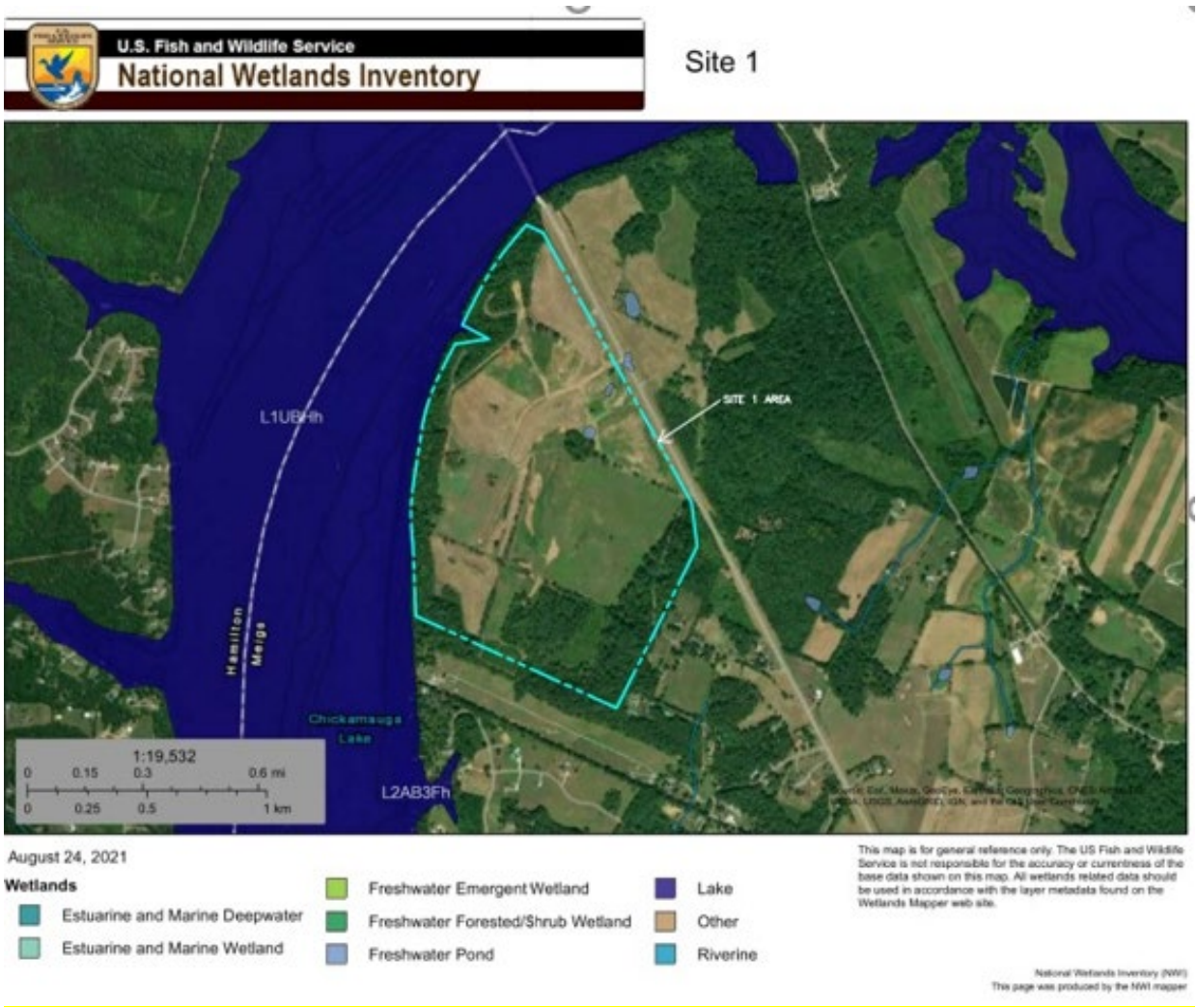

Figure 3-5 USFWS National Wetlands Inventory Map of Site 1

TTL completed a wetland survey of Site 1 on behalf of VA in June of 2021. No ponds or wetlands were identified in the areas of the two on-site ponds depicted on the NWI map. No wetland hydrology, hydric vegetation or hydric soils were observed in these areas.

The wetland survey identified three small wetlands, totaling less than one acre, in the northern portion of the site. The descriptions of the three wetland areas (SP 1 through SP 3) are as follows:

- SP 1 is a small depressional area located near the northwest corner of the site and is approximately 500 square feet in size.
- SP 2 is within a blocked, northwestward-sloping ravine and is approximately 27,500 square feet in size.
- SP 3 is an approximately 9,500 square feet pond and is located along the northern boundary of the site near the access road from SR60/ Hiwassee Highway.

The delineated wetlands are shown on Figure 3-6. Due to their possible connection to the WOTUS, the three delineated wetlands may fall under jurisdiction of the USACE (Section 404) and TDEC DWR

(Section 401). Isolated wetlands would fall under the jurisdiction of the TDEC DWR (Aquatic Resource Alteration Permit). No other surface waters or wetlands were identified at Site 1.

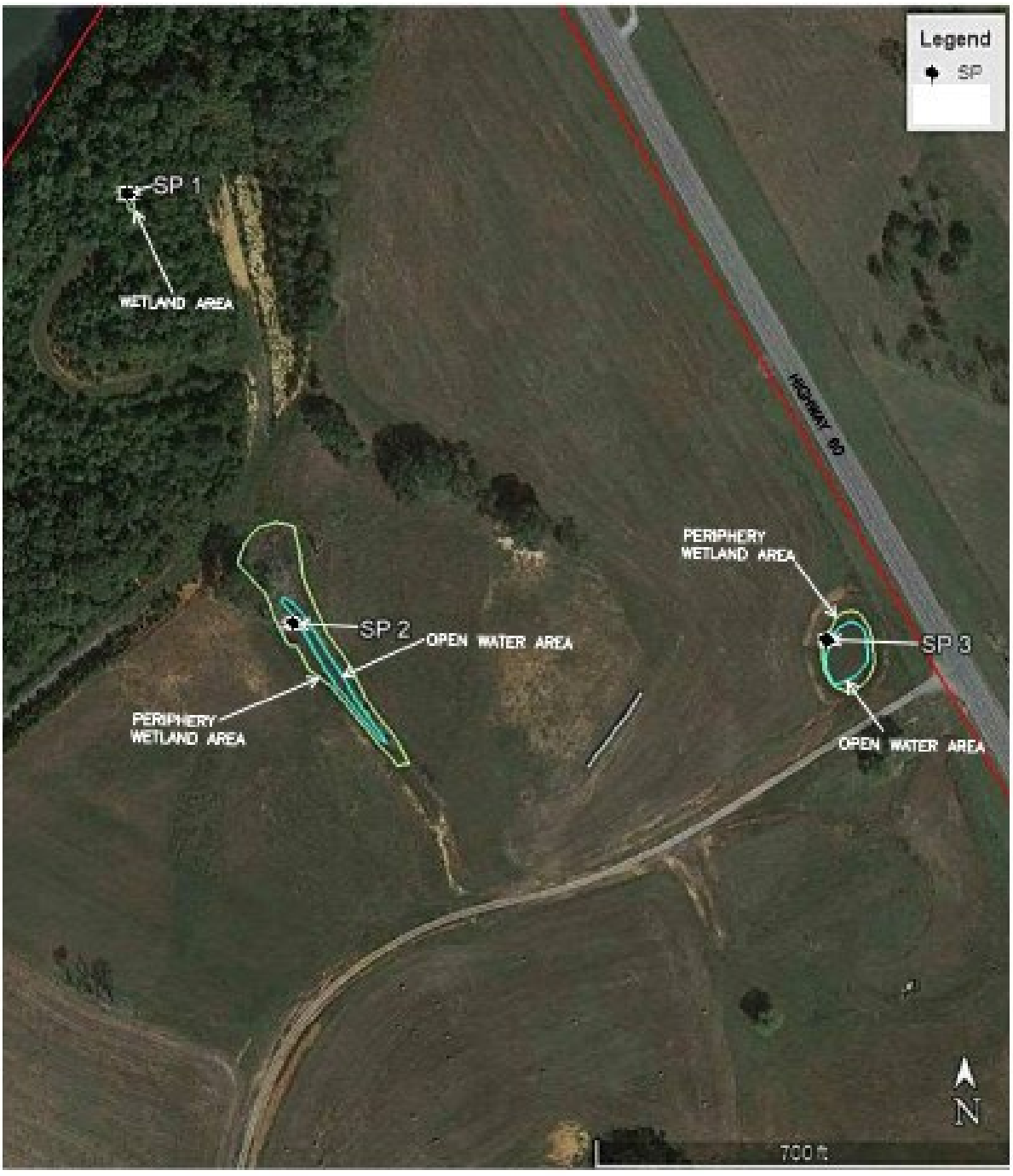

Figure 3-6 Delineated Wetlands in North-Central Portion of Site 1

Site 2

The USFWS NWI Map for Site 2 identified two riverine systems at the site: McWilliams Creek located along the eastern site boundary and the unnamed, intermittent tributary to Mc Williams Creek located in the western portion of the site (Figure 3-7). The NWI map did not identify any other wetlands or surface waters on the site.

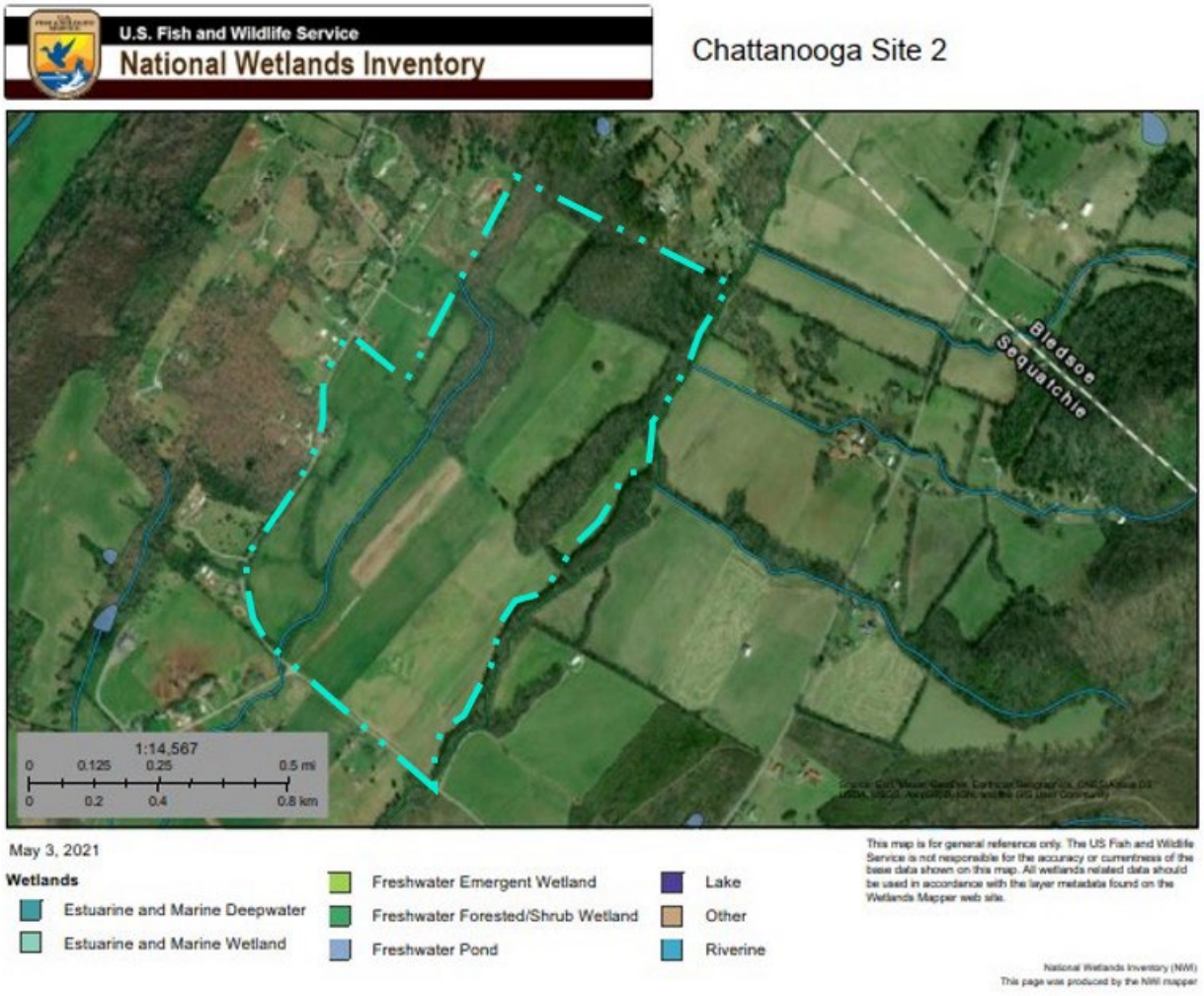

Figure 3-7 USFWS National Wetlands Inventory Map of Site 2

Terracon completed a Preliminary Water Resources Assessment (wetland survey) for Site 2 in 2021. The wetland survey identified a perennial stream - McWilliams Creek (HD 7), two intermittent streams that are tributaries to McWilliams Creek (HD 1 and HD 6), three wet weather conveyances (HD 4, HD 5 and HD 8), and a small (0.11-acre) isolated wetland at Site 2 (Figure 3-8).

McWilliams Creek, which flows along the eastern site boundary, is a third order perennial stream that flows southwest approximately one mile to the Sequatchie River, which in turn flows to the Tennessee River. HD 1 is the intermittent tributary to McWilliams Creek located in the western portion of the site. HD 6 is a short intermittent tributary to McWilliams Creek located in the northeastern portion of the site. McWilliams

Creek and the two intermittent streams that are tributaries to McWilliams Creek connect to WOTUS and are considered under the jurisdiction of the USACE (Section 404) and TDEC DWR (Section 401). Based on a preliminary jurisdictional determination (PJD) completed by USACE on November 17, 2021, the wet weather conveyances, which are normally dry tributaries to the intermittent tributaries, may also be considered WOTUS and under the jurisdiction of USACE.

The small, isolated wetland in the southern portion of the site is under the jurisdiction of the TDEC DWR (Aquatic Resource Alteration Permit).

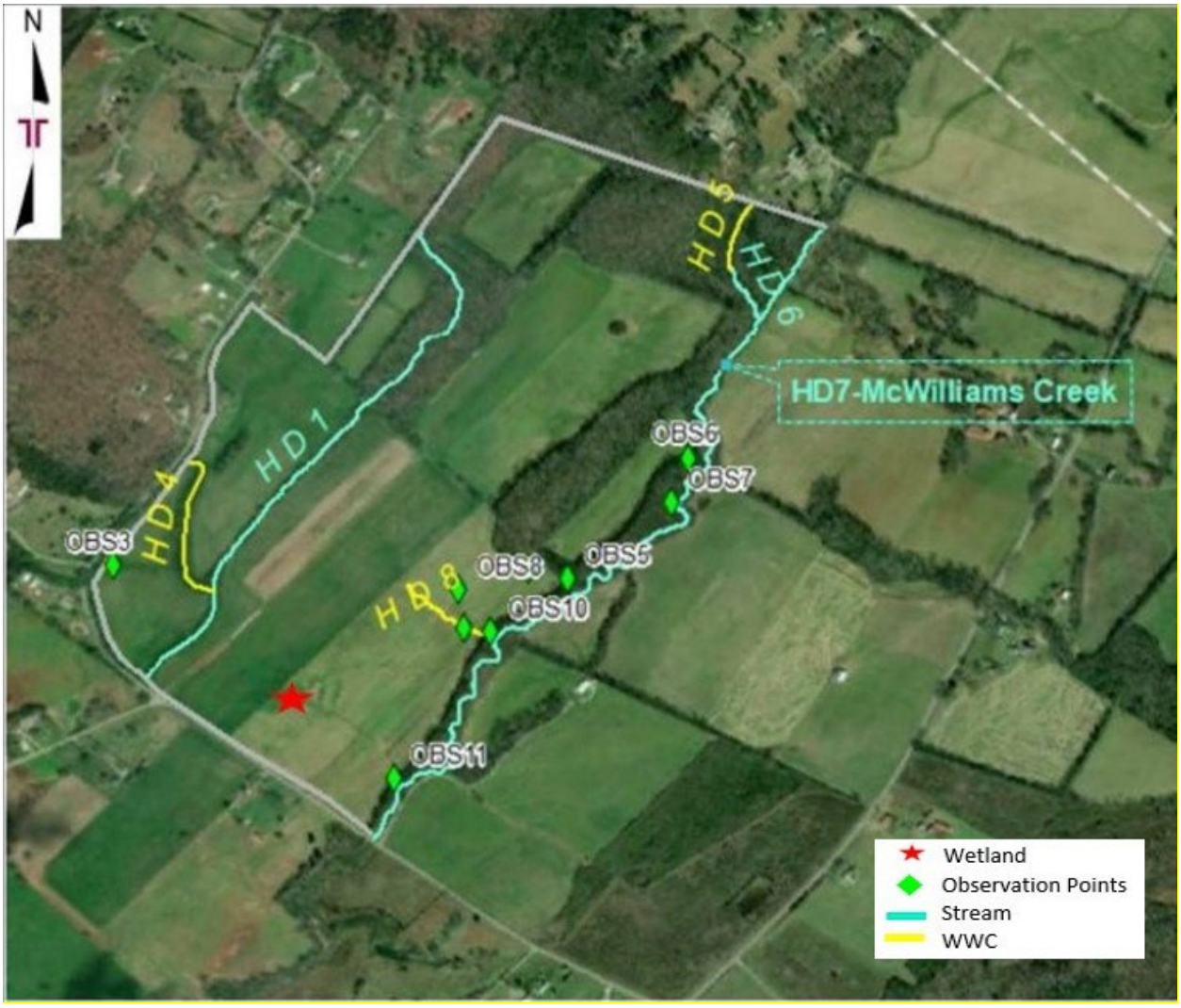

Figure 3-8 Water Resource Map for Site 2

3.11.2 Floodplains

Site 1

According to available Federal Emergency Management Agency (FEMA) floodplain mapping (Flood Insurance Rate Map No.47121C0200F, dated September 17, 2010), the western boundary of the site that borders Chickamauga Lake is located within the 100-year floodplain. TVA manages Chickamauga Lake/Tennessee River, owns the shoreline property to 685.44 feet above msl, maintains permanent flood

rights to 690 feet above msl, and restricts the building of habitable structures below 691 feet above msl, as the shoreline area can temporarily flood to 697 feet above msl in association with TVA's management of the Chickamauga Lake dam/reservoir. Any disturbance below 697 feet above msl requires a permit from TVA. The western shoreline portion of Site 1 slopes steeply to Chickamauga Lake such that only a small portion of the site is below 697 feet above msl.

Site 2

The FEMA floodplain mapping (Flood Insurance Rate Map Number 47153C0115C, dated June 4, 2010) indicated that Site 2 is not located within the 100-year or 500-year floodplains. The area south of the site, across Kelly Cross Road, is located within the 100-year floodplain (Zone A). This floodplain is associated with a downstream segment of McWilliams Creek. No other areas near the site are located within a designated floodplain.

3.11.3 Coastal Zone

The Coastal Zone Management Act (CZMA) was promulgated to control nonpoint pollution sources that affect coastal water quality. The CZMA encourages states to preserve, protect, develop, and where possible, restore or enhance valuable natural coastal resources such as wetlands, floodplains, estuaries, beaches, dunes, barrier islands, and coral reefs, as well as the fish and wildlife using those habitats. The CZMA requires that federal actions within and outside the coastal zone that could have reasonably foreseeable impacts on land, water, and natural resources of the coastal zone be consistent with the state's federally approved Coastal Management Program (CMP). The State of Tennessee does not have a designated coastal management zone or CMP.

3.11.4 Effects of the Proposed Action

The Proposed Action could result in short-term and long-term adverse impacts to regulated wetlands, as wetlands and/or regulated streams are located at both sites. However, the cemetery design would avoid the identified wetlands and streams to the extent possible. VA anticipates the cemetery design would maintain a buffer of undisturbed land around the wetlands and streams. If the cemetery design requires construction in wetland and stream areas, localized wetland/stream impacts would occur. VA would obtain all necessary permits and approvals from the USACE and TDEC DWR, including the implementation of wetland mitigation measures, if required. Wetland impacts would be less then significant.

No impacts to floodplains are anticipated. Although the western portion of Site 1 is located with the 100-year floodplain associated with Chickamauga Lake, the area of the site within the floodplain is very small. The cemetery would not be developed below the 697 feet above msl elevation at which the shoreline can occasionally flood. VA would coordinate with TVA for any proposed development near the shoreline. Site 2 is not located within a floodplain. VA would manage stormwater at the cemetery so as not to affect the hydrology of off-site properties; consequently, the floodplain located south of Site 2 would not be affected by the cemetery.

No coastal zone impacts would occur.

3.11.5 Effects of the No Action Alternative

The No Action Alternative would result in no wetlands, floodplains, or coastal zone impacts.

3.12 Socioeconomics

The following subsections identify and describe the socioeconomic environment of Meigs County, Sequatchie County, and the State of Tennessee. Presented data provide an understanding of the socioeconomic factors that have developed both site areas. Socioeconomic areas of discussion include the

local demographics of the area, regional and local economy, local housing, and local recreation activities. Data used in preparing this section were collected from the statistics provided by QuickFacts from 2010-2019 (U.S. Census Bureau 2021).

3.12.1 Demographics

The estimated populations in Meigs County and Sequatchie County in 2019 were 12,422 and 15,026 residents, respectively. The estimated population total for the State of Tennessee in 2019 was 6,829,174 residents (Table 3-4). High school graduation rates are generally similar for both counties but are slightly lower than the State of Tennessee. The percent of the population over the age of 65 within the counties is similar, and slightly higher than the state as a whole. Minority population rates are much lower in both counties as compared to the State of Tennessee. Minority population rates specific to each site area are discussed in Section 3.17 (Environmental Justice).

Table 3-4 Demographic Data for Meigs County, Sequatchie County, and State of Tennessee

Area	All Individuals (2019 Estimate)	Population Under 18 Age Years (2019 Estimate)	Population Over 65 Age Years (2019 Estimate)	Minority (2019 Estimate)	High School Graduates (2019 Estimate)	Veterans (2019 Estimate)
Tennessee	6,829,174	22.1%	16.7%	27.4%	87.5%	431,274
Meigs County	12,422	20%	21.7%	6.7%	83.8%	759
Sequatchie County	15,026	20.6%	20.8%	7.4%	81.6%	1,262
Source: US Census Bureau, QuickFacts v2019 (U.S Census Bureau 2021).						

3.12.2 Income

Both counties have slightly lower median household incomes and slightly higher populations below the poverty line than the State of Tennessee as a whole (Table 3-5). Household incomes specific to each site area are discussed in Section 3.17.

Table 3-5 Regional Income for Meigs County, Sequatchie County, and the State of Tennessee

Area	Number of Households	Median Household Income	Population Below Poverty Level	Unemployment Rate
Tennessee	2,597,292	$ 53,320	13.9%	4.9% (July 2021)
Meigs County	4,938	$ 49,167	16.1%	5.2% (July 2021)
Sequatchie County	5,528	$ 49,370	17.4%	4.9% (July 2021)
Source: US Census Bureau, QuickFacts, v2019 (U.S. Census Bureau 2021). U.S. Bureau of Labor Statistics, Unemployment Rate in Counties and State (U.S. Bureau of Labor Statistics 2021)				

3.12.3 Commuting Patterns

Residents of both counties are largely dependent on personal automobiles for transportation to and from work. Public transportation is available in both counties from the Southeast Tennessee Human Resource Agency Transportation but must be scheduled in advance. Based on data from 2015 to 2019, average

commuting times in Sequatchie County and Meigs County are approximately 34 minutes and 31 minutes, respectively (U.S. Census Bureau 2021).

3.12.4 Protection of Children

Because children may suffer disproportionately from environmental health risks and safety risks, EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, was introduced in 1997 to prioritize the identification and assessment of environmental health risks and safety risks that may affect children and to ensure that federal agencies' policies, programs, activities, and standards address environmental risks and safety risks to children. This section identifies the distribution of children and locations where numbers of children may be proportionately high (for example, schools, childcare centers, and family housing) in areas potentially affected by the Proposed Action.

Other than at the residence in the western portion of Site 2, children are not regularly present at either site, which consist of mostly unimproved land with no recreation areas. Children may be present at the residences located near the sites. However, no schools, childcare centers, or developed recreational areas are located within 0.50-mile of either site.

3.12.5 Effects of the Proposed Action

The proposed cemetery development is anticipated to result in minor short-term, beneficial socioeconomic impacts to local employment and personal income by providing temporary construction jobs. However, due to the short-term, finite nature of this construction project, no long-term impacts to the construction labor force are anticipated. The Proposed Action would indirectly benefit the local economy near the selected site through the spending of business and personal income generated from the construction and operation of the proposed facility, although these impacts would be minor. The Proposed Action would result in long-term significant beneficial socioeconomic impacts by providing a new, proximate National Cemetery of sufficient size to serve regional Veterans and their families for at least 100 years after Chattanooga National Cemetery reaches its burial capacity.

No adverse health or safety risks to children are anticipated to result from construction or operation of the cemetery at either site. Children would only be present at the new National Cemetery as visitors. Construction areas would be secured to prevent unauthorized access by children from nearby areas. The construction contractor would limit, and control construction dust and noise as discussed in Section 4, thereby minimizing adverse effects to children in the area.

3.12.6 Effects of the No Action Alternative

Under the No Action Alternative, both sites would likely continue to be mostly unimproved agricultural land, with no socioeconomic change to either site area. No short-term socioeconomic benefit to either site area would occur under the No Action Alternative.

Most importantly, the No Action Alternative would not enable VA to provide adequate regional burial sites commensurate with the long-term need for these services once Chattanooga National Cemetery reaches its capacity, resulting in a significant adverse, long-term, impact to Veterans and their families. U.S. Veterans and their families residing in the Chattanooga area would have to travel much longer distances to the nearest National or State Veterans Cemetery for interment and subsequent visits, at increased cost and time. In addition, interment in a distant cemetery would reduce the ability for subsequent visits by Veteran families.

3.13 Community Services

Site 1

Site 1 is located within Meigs County School District. The closest district school, Meigs South Elementary School, is located approximately eight miles northeast of the site. The closest school to the site is part of the Rhea County School District and is located in Graysville, over five miles northwest of the site. There are no other public schools located within five miles of the site.

There are no developed recreational facilities in the immediate vicinity of the site. The Birchwood Community Center is located approximately three miles south of the site.

Meigs County Sheriff Department provides law enforcement services to the site and its vicinity. The Meigs County Fire and Rescue and Fire Department provide fire protection and emergency medical services to the site and its vicinity.

The Meigs County Highway Department and Tennessee Department of Transportation (TDOT) provide local road and bridge maintenance services in the site vicinity.

Birchwood Health Center, located approximately three miles southeast of the site, provides limited medical services to the community. The closest hospital, Rhea Medical Center, is located in Dayton, approximately nine miles north of the site.

Public transportation is provided to Meigs County residents by the Southeast Tennessee Human Resource Agency; however, transportation must be scheduled in advance. No regular public transportation service is available in the site area.

Site 2

The Site 2 area is served by the Sequatchie County School System. Sequatchie County Schools are all located in Dunlap, approximately five miles southwest of the site. There are no other public schools located within five miles of the site.

There are no developed recreational facilities in the immediate vicinity of the site. Several community centers are located within six miles of the site to the north, south, and west.

The Site 2 area is served by the Sequatchie County Sherriff's Office and Dunlap Police Department. Volunteer fire departments and Sequatchie County Rescue Squad provide fire protection and emergency response services to the area.

A full-service emergency facility, Erlanger Sequatchie Valley (Department of Erlanger Bledsoe Hospital), is located in Dunlap, approximately three miles southwest of Site 2.

The Sequatchie County Highway Department and TDOT are responsible for local roadway and bridge maintenance services in the site vicinity.

Public transportation is provided to Sequatchie County residents by the Southeast Tennessee Human Resource Agency; however, transportation but must be scheduled in advance. No regular public transportation service is available in the site area.

3.13.1 Effects of the Proposed Action

The development of the cemetery on either site would have minimal community service impacts. No significant additional load is expected to be placed on the fire or police departments as the result of the Proposed Action. Use of other public or community services as a result of the proposed cemetery would be minor. The Proposed Action is expected to have a negligible impact on local public services.

3.13.2 Effects of the No Action Alternative

Under the No Action Alternative, no development or changes to the sites by VA would occur. The sites would likely remain mostly unimproved, agricultural land for the foreseeable future with no community services impacts.

3.14 Solid Waste and Hazardous Materials

Hazardous and toxic materials or substances are generally defined as materials or substances that pose a risk (through either physical or chemical reactions) to human health or the environment.

Site 1

TTL completed a Phase I Environmental Site Assessment (Phase I ESA) for Site 1 in July of 2021 (TTL 2021b). The Phase I ESA included a site visit, interviews with persons knowledgeable about the site, a review of historic information, and review of local, state, and federal regulatory information for the site and the surrounding area. Site 1 has been predominantly agricultural land with some wooded areas since at least 1935. A road (now vacated) has been present in the southeastern portion of the site since at least 1935. One to three structures (two residences and one barn) were located on the site along the road from at least 1935 to at least 1958. In the late 2000s, an unimproved access road was constructed onto the central portion of the site and some tree clearing was conducted in preparation for a residential development; however, the development was never completed. The Phase I ESA identified no significant hazardous substance or petroleum handling, storage or releases at the site. In addition, the Phase I ESA did not identify any evidence of petroleum or hazardous materials releases in the vicinity of the site that were considered likely to impact the site. The Phase I ESA did not identify any recognized environmental conditions (RECs) associated with the Site 1.

Site 2

TTL completed a Phase I ESA for Site 2 in July of 2021 (TTL 2021c). The Phase I ESA included a site visit, interviews with persons knowledgeable about the site, a review of historic information, and review of local, state, and federal regulatory information for the site and the surrounding area. Site 2 has been predominantly unimproved agricultural land with some wooded areas since at least 1888. In 1935, an unimproved road and a residential-sized structure were located in the northern portion of the site, which were no longer present in 1947. Since the late 1970s/early 1980s, a residence and two sheds have been present in the western portion of the site. The Phase I ESA identified no significant hazardous substance or petroleum handling, storage or releases at the site. In addition, the Phase I ESA did not identify any evidence of petroleum or hazardous materials releases in the vicinity of the site that were considered likely to impact the site. The Phase I ESA did not identify any RECs associated with the Site 2.

3.14.1 Effects of the Proposed Action

The Proposed Action could result in short-term impacts due to the increased presence and use of petroleum products and hazardous materials during construction of the cemetery at the selected site. In addition, an increase in construction vehicle traffic would increase the possibility of a release of vehicle operating fluids (such as oil, diesel, gasoline, and antifreeze) and maintenance materials. As such, a minor, short-term adverse impact is possible. Implementation of standard construction BMPs (Section 4) would serve to ensure this impact is further minimized.

Site 2 contains a one-story house with an attached garage that was constructed in the late 1970s/early 1980s and two small sheds. It is anticipated that these buildings, which may contain asbestos-containing building materials (ACM), would be demolished for the cemetery development if Site 2 is selected. An asbestos survey of the buildings would be conducted by a Tennessee-licensed inspector prior to building demolition.

Identified ACMs would be removed and properly disposed of by licensed asbestos abatement contractors in accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP) and State of Tennessee requirements prior to demolition. Asbestos abatement procedures require the removal of ACM with various controls and monitoring to prevent asbestos emissions and worker exposure.

Cemetery operations would include the storage and use of petroleum products and hazardous materials (such as diesel, oil, and gasoline) for the cemetery excavators and landscape maintenance equipment. It is anticipated that one or more petroleum aboveground storage tanks (ASTs) would be installed within the cemetery maintenance area. In addition, following cemetery development, approved lawn fertilizers and lawn maintenance chemicals would be used in areas with turf grass per NCA policies and manufacturer application recommendations. No significant adverse long-term impacts during operation of the cemetery are anticipated; long-term operational solid wastes and hazardous materials would be managed in accordance with applicable federal and state laws and NCA procedures.

The development and operation of the cemetery would not result in a substantial increase in the generation of solid or hazardous substances or wastes, increase the exposure of persons to hazardous or toxic substances, increase the presence of hazardous or toxic materials in the environment, or place substantial restrictions on property use due to hazardous waste, materials, or site remediation. As noted in Section 3.7.3, based on standard modern burial practices and VA's cemetery design guidance, it is unlikely that embalming fluid would be released into the soil or groundwater.

3.14.2 Effects of the No Action Alternative

Under the No Action Alternative, no development or changes to the sites by VA would occur. The sites would likely remain mostly unimproved, agricultural land for the foreseeable future with less-than-significant solid waste and hazardous materials impacts.

3.15 Transportation and Parking

Traffic in the vicinity of the sites is regulated by Meigs County (Site 1), Sequatchie County (Site 2) and TDOT. No public transportation is provided to the vicinity of either site.

Site 1

Access to Site 1 is provided by State Route 60 (SR 60)/Hiwassee Highway, a north-south road located along the northeastern site boundary. SR 60/Hiwassee Highway is designated as a principal arterial and is a two-lane undivided roadway with wide paved shoulders in the vicinity of the site. The road has a posted speed limit of 55 miles per hour in the vicinity of the site. Traffic counts conducted on December 7, 2021 found that SR 60/Hiwassee Highway carried 5,036 vehicles over a 24-hour period.

The existing site entrance from SR 60/Hiwassee Highway is an unimproved access drive. It is anticipated that the main entrance to the cemetery would be located in the approximate location of the current access drive. VA would likely develop a secondary site entrance from SR 60/Hiwassee Highway for maintenance vehicles. Secondary site access drive usage is anticipated to be minimal. The location of the cemetery entrances would be identified during the cemetery design.

On behalf of VA, Wells and Associates completed a Traffic Impact Analysis (TIA) for Site 1 in February 2022 to evaluate the existing (2021) traffic conditions in the vicinity of the site and the future potential traffic conditions without and with the proposed cemetery in 2027. The TIA evaluated the following intersections:

- SR60/Hiwassee Highway/Burton Lane (1)
- SR60/Hiwassee Highway/Burton Road (2)

- SR 60/Hiwassee Highway/Future Cemetery Driveway (3)

Note: Number in parentheses denotes the intersection number on Figure 3-9 and Table 3-6.

Figure 3-9 illustrates the intersections listed above and their relation to Site 1. Inset maps depict the future AM and PM peak traffic volumes with the proposed cemetery at the intersections evaluated by the TIA.

2021 Baseline Conditions

The 2021 baseline conditions were developed using existing traffic count data and current road and intersection conditions. Traffic counts were collected on December 8, 2021, from 7 AM to 9 AM (AM peak) and from 4 PM to 6 PM (PM peak). The baseline condition analysis indicated that all of the study intersections currently operate at an overall acceptable level of service[1] (LOS) of A and B during the AM and PM peak hours (Table 3-6).

2027 Background Conditions without the Proposed Cemetery

The 2027 background conditions were developed using the 2021 baseline traffic with a background regional growth rate of one percent per year compounded per TDOT. The 2027 background conditions (without the proposed cemetery) analysis found that all of the study intersections would continue to operate at an acceptable LOS of A and B during the AM and PM peak hours (Table 3-6).

2027 Conditions with the Proposed Cemetery

The TIA evaluated the conditions on local roads in 2027 based on the 2027 background conditions plus the traffic generated by the proposed cemetery. The number of vehicle trips that would be generated by the proposed cemetery was estimated based on rates derived from traffic counts at the existing 120-acre Chattanooga National Cemetery on December 6, 2021, scaled up for six burials per day (typical current daily maximum), further scaled up to the full 270-acre Site 1. While VA does not expect the burial rate to increase with the proposed replacement cemetery or the cemetery property to be fully developed for several decades, this approach conservatively accounts for potential increased visitors associated with a larger cemetery.

The replacement cemetery was conservatively estimated to generate 61 new AM peak hour trips (27 in and 34 out), 57 new PM peak hour trips (23 in and 34 out), and 797 average daily weekday trips. The analysis found that all study intersections would continue to operate at an acceptable LOS of A and B with the proposed cemetery in 2027. The results of the analysis are provided in Table 3-6.

[1] **Level of Service** – LOS represents a set of qualitative descriptions of a transportation system's performance. The Federal Highway Administration Highway Capacity Manual defines levels of service for intersections and highway segments, with ratings that range from A (best) to F (worst). Generally, a LOS of D or higher is considered acceptable by transportation planning agencies.

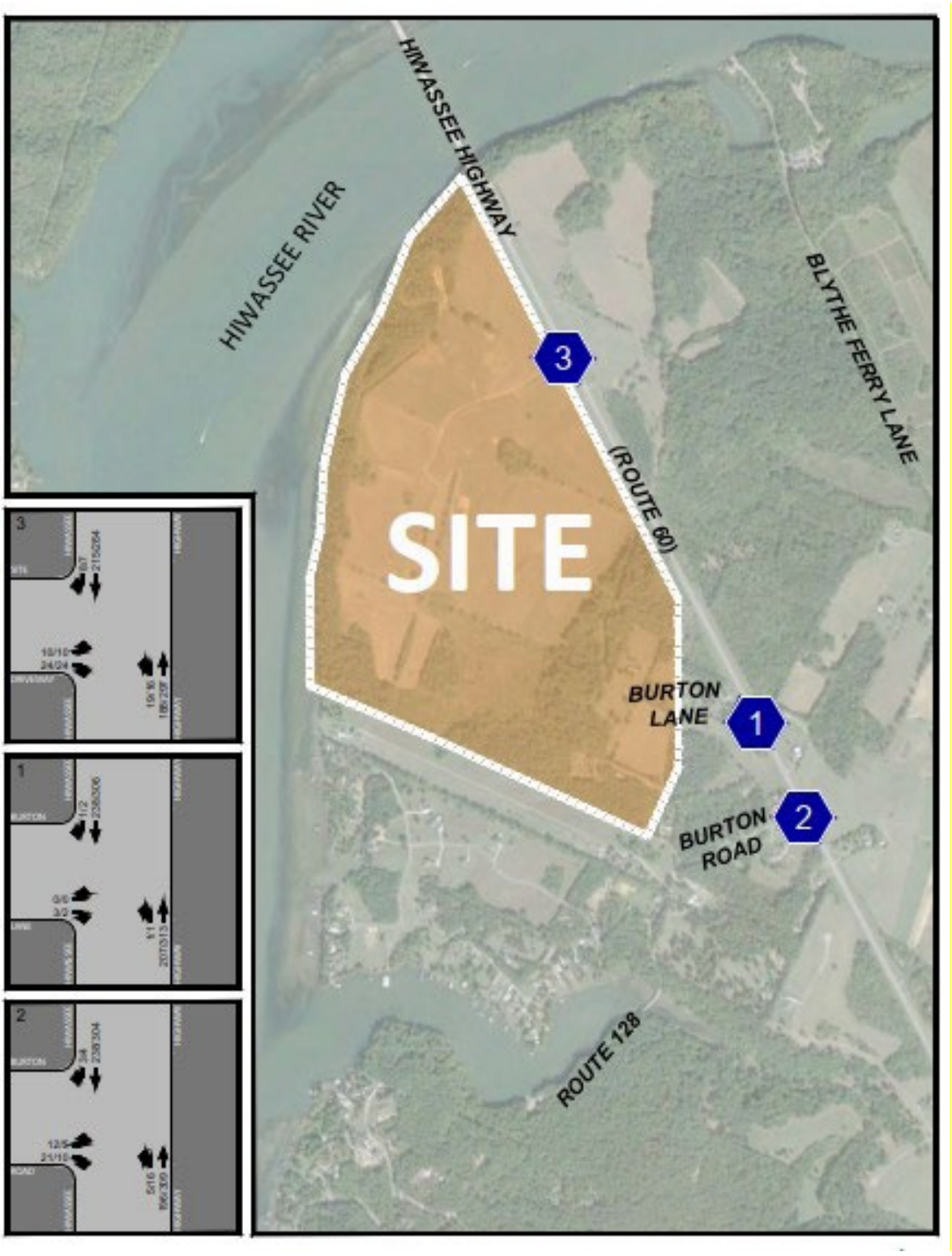

Figure 3-9 Site 1 Traffic Study Intersections

Table 3-6 Site 1 Existing and 2027 Traffic Conditions with Proposed Cemetery

Approach/ Lane Group	2021 Existing Traffic Conditions				2027 Future Traffic Conditions without Project				2027 Future Traffic Conditions with Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
1. Burton Lane/Hiwassee Highway - Unsignalized												
EBLR	A	9.3	A	9.7	A	9.4	A	9.8	A	9.5	A	9.9
NBLT	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
SBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
2.Burton Road/Hiwasseee Highway - Unsignalized												
EBLR	B	10.1	B	10.9	B	10.2	B	11.0	B	10.4	B	11.3
NBLT	A	0.2	A	0.4	A	0.2	A	0.4	A	0.2	A	0.4
SBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
3. Proposed Site Driveway/Hiwasseee Highway - Unsignalized												
EBLR	FUTURE INTERSECTION								B	10.2	B	11.1
NBLT									A	0.7	A	0.4
SBTR									A	0.0	A	0.0
Proposed Site Driveway/Hiwasseee Highway - Unsignalized with Separate Right & Left Turn Lanes												
EBLR	FUTURE INTERSECTION								B	10.2	B	11.1
NBL									A	7.7	A	7.9
NBT									A	0.0	A	0.0
SBT									A	0.0	A	0.0
SBR									A	0.0	A	0.0

Notes:
1. Capacity analysis based on Highway Capacity Manual 6th methodology, using Synchro 10.

The TIA concluded that the study intersections would satisfy the TDOT standards for LOS in 2027 with the proposed cemetery and; therefore, no signalization or other road improvements would be required at the intersections. The TIA evaluated the need for left and right turn lanes at the proposed cemetery entrance at SR60/Hiwassee Highway and found that separate turn lanes were not warranted. However, separate left and right turn lanes were recommended to minimize potential traffic congestion during national holidays and other special events, to reduce potential safety concerns, and to minimize disruption to traffic flow.

Site 2

Site 2 is bordered to the south by Kelly Cross Road and to the west by Bostontown Road. Access to Site 2 is currently provided by an unimproved farm drive located at the intersection of the Kelly Cross Road and Brownstown Road and the residential driveway on Brownstown Road. Kelly Cross Road is a two-lane, paved, narrow minor collector road that serves a limited number of residential uses and farmland in the area. Bostontown Road is a two-lane, paved, local road that serves residences and farms west of the site. Bostontown Road is approximately one mile long and has no outlet. Traffic count data obtained from TDOT indicate Kelly Cross Road had an average daily traffic (ADT) volume of 510 vehicles in 2021.

It is anticipated that the main entrance to the cemetery would be located along Kelly Cross Road just east of the Bostontown Road intersection. VA would likely develop a secondary site entrance for maintenance vehicles. Secondary site access drive usage is anticipated to be minimal. The location of the cemetery entrances would be identified during the cemetery design.

Primary access to the proposed cemetery would be from SR 111, a generally northwest-southeast oriented, four-lane, divided principal arterial highway with an ADT of 12,546 vehicles. SR 111 offers exit and on ramps to East Valley Road and serves as the main route to the site from Chattanooga. Cemetery visitors would proceed to the East Valley Road exit, turn north on East Valley Road, and turn left (west) on Kelly Cross Road. East Valley Road is a two-lane minor collector road with an ADT of 745 vehicles.

Site 2 can also be accessed from US Route 127/SR 28 (Rankin Avenue), which is located approximately 1.5 miles west of the site. US Route 127/SR 28 intersects with SR 111 in Dunlap, approximately three miles south of the site. US 127/ SR 28 is a north/south, two-lane, undivided principal arterial road that extends from the southern Tennessee border to the northern border. Access from US 127/ SR 28 to the site occurs

from an intersection at Ewtonville Ridge Road. Ewtonville Ridge Road extends towards the east from US 127/ SR 28 as a two-lane, narrow minor collector road and terminates at Kelly Cross Road.

On behalf of the VA, Wells and Associates completed the TIA for Site 2 in February 2022 to evaluate the existing (2021) traffic conditions in the vicinity of the site and the future potential traffic conditions without and with the proposed cemetery in 2027. The TIA evaluated the following intersections:

- Union Gap Road/US 127 (SR 28/Rawkin Avenue)/Ewtonville Ridge Road (1)
- Kelly Cross Road/Ewtonville Ridge Road (2)
- Kelly Cross Road/Knotty Pine Road (3)
- Kelly Cross Road/Old Mill Road/Cookie Jar Driveway (4)
- Kelly Cross Road/Bostontown Road (5)
- Kelly Cross Road/East Valley Road (6)
- SR 111 westbound ramps/East Valley Road (7)
- SR 111 eastbound ramps/East Valley Road (8)
- Kelly Cross Road/Future Cemetery Driveway (9)

Note: Number in parentheses denotes the intersection number on Figure 3-10 and Table 3-7.

Figure 3-10 illustrates the intersections listed above and their relation to Site 2. Inset maps depict the future AM and PM peak traffic volumes with the proposed cemetery at the intersections evaluated by the TIA.

2021 Baseline Conditions

The 2021 baseline conditions were developed using existing traffic count data and current road and intersection conditions. Traffic counts were collected on December 8, 2021, from 7 AM to 9 AM (AM peak) and from 4 PM to 6 PM (PM peak). The baseline condition analysis indicated that all of the study intersections currently operate at an overall acceptable LOS of A and B during the AM and PM peak hours (Table 3-7).

2027 Background Conditions without the Proposed Cemetery

The 2027 background conditions were developed using the 2021 baseline traffic with a background regional growth rate of one percent per year compounded per TDOT. The 2027 background conditions (without the proposed cemetery) analysis found that delays were expected to increase slightly as a result of traffic generated by regional growth in the area. However, all of the study intersections would continue to operate at overall at acceptable LOS of A and B during the AM and PM peak hours (Table 3-7).

2027 Conditions with the Proposed Cemetery

The TIA evaluated the conditions on local roads in 2027 based on the 2027 background conditions plus the traffic generated by the proposed cemetery. The number of vehicle trips that would be generated by the proposed cemetery was estimated using the same method as described for Site 1, but for a maximum 225-acre cemetery at Site 2. The replacement cemetery was conservatively estimated to generate 52 new AM peak hour trips (23 in and 29 out), 47 new PM peak hour trips (19 in and 29 out), and 664 average daily weekday trips.

The TIA found that delays would generally increase at the study intersections by less than one second and that all study intersections would continue to operate at an acceptable LOS of A and B with the proposed cemetery in 2027. The results of the analysis are provided in Table 3-7.

The TIA concluded that the study intersections would satisfy TDOT standards for LOS in 2027 with the proposed cemetery and; therefore, no signalization or other road improvements would be required at the intersections.

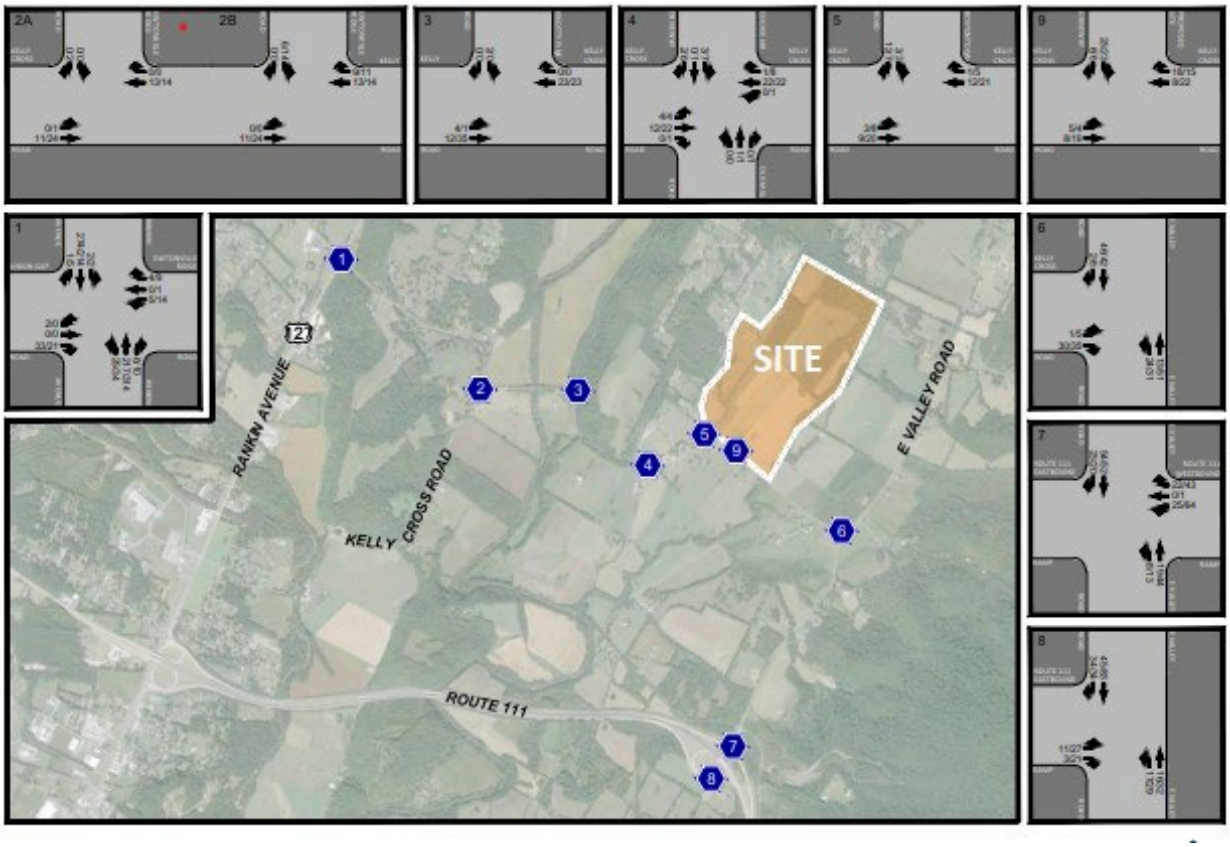

Figure 3-10 Site 2 Traffic Study Intersections

Table 3-7 Site 2 Existing and 2027 Traffic Conditions with Proposed Cemetery

Approach/ Lane Group	2021 Existing Traffic Conditions				2027 Future Traffic Conditions without Project				2027 Future Traffic Conditions with Project			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)	LOS	Delay (s)
1. Union Gap Road/Ewtonville Ridge Road/Rankin Avenue - Unsignalized												
EBLTR	B	10.0	A	9.4	B	10.2	A	9.5	B	10.2	A	9.5
WBLTR	B	11.3	B	12.7	B	11.6	B	13.2	B	11.7	B	13.2
NBL	A	7.8	A	7.7	A	7.9	A	7.7	A	7.9	A	7.7
NBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
SBL	A	0.0	A	0.0	A	0.0	A	0.0	A	7.7	A	7.9
SBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
2A. Kelly Cross Road/Ewtonville Ridge Road South - Unsignalized												
EBLT	A	0.0	A	0.3	A	0.0	A	0.3	A	0.0	A	0.3
WBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
SBLR	A	0.0	A	8.4	A	0.0	A	8.4	A	0.0	A	8.4
2B. Kelly Cross Road/Ewtonville Ridge Road East - Unsignalized												
EBLT	A	0.0	A	0.0	A	0.0	A	0.0	A	2.8	A	1.3
WBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
SBLR	A	8.6	A	8.7	A	8.7	A	8.8	A	8.8	A	8.9
3. Knotty Pine Road/Kelly Cross Road - Unsignalized												
EBLT	A	2.6	A	0.2	A	2.6	A	0.2	A	1.8	A	0.2
WBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
SBLR	A	8.7	A	0.0	A	8.7	A	0.0	A	8.8	A	0.0
4. Old Mill Road/Cookie Jar Driveway/Kelly Cross Road - Unsignalized												
EBLTR	A	2.6	A	1.3	A	2.6	A	1.3	A	1.8	A	1.1
WBLTR	A	0.0	A	0.3	A	0.0	A	0.3	A	0.0	A	0.2
NBLTR	A	9.2	A	8.9	A	9.2	A	8.9	A	9.3	A	8.9
SBLTR	A	8.6	A	8.7	A	8.6	A	8.7	A	8.7	A	8.8
5. Bostontown Road/Kelly Cross Road - Unsignalized												
EBLT	A	3.1	A	2.5	A	3.1	A	2.4	A	1.8	A	2.1
WBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
SBLR	A	8.5	A	8.5	A	8.5	A	8.6	A	8.5	A	8.6
6. E Valley Road/Kelly Cross Road - Unsignalized												
EBLR	A	8.5	A	8.7	A	8.6	A	8.8	A	8.7	A	8.8
NBLT	A	2.7	A	1.8	A	2.6	A	1.8	A	4.8	A	2.8
SBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
7. E Valley Road/Route 111 Westbound - Unsignalized												
WBLTR	A	8.9	A	9.1	A	8.9	A	9.1	A	8.9	A	9.2
NBLT	A	2.6	A	1.7	A	2.4	A	1.8	A	2.2	A	1.7
SBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
8. E Valley Road/Route 111 Eastbound - Unsignalized												
EBLR	A	9.0	A	9.4	A	9.0	A	9.5	A	9.1	A	9.6
NBLT	A	3.8	A	3.5	A	3.8	A	3.6	A	3.8	A	3.6
SBTR	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0
9. Proposed Site Driveway/Kelly Cross Road - Unsignalized												
EBLT	FUTURE INTERSECTION								A	2.8	A	1.3
WBTR									A	0.0	A	0.0
SBLR									A	8.8	A	8.9

Notes:
1. Capacity analysis based on Highway Capacity Manual 6th methodology, using Synchro 10.

3.15.1 Effects of the Proposed Action

The Proposed Action could have short-term and long-term, direct and indirect transportation impacts.

Construction traffic associated with the cemetery development, consisting of material transport trucks, workers' personal vehicles, and construction equipment, would temporarily increase traffic volumes in the local area, but would not likely cause long delays at either site. Thus, only minor, short-term adverse impacts would be anticipated.

During operation, public roadways in the vicinity of the selected site would experience additional traffic as a result of the cemetery. The cemetery would be open to the public every day throughout the year. VA anticipates approximately 15 to 25 funeral processions per week at the replacement cemetery, averaging approximately 10 to 20 cars per procession. The cemetery would initially experience a small number of

visitors. As the cemetery is developed and utilized, the number of visitors would increase. Based on the anticipated burial and visitation rates, VA estimates that the proposed cemetery, once fully established, would generate about 300 to 400 round trip vehicle trips (600 to 800 one-way vehicle trips) per day.

The TIAs found that the intersections around both sites currently operate at a good LOS (LOS A and B) during the AM and PM peak travel hours and would continue to operate at LOS A and B during AM and PM peak travel hours in 2027 with a fully developed cemetery. Estimated cemetery traffic would result in only minor increases in traffic during weekday peak hours. Therefore, no traffic mitigation measures would be required at either site. VA would coordinate with TDOT, the Meigs County Highway Department, and/or the Sequatchie County Highway Department during the project design to identify cemetery entrance location(s) and any necessary roadway improvements, as applicable.

The proposed cemetery would have periodic, short-term traffic impacts associated with funeral processions during weekday, non-peak hours. Approximately 10 to 20 vehicles are included in the average procession. Traffic impacts associated with the processions would be intermittent and of short duration.

It is anticipated that the cemetery would have notably higher than normal visitation rates during national holidays (Memorial Day, Veterans Day, and Independence Day) and during special events. Traffic volumes during these days would be greater and could lead to localized traffic congestion. However, these traffic impacts would be infrequent (less than five times per year) and, consequentially, less than significant.

Less-than-significant, long-term direct impacts from cemetery operations are anticipated.

No parking impacts are anticipated at either site. The cemetery would be designed and constructed to accommodate all cemetery parking needs on-site.

3.15.2 Effects of the No Action Alternative

Under the No Action Alternative, no development by VA would occur at either site. The sites would likely remain mostly unimproved, agricultural land for the foreseeable future with no traffic or parking impacts.

3.16 Utilities

ERG prepared Utilities Identification and Capacity reports for both sites on behalf of VA in 2021. Utility providers to the sites were identified as follows:

Site 1

- Potable water service is provided by Savannah Valley Utility District, which operates a 12-inch water line within the Hiwassee Highway/SR 60 right-of-way (ROW).
- Electrical service is provided by Volunteer Energy Cooperative (VEC), who has a three-phase power line located within the Hiwassee Highway/SR 60 ROW.
- Telecommunication services are provided by AT&T, who maintains a fiber optic line within the Hiwassee Highway/SR 60 ROW.
- Sanitary sewer service is not currently provided to the site area. The closest sanitary sewer tie-in is located approximately six miles north of the site.
- Natural gas service is not currently present in the site area. The closest natural gas service line is located approximately 13.5 miles southeast of the site.

Site 2

- Potable water service is provided by the City of Dunlap, who has an eight-inch water line along Kelly Cross Road and Bostontown Road, adjacent to the site. The existing site residence uses an on-site water well for potable water.

- Sequatchie Valley Electric Cooperative supplies electrical service to the site vicinity, with overhead lines along Kelly Cross Road and Bostontown Road, adjacent to the site. The existing site residence is connected to the electrical service.

- Telecommunication services are provided by Bledsoe Telephone Cooperative, with service lines along Kelly Cross Road and Bostontown Road, adjacent to the site.

- Sanitary sewer service is not currently provided to the site area. The City of Dunlap supplies wastewater services to the city. The nearest location to tie into the system is approximately three miles southwest of the site. The existing site residence on site uses an on-site septic system.

- The City of Dunlap provides natural gas services to portions of Sequatchie County. Natural gas service is not currently provided to the site area. The nearest location to connect to the existing natural gas service is approximately two miles west of the site. The existing site residence uses a 250-gallon AST to store propane for heating.

3.16.1 Effects of the Proposed Action

The proposed cemetery would require electricity, potable water, sanitary, telecommunication, and possibly natural gas services for the Administration and Public Information Building and cemetery maintenance building(s). Electricity, potable water and telecommunication service lines are located adjacent to both of the sites. The use of these utilities for the cemetery buildings would be minor. VA would coordinate with the local utility providers during the cemetery design to determine the connection requirements.

Natural gas service is not available to either site area. During the cemetery design, VA will determine how the Administration and Public Information Building and cemetery maintenance building(s) would be heated. It is anticipated they would be heated via electricity or propane stored in an on-site AST.

The cemetery buildings would be serviced with on-site septic systems located near each building. VA would follow TDEC DWR design requirements for the systems. Additionally, VA would decommission the septic system and water well located at the existing residence at Site 2, if Site 2 is selected.

The primary utility need for the proposed cemetery would be irrigation water to maintain the landscaped areas of the cemetery. VA's practice is to minimize the use of irrigation water. Low-moisture tolerant species that are suited to Tennessee would be used to minimize irrigation needs, to the extent possible. In addition, VA may use water collected in cemetery stormwater management ponds for irrigation.

During the cemetery design, VA would contact the local water utility at the selected site to determine if the municipal water system has sufficient capacity to meet the irrigation needs of the cemetery without substantially reducing the water availability for other users. If municipal water service is not available for cemetery irrigation, VA would likely install an irrigation well, permitted through TDEC DWR.

Utility impacts would be less than significant.

3.16.2 Effects of the No Action Alternative

Under the No Action Alternative, no development by VA would occur at either site. The sites would likely remain mostly unimproved, agricultural land (with a residence on Site 2) for the foreseeable future with little or no public utility use.

3.17 Environmental Justice

In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was issued to focus attention of federal agencies on human health and environmental conditions in minority and low-income communities and to ensure that disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. The USEPA-developed EJSCREEN, an environmental justice mapping and screening internet application, was used to obtain information regarding minority and low-income populations in the site areas. Two-mile buffer boundaries were used because of the low population density at both sites.

Site 1

The results of the EJSCREEN indicated that the Site 1 vicinity includes a much lower minority population (4 percent) than the State of Tennessee as a whole (26 percent). The Site 1 area has a slightly higher low-income population (40 percent) than the State of Tennessee (36 percent).

Site 2

The results of the EJSCREEN identified that the Site 2 vicinity also includes a much lower minority population (3 percent) than the State of Tennessee (26 percent) as a whole. The Site 2 area also has a lower low-income population (29 percent) than the State of Tennessee (36 percent).

3.17.1 Effects of the Proposed Action

The Proposed Action would have negligible environmental justice effects. Site 1 area has a slightly higher than average low-income population; however, the Proposed Action would have only minor impacts on the residents in the area. During cemetery construction, effects on nearby residential land uses, such as from noise and dust, would be limited and controlled through BMPs described in Section 4.

During operations, cemetery noise and traffic may affect nearby residences, including low-income populations; however, the impacts would be minor.

3.17.2 Effects of the No Action Alternative

Under the No Action Alternative, no development by VA would occur at either site. The sites would likely remain mostly unimproved, agricultural land for the foreseeable future with no direct environmental justice effects. However, VA would not meet its long-term cemetery needs for the region. The absence of a National Cemetery in the Chattanooga area after the Chattanooga National Cemetery reaches its capacity would have a disproportionate effect on low-income Veterans and their families in the region, who are less able to afford travel to a more distant National Cemetery.

3.18 Cumulative Impacts

The CEQ Regulations define cumulative impacts as those which "result from the incremental impact of the Proposed Action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions," (40 CFR 1508.7). Cumulative impact analysis captures the effects that result from the Proposed Action in combination with the effects of other actions taken before, during, and after the Proposed Action in the same geographic area.

Site 1

Site 1 is situated in a rural area of Meigs County, approximately 29 miles northeast of downtown Chattanooga. The area surrounding the site consists of mostly undeveloped agricultural land and low-density residential properties. The areas located to the north and east, across SR 60/Hiwassee Highway, are agricultural fields and unimproved forested lands. Low-density residential properties are located to the southeast and to the south of the site. Chickamauga Lake forms the western boundary of the site.

Since the late 1990s/early 2000s, the area south and southeast of Site 1 has become developed with residences, several of which are located along a bay of Chickamauga Lake. No other notable development has occurred in the immediate site area in the past 25 years. Additional development could occur in the Site 1 area in the future, attracted by recreational and commercial opportunities associated with Chickamauga Lake, access to SR60/Hiwassee Highway, and the availability of large tracts of undeveloped land. However, development in the site area has been generally slow for the past 25 and is likely to remain relatively slow. No specific development plans for off-site properties in the immediate vicinity of Site 1 were identified.

Site 2

Site 2 is situated in a rural area of Sequatchie County, approximately 25 miles north of downtown Chattanooga. The area surrounding the site consists mostly of agricultural fields, wooded land and low-density residential properties. The area north of the site contains residences and wooded land. Agricultural fields are located east of the site. Kelly Cross Road forms the southern site border, across which are agricultural lands with a few residential properties. Approximately 200 feet southwest of the site is a small existing cemetery. Bostontown Road continues along the western boundary of the site and separates the site from a mix of agricultural fields, wooded land, and low-density residential properties.

The area surrounding Site 2 has been largely unchanged in the past 25 years, with no notable development. Considerable undeveloped land is available the site area; however, development is likely to continue at a slow pace, based on the rural character of the area. No specific development plans for off-site properties in the immediate vicinity of Site 2 were identified.

3.18.1 Effects of the Proposed Action

The Proposed Action would result in impacts to the sites identified in Sections 3.3 through 3.17. These include potential adverse impacts to aesthetics, air quality, geology and soils, hydrology and water quality, wildlife and habitat, noise, land use, wetlands, solid waste and hazardous materials, transportation, utilities, and environmental justice. All of these potential impacts are less than significant and would be further reduced through careful coordination and implementation of general BMPs; management, minimization and avoidance measures; and compliance with regulatory requirements, as identified in Section 4. Given the nature of the Proposed Action, the limited recent development, and the unlikely potential future large development in the areas surrounding the sites, no significant cumulative adverse effects to any of these resource areas are anticipated.

No significant adverse cumulative impacts to the environment, induced by the Proposed Action, are anticipated within the region. Coordination between VA, federal and state agencies, Meigs County, Sequatchie County, and community representatives would serve to manage and control cumulative effects within the region, including managing regional transportation increases with adequate infrastructure. Implementation of local land use and resource management plans would serve to control the extent of environmental impacts, and continued planning would ensure future socioeconomic conditions maintain the quality of life the area's residents currently enjoy. Implementation of effective resource management plans and programs should minimize or eliminate any potential cumulative degradation of the natural ecosystem, cultural or human environment within the region of influence of the Proposed Action.

3.18.2 Effects of the No Action Alternative

Under the No Action Alternative, no cumulative impacts are anticipated, as the sites would likely remain mostly unimproved, agricultural land.

3.19 Potential for Generating Substantial Public Controversy

As discussed in Sections 5 and 6, VA has solicited input from the pubic and various federal, state, and local government agencies regarding the Proposed Action. Several government agencies have provided input; none of the input has identified opposition or controversy related to the Proposed Action. No input was received from the public in response to the scoping notice. VA will publish and distribute the Draft EA for a 30-day public comment period. Public comments will be considered and addressed in the Final EA.

4.0 MANAGEMENT, MINIMIZATION, AND MITIGATION MEASURES

This section summarizes the management, minimization, and avoidance measures, and mitigation measures (if necessary), that are proposed to minimize and maintain potential adverse effects of the Proposed Action at acceptable, less-than-significant levels.

Per established protocols, procedures, and requirements, VA and its contractors would implement BMPs and would satisfy all applicable regulatory requirements in association with the design, construction, and operation of the proposed National Cemetery at the selected site. These "management measures" are described in this EA and are included as components of the Proposed Action. "Management measures" are defined as routine BMPs and/or regulatory compliance measures that are regularly implemented as part of proposed activities, as appropriate, across Tennessee. In general, implementation of such management measures would maintain impacts at acceptable levels for all resource areas analyzed. These are different from "mitigation measures," which are defined as project-specific requirements, not routinely implemented as part of development projects, necessary to reduce identified potentially significant adverse environmental impacts to less-than-significant levels.

The routine BMPs, and management, minimization, and avoidance measures summarized in Table 4-1 would be included by VA in the Proposed Action to minimize and maintain adverse effects at less-than-significant levels.

Table 4-1 Management, Minimization, and Avoidance Measures Incorporated into the Proposed Action

Technical Resource Area	Measure
Aesthetics	Develop the cemetery in concert with the site's natural topography. Maintain some natural areas.
	Use natural buffers and/or berms between the developed portions of the cemetery and adjacent residential properties.
Air Quality	Use appropriate dust suppression methods (such as the use of water, dust palliative, covers, suspension of earth moving in high wind conditions) during onsite construction activities.
	Stabilize disturbed areas through re-vegetation or mulching if the areas would be inactive for several weeks or longer. Specific requirements would be identified in the Stormwater Pollution Prevention Plan (SWPPP).
	Implement measures to reduce diesel particulate matter emissions from construction equipment, such as reducing idling time and using newer equipment with emissions controls.
	Comply with the applicable Tennessee Department of Environmental Conservation (TDEC), Air Pollution Control regulations, as applicable.

Technical Resource Area	Measure
Cultural and Historic Resources	Should potentially historic or culturally significant items be discovered during project construction, the construction contractor would immediately cease work until VA, a qualified archaeologist, Tennessee State Historic Preservation Office (SHPO), Tribes and other consulting parties are contacted to properly identify and appropriately treat discovered items in accordance with applicable state and federal laws.
	Maintain, mark, and fence a buffer around Old Browder Cemetery (Site 1) to prevent inadvertent disturbance during construction. Provide reasonable access to the old cemetery by family members of the deceased.
Geology, Topography, and Soils	Control soil erosion and sedimentation impacts during construction by implementing erosion prevention measures and complying with the TDEC General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Stormwater Associated with Construction Activities permitting process. Implement effective controls per a site-specific SWPPP. The NPDES permit would require stormwater runoff and erosion management using BMPs, such as earth berms, vegetative buffers and filter strips, and spill prevention and management techniques. The construction contractor would implement the sedimentation and erosion control measures specified in the NPDES permit and the SWPPP to protect surface water quality.
	Complete a Farmland Conversion Impact Rating Form (Form AD-1006) in conjunction with United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) for the selected site.
Hydrology and Water Quality	Control soil erosion and sedimentation impacts during construction by complying with the NPDES permit and the SWPPP.
	Maintain undeveloped buffer areas along Chickamauga Lake (Site 1) and McWilliams Creek and its tributaries (Site 2).
	Design improvements in accordance with the requirements of Energy Independence and Security Act Section 438 with respect to stormwater runoff quantity and characteristics.
	Ensure the cemetery design includes sufficient on-site stormwater management so as not to adversely affect the water quantity/quality in receiving waters and/or offsite areas.
	Use native, low-moisture tolerant species to the extent practicable to reduce the need for irrigation.

Technical Resource Area	Measure
Wildlife and Habitat	Conduct tree clearing/removal between November 1 and through March 31, outside the Indiana bat and northern-long eared bat roosting season. If tree clearing/removal activities cannot be conducted outside of bat roosting season, consult with the USFWS to develop and implement appropriate measures to minimize potential impacts to protected bat species.
	Maintain the natural wooded area along McWilliams Creek at the eastern boundary of Site 2 to prevent potential impacts to large-flowered skullcap, which has potential to occur in this area.
	Site 1 provides potential nesting habitat for bald eagles and herons. Prior to construction, a qualified biologist would survey the site. If active eagle or heron nests are identified, VA would coordinate with Tennessee Wildlife Resource Agency and USFWS to determine and implement appropriate conservation measures.
	Conduct vegetation clearing associated with the cemetery development outside of the migratory bird nesting season (mid-April through July 1st). If vegetation-clearing cannot be conducted outside of the nesting season, a qualified biologist would survey the site for active nests prior to clearing. Active nests would not be disturbed until the young birds have fledged.
	Use native species, to the extent practicable, when re-vegetating land disturbed by construction to avoid the potential introduction of non-native or invasive species.
Noise	Limit, to the extent possible, construction and associated heavy truck traffic to occur between 7:00 a.m. and 6:00 p.m. on Monday through Friday, or during normal, weekday, work hours.
	Locate stationary operating equipment as far away from sensitive receptors as possible.
	Shut down noise-generating heavy equipment when it is not needed.
	Maintain equipment per manufacturer's recommendations to minimize noise generation.
	Encourage construction personnel to operate equipment in the quietest manner practicable (such as speed restrictions, retarder brake restrictions, and engine speed restrictions).
Land Use	Comply, to the extent practicable, with the development standards of Meigs County during cemetery design (Site 1). Unincorporated Sequatchie County does not have development regulations (Site 2).

Technical Resource Area	Measure
Wetlands, Floodplains, and Coastal Zone Management	Design cemetery improvements to avoid wetlands and surface waters to the extent possible.
	Maintain green space buffers between the delineated wetlands and the cemetery development areas. Ensure all buffers are staked and protected to prevent disturbance during construction.
	If cemetery design requires construction within a wetland or stream area, submit requests for jurisdictional determination to the USACE and TDEC DWR, obtain all necessary permits and approvals from the agencies, and implement any required mitigation.
	Design cemetery improvements to be above 697 feet above mean sea level at Site 1, the elevation to which Chickamauga Lake can temporarily flood. Coordinated with the Tennessee Valley Authority (TVA) for any development near the Chickamauga Lake shoreline (Site 1).
	Design improvements in accordance with the requirements of Energy Independence Security Act Section 438 with respect to stormwater runoff quantity so as not to adversely affect the flood elevations or water quantity/quality in downstream receiving waters.
Socioeconomics	Secure construction areas to prevent unauthorized access by children from nearby residential areas.
Community Services	None required.
Solid Waste and Hazardous Materials	Complete an asbestos survey of the current site buildings by a Tennessee-licensed inspector (Site 2). Remove asbestos containing materials that are identified in accordance with the National Emission Standards for Hazardous Air Pollutants and State of Tennessee requirements prior to building demolition.
	Comply with applicable federal and state laws governing the use, generation, storage, transportation, and disposal of solid waste and hazardous materials.
Transportation and Parking	Coordinate with the Tennessee Department of Transportation, Meigs County, and/or Sequatchie County, as applicable, during the cemetery design to determine cemetery entrance location(s) and identify and implement any necessary roadway improvements.
	Ensure cemetery construction activities do not adversely affect traffic flow on local roadways; construction would be timed to avoid peak travel hours.
	Ensure debris and/or soil is not deposited on local roadways during the construction activities.

Technical Resource Area	Measure
Utilities	Contact the local utility providers to determine the connection/extension requirements and implement the necessary requirements. Determine if the municipal water system has sufficient capacity for cemetery irrigation.
	Design, install, and operate on-site septic systems in accordance with TDEC DWR guidelines, to the extent practicable.
	Decommission the existing residential water well and septic system (Site 2).
	Plant low moisture tolerant species suited to Tennessee to minimize irrigation needs.
Environmental Justice	None required.

5.0 PUBLIC PARTICIPATION

VA invites public participation in decision-making on new proposals through the NEPA process. Public participation with respect to decision-making on the Proposed Action is guided by 38 CFR Part 26, VA's regulations for implementing NEPA. Additional guidance is provided in *VA's NEPA Interim Guidance for Projects* (U.S. Department of Veterans Affairs 2010). Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. Members of the public with a potential interest in the Proposed Action are encouraged to participate. A record of the public involvement associated with this EA is provided in Appendix F.

5.1 Scoping

VA initiated the NEPA public scoping process for the Proposed Action in September 2021, which included a public notice published in the Chattanooga Times Free Press, a local newspaper of general circulation on September 8 and 12, 2021. No public comments or input were received in response to the scoping notice.

5.2 Public Review

VA published and distributed the Draft EA for a 30-day public comment period, as announced by a Notice of Availability (NOA) published in the Chattanooga Times Free Press, a local newspaper of general circulation, on March 20 and 23, 2022. A copy of the Draft EA was made available for public review on the VA Office of Construction and Facilities Management Environmental Program website: (https://www.cfm.va.gov/environmental/index.asp). VA also emailed notification of the Draft EA for review and comment, with a link to the Draft EA on VA's website, to each of the government agencies and Tribes that were contacted during the NEPA scoping and Section 106 consultation, and State and Federal congressional representatives. The TDEC APC and Tennessee State Senator, Mr. Bo Watson provided comments on the Draft EA (Appendix F). These comments were considered in preparing the Final EA, as appropriate, and are summarized below.

- Tennessee State Senator Watson stated that he preferred Site 1 for the proposed cemetery due to its better proximity to an interstate highway, Interstate 75 (a major north-south corridor).
- TDEC APC reiterated their September 2021 NEPA scoping response. TDEC APC stated if the project involves construction and operation of an air contaminant source, a construction permit from TDEC APC would be required, unless specifically exempted. TDEC APC also provided guidance on asbestos removal prior to building demolition and open burning of demolition waste. Additionally, TDEC APC recommended reasonable precautions should be made to prevent particulate matter from becoming airborne. TDEC APC provided no comments specific to the Draft EA.

6.0 AGENCIES AND PERSONS CONSULTED

6.1 Agency Coordination

Agencies consulted for this EA include:

- U.S. Army Corps of Engineers
- U.S. Department of Agriculture Natural Resource Conservation Service
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- Tennessee Department of Agriculture
- Tennessee Department of Environmental Conservation (various divisions)
- Tennessee Department of Transportation
- Tennessee Valley Authority
- Tennessee Wildlife Resources Agency
- Southeast Tennessee Development District
- Meigs County (various departments)
- Sequatchie County

VA initiated the agency scoping process for the Proposed Action in August and September 2021, which included emailing the agencies scoping letters with a request for information and comment based on the available information regarding the Proposed Action.

VA received responses from the following agencies: USEPA; TDEC Division of Air Pollution Control (APC); TDEC Tennessee Division of Archaeology (TDOA); TDEC Division of Underground Storage Tanks (DUST); and TDEC Division of Water Resources (DWR). Input provided by these agencies is addressed in the appropriate resource sub-sections of Section 3. Written correspondence from the agencies is provided in Appendix B. The following summarizes that input, which VA used to focus this EA's analysis:

- **USEPA Region 4 Strategic Programs Office, NEPA Section** provided a comprehensive response regarding the Proposed Action on September 30, 2021. USEPA stated that upon a review of the scoping documents, the Proposed Action is reasonably compatible with the current land use near the proposed sites and it appears the project would not have a significant impact on human health or the environment. In addition, USEPA provided comments and recommendations for VA's NEPA analysis, as summarized below:
    - *Land Use and Cultural Resources*: If Site 1 is selected, USEPA recommended VA coordinate with the owner of Old Browder Cemetery and develop a formal agreement for access to and maintenance within the existing cemetery.
    - *Wetlands and Streams*: USEPA noted water resources at both Sites and recommended that design proposals and construction avoid impacting WOTUS to the maximum extent practicable by locating permanent infrastructure and temporary construction measures away from WOTUS and respective buffers. USEPA stated WOTUS should be delineated and coordination with the USACE should be made where proposed activities might enter or affect WOTUS. Mitigation may be required where impacts to WOTUS cannot be avoided. Flood zone and flood inundation maps should be used to help ensure proposed activities do not take place in floodplains except where alternatives are not practicable.

- *Water Quality*: USEPA noted that a construction stormwater permit would be required before construction can begin and BMPs should be implemented to mitigate impacts. Construction of rainwater runoff control structures designed to leave existing stormwater runoff profiles of the area unchanged may be required to mitigate the impacts of land development and construction of impervious surfaces, in accordance with Section 438 of the Energy Independence and Security Act of 2007.
- *Air Quality*: USEPA stated that the Proposed Action would be located in Meigs or Sequatchie County, TN, which are currently attainment with the NAAQS. USEPA recommended controlling fugitive dust emissions during construction and implementing measures to reduce diesel emissions from construction equipment, such as switching to cleaner fuels, retrofitting equipment with emission reduction technologies repowering older engines with cleaner engines, replacing older vehicles, inspecting and maintaining fuel tanks in accordance with regulations, and reducing idling through operator training and contracting policies.
- *Biological Resources*: USEPA indicated that they defer to the USFWS regarding compliance with the Endangered Species Act and recommended early coordination with the agency. USEPA recommends that conservation measures identified by the USFWS be included in the final NEPA document. USEPA also noted that assistance is available from the USDA-NRCS for the selection of native grasses and plants that minimize maintenance requirements.
- *Environmental Justice*: USEPA requested that VA ensure that protected populations are not disproportionately or adversely impacted by the project and promoted compliance with EO 13166, *Improving Access to Services for Persons with Limited English Proficiency*, if applicable. USEPA requested VA use the EJSCREEN tool as part of the NEPA analysis.
- *Energy Efficiency*: USEPA recommended the use of sustainable building practices that maximize energy and water conservation, and the use of renewable energy including solar power for supplemental electricity and lighting for infrastructure and buildings that may be constructed.
- *Hazardous Materials and Containment*: USEPA stated that construction and operation in support of the Proposed Action should ensure that Resource Conservation and Recovery Act-regulated solid wastes generated are disposed of in accordance with federal regulations. If vehicle and equipment maintenance is to be conducted on site, the USEPA recommended the use of secondary containment for storage and handling of petroleum, oils, and lubricants to protect surface waters of Tennessee and as required by the CWA.

- **Tennessee Department of Environment and Conservation (TDEC):**
  - **TDEC APC** provided a response on September 20, 2021, and stated if the project involves construction and operation of an air contaminant source, a construction permit from TDEC APC would be required, unless specifically exempted. TDEC APC also provided guidance on asbestos removal prior to building demolition and open burning of demolition waste. Additionally, TDEC APC recommended reasonable precautions should be made to prevent particulate matter from becoming airborne.
  - **TDEC TDOA** provided a response on September 23, 2021, and stated the project has potential to disturb significant archaeological resources within the proposed project areas. TDOA indicated Site 1 has three previously recorded archaeological sites and the Old Browder Cemetery within its boundaries. TDOA provided guidance on the requirements for the removal of human graves (court order) and human remains if encountered or accidentally uncovered by earthmoving activities (immediately cease activity and contact county coroner). Site 2 has not been surveyed and TDOA recommended the site be surveyed by a professional archaeologist

prior to project initiation. Old Browder Cemetery is located on a separate parcel from Site 1 that would not be owned or disturbed by VA, if Site 1 is selected. VA completed archaeological surveys of both sites; no significant archaeological resources were discovered. Section 3.5 provides additional information regarding cultural and archaeological resources.

- **TDEC DUST** responded on September 15, 2021 that they are unaware of any circumstances relative to the UST Program that would adversely affect the Proposed Action at Site 1 or Site 2.
- **TDEC DWR** provided a response on September 3, 2021, and stated the development of either site would disturb well more than one acre of land and would require a Construction Stormwater Permit under Tennessee's *General NPDES Permit for Discharges of Stormwater Associated with Construction Activities*. DWR also noted that owing to the expanse of the sites and site-specific conditions, they would require a hydrologic determination performed by a certified hydrologic professional to identify what aquatic resources within the project limits of disturbance could be impacted during the construction activities and to assess the potential for any alterations to wet weather conveyances, streams, wetlands, or other aquatic resources that would require an Aquatic Resource Alteration Permit (ARAP). DWR stated Site 2 would likely need stream buffers for McWilliams Creek and the unnamed tributary of McWilliams Creek that runs through the site. DWR also indicated neither site area has public sanitary sewerage available, which would mean any restrooms provided at the selected site would have to be connected to large capacity septic tanks and permitted by DWR. DWR commented that they believe public water systems serve the site areas, but if the cemetery provides water itself (such as through an on-site water supply well), it would fall under the jurisdiction of the DWR as a transient non-community water system.

6.2 National Historic Preservation Act Section 106 Consultation

In December 2021, VA initiated NHPA Section 106 consultation with the ACHP; Tennessee SHPO; the National Association of Tribal Historic Preservation Officers; the National Trail of Tears Association; and federally recognized Native American Tribes with possible geographic or cultural affiliation with areas of the Sites. The Section 106 consultation letters included a description of VA's proposed undertaking (Proposed Action), definition of the areas of potential effect (APEs), identification of historic properties (the results of the ICRIPs and Phase I Archaeological Surveys), and VA's finding of effects on historic properties (no historic properties affected).

TN SHPO concurred with VA's findings and no adverse effect determination in response letters dated December 27, 2021. No other agencies or Tribes have responded or elected to participate in the Section 106 consultation process.

Written Section 106 correspondence with TN SHPO and other consulting parties is provided in Appendix C.

6.3 Native American Consultation

VA initiated consultation with 17 federally recognized Native American Tribes as part of this NEPA process, in accordance with 36 CFR 800.2 and EO 13175, *Consultation and Coordination with Indian Tribal Governments*. These Tribes identified as having possible geographic or cultural affiliation with the areas of the Sites were invited by VA to participate in the Section 106 process in December 2021. Tribes consulted include:

- Alabama-Coushatta Tribe of Texas
- Cherokee Nation

- Chickasaw Nation
- Choctaw Nation of Oklahoma
- Coushatta Tribe of Louisiana
- Eastern Band of Cherokee Indians
- Ho-Chunk Nation of Wisconsin
- Jena Band of Choctaw Indians
- Mississippi Band of Choctaw Indians
- Muscogee (Creek) Nation
- Ponca Tribe of Indians of Oklahoma
- Ponca Tribe of Nebraska
- Seminole Nation of Oklahoma
- Seminole Tribe of Florida
- United Keetoowah Band of Cherokee Indians of Oklahoma
- United South and Eastern Tribes
- Winnebago Tribe of Nebraska

No Native American Tribal responses have been received by VA. Written Section 106 correspondence with Tribes is provided in Appendix C.

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Various mapping tools: www.maps.google.com, www.google.earth.com, etc.

9.0 GLOSSARY

100-Year Flood – A flood event of such magnitude that it occurs, on average, every 100 years; this equates to a one percent chance of it occurring in a given year.

Aesthetics – Pertaining to the quality of human perception of natural beauty.

Ambient - The environment as it exists around people, plants, and structures.

Ambient Air Quality Standards - Those standards established under the Clean Air Act to protect health and welfare.

Aquifer - An underground geological formation containing usable amounts of groundwater which can supply wells and springs.

Asbestos - Incombustible, chemical-resistant, fibrous mineral forms of impure magnesium silicate used for fireproofing, electrical insulation, building materials, brake linings, and chemical filters. Asbestos is a carcinogenic substance.

Attainment Area - Region that meets the National Ambient Air Quality Standard (NAAQS) for a criteria pollutant under the Clean Air Act.

Bedrock - The solid rock that underlies all soil, sand, clay, gravel and loose material on the earth's surface.

Best Management Practices (BMPs) - Methods, measures, or practices to prevent or reduce the contributions of pollutants to U.S. waters. Best management practices may be imposed in addition to, or in the absence of, effluent limitations, standards, or prohibitions (AR 200-1).

Contaminants - Any physical, chemical, biological, or radiological substances that have an adverse effect on air, water, or soil.

Council on Environmental Quality (CEQ) - An Executive Office of the President composed of three members appointed by the President, subject to approval by the Senate. Each member shall be exceptionally qualified to analyze and interpret environmental trends, and to appraise programs and activities of the federal government. Members are to be conscious of and responsive to the scientific, economic, social, aesthetic, and cultural needs of the Nation; and to formulate and recommend national policies to promote the improvement of the quality of the environment.

Criteria Pollutants - The Clean Air Act of 1970 required the USEPA to set air quality standards for common and widespread pollutants in order to protect human health and welfare. There are six "criteria pollutants": ozone (O_3), carbon monoxide (CO), sulfur dioxide (SO_2), lead (Pb), nitrogen dioxide (NO_2), and particulate matter.

Cultural Resources - Cultural resources are any prehistoric or historic remains or indicators of past human activities, including artifacts, sites, structures, landscapes, and objects of importance to a culture or community for scientific, traditional, religious, or other reasons.

Cumulative Impact - The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7).

Decibel (dBA) - A unit of measurement of sound pressure level whereby the decibel values of sounds at low frequencies are reduced.

Direct Impact - A direct impact is caused by a Proposed Action and occurs at the same time and place.

Emission - A release of a pollutant.

Endangered Species - Any species which is in danger of extinction throughout all or a significant portion of its range.

Environmental Assessment (EA) - An EA is a publication that provides sufficient evidence and analyses to show whether a proposed system will adversely affect the environment or be environmentally controversial.

Erosion - The wearing away of the land surface by detachment and movement of soil and rock fragments through the action of moving water and other geological agents.

Agricultural land - Cropland, pastures, meadows, and planted woodland.

Fauna - Animal life, especially the animal characteristics of a region, period, or special environment.

Flora - Vegetation; plant life characteristic of a region, period, or special environment.

Floodplain - The relatively flat area or lowlands adjoining a river, stream, ocean, lake, or other body of water that is susceptible to being inundated by floodwaters.

Fugitive Dust - Particles light enough to be suspended in air, but not captured by a filtering system. For this document, this refers to particles put in the air by moving vehicles and air movement over disturbed soils at construction sites.

Geology - Science which deals with the physical history of the earth, the rocks of which it is composed, and physical changes in the earth.

Groundwater - Water found below the ground surface. Groundwater may be geologic in origin and as pristine as it was when it was entrapped by the surrounding rock or it may be subject to daily or seasonal effects depending on the local hydrologic cycle. Groundwater may be pumped from wells and used for drinking water, irrigation, and other purposes. It is recharged by precipitation or irrigation water soaking into the ground. Thus, any contaminant in precipitation or irrigation water may be carried into groundwater.

Hazardous Material - defined within several laws and regulations to have certain meanings. For this document, a hazardous material is any one of the following:

- Any substance designated pursuant to section 311 (b)(2)(A) of the Clean Water Act.
- Any element, compound, mixture, solution, or substance designated pursuant to Section 102 of Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).
- Any hazardous substance as defined under the Resource Conservation and Recovery Act (RCRA).
- Any toxic pollutant listed under TSCA.
- Any hazardous air pollutant listed under Section 112 of the Clean Air Act.
- Any imminently hazardous chemical substance or mixture with respect to which the EPA Administrator has taken action pursuant to Subsection 7 of TSCA.
- The term does not include: 1) Petroleum, including crude oil or any thereof, which is not otherwise specifically listed or designated as a hazardous substance in a above. 2) Natural gas, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). A list of hazardous substances is found in 40 CFR 302.4.

Hazardous Waste - A solid waste which, when improperly treated, stored, transported, or disposed of, poses a substantial hazard to human health or the environment. Hazardous wastes are identified in 40 CFR 261.3 or applicable foreign law, rule, or regulation.

Hazardous Waste Storage - As defined in 40 CFR 260.10, ". . . the holding of hazardous waste for a temporary period, at the end of which the hazardous waste is treated, disposed of, or stored elsewhere".

Hydric Soil - A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic (oxygen-lacking) conditions that favor the growth and regeneration of hydrophytic vegetation. A wetland indicator.

Indirect Impact - An indirect impact is caused by a Proposed Action that occurs later in time or farther removed in distance but is still reasonably foreseeable. Indirect impacts may include induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural and social systems. For example, referring to the possible direct impacts described above, the clearing of trees for new development may have an indirect impact on area wildlife by decreasing available habitat.

Jurisdictional Wetland – Areas that meet the wetland hydrology, vegetation, and hydric soil characteristics, and have a direct connection to the Waters of the U.S. These wetlands are regulated by the USACE.

Listed Species - Any plant or animal designated by a state or the federal government as threatened, endangered, special concern, or candidate species.

Mitigation - Measures taken to reduce adverse impacts on the environment.

Monitoring - A process of inspecting and recording the progress of mitigation measures implemented.

National Ambient Air Quality Standards (NAAQS) - Nationwide standards set up by the USEPA for widespread air pollutants, as required by Section 109 of the Clean Air Act. Currently, six pollutants are regulated by primary and secondary NAAQS: carbon monoxide, lead, nitrogen dioxide, ozone, particulate matter, and sulfur dioxide.

National Environmental Policy Act (NEPA) - U.S. statute that requires all federal agencies to consider the potential effects of major federal actions on the human and natural environment.

National Historic Preservation Act (NHPA) - U.S. statute that requires federal agencies to evaluate the potential impact of federally funded or permitted projects on historic properties.

Non-attainment Area - An area that has been designated by the EPA or the appropriate State air quality agency as exceeding one or more national or state ambient air quality standards.

Parcel - A plot of land, usually a division of a larger area.

Particulates or Particulate Matter - Fine liquid or solid particles such as dust, smoke, mist, fumes, or smog found in air.

Physiographic Region - A portion of the Earth's surface with a basically common topography and common morphology.

Pollutant - A substance introduced into the environment that adversely affects the usefulness of a resource.

Potable Water - Water which is suitable for drinking.

Prime Agricultural land - A special category of highly productive cropland that is recognized and described by the U.S. Department of Agriculture's Natural Resource Conservation Service and receives special protection under the Surface Mining Law.

Remediation - A long-term action that reduces or eliminates a threat to the environment.

Riparian Areas - Areas adjacent to rivers and streams that have a high density, diversity, and productivity of plant and animal species relative to nearby uplands.

Sensitive Receptors - Include, but are not limited to, asthmatics, children, and the elderly, as well as specific facilities, such as long-term health care facilities, rehabilitation centers, convalescent centers, retirement homes, residences, schools, playgrounds, and childcare centers.

Significant Impact - According to 40 CFR 1508.27, "significance" as used in NEPA requires consideration of both context and intensity.

- Context. The significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the Proposed Action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short- and long-term effects are relevant.
- Intensity. This refers to the severity of impact. Responsible officials must bear in mind that more than one agency may make decisions about partial aspects of a major action.

Soil - The mixture of altered mineral and organic material at the earth's surface that supports plant life.

Solid Waste - Any discarded material that is not excluded by section 261.4(a) or that is not excluded by variance granted under sections 260.30 and 260.31.

Threatened species - Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Topography - The relief features or surface configuration of an area.

Toxic Substance - A harmful substance which includes elements, compounds, mixtures, and materials of complex composition.

Waters of the United States - Include the following: Territorial seas and traditional navigable waters; perennial and intermittent tributaries that contribute surface water flow to such waters; certain lakes, ponds, and impoundments of jurisdictional waters; and wetlands adjacent to other jurisdictional waters.

Watershed - The region draining into a particular stream, river, or entire river system.

Wetlands - Areas that are regularly saturated by surface or groundwater and, thus, are characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include swamps, bogs, fens, marshes, and estuaries.

Wildlife Habitat - Set of living communities in which a wildlife population lives.