DRAFT

Site-Specific Environmental Assessment: Proposed Construction and Operation of the Phase 2 Expansion

Great Lakes National Cemetery
Holly Township, Oakland County, Michigan

U.S. Department of Veterans Affairs
425 I Street, NW
Washington, DC 20001

August 2019
EXECUTIVE SUMMARY

In this Site-Specific Environmental Assessment (SEA) the U.S. Department of Veterans Affairs (VA), National Cemetery Administration (NCA) identifies, analyzes, and documents the potential physical, environmental, cultural, and socioeconomic impacts associated with the Proposed Action to construct and operate the Phase 2 cemetery expansion within an approximately 30-acre area located in the central western portion within the existing boundary of the Great Lakes National Cemetery (GLNC) at 4200 Belford Road, Holly Township, Oakland County, Michigan. The Proposed Action also includes improvements to existing physical infrastructure (roads, parking areas) throughout a 20-acre portion of the Phase 1 cemetery. GLNC is currently utilizing existing burial space and capacity at a rate that is projected to exhaust existing developed gravesites within the next two years. Implementing the Proposed Action would allow VA to continue providing burial opportunities needed by Veterans and their families in the Detroit metropolitan area for at least the next 10 years by providing additional casket, columbarium, and in-ground cremation sites, as well as supporting infrastructure including a new committal service shelter, new roadways and parking areas, irrigation systems, landscaping, stormwater management, and operational facility improvements.

The Phase 2 expansion would be constructed and operated according to VA’s NCA Facilities Design Guide.

The purpose of the Proposed Action is to enable NCA to continue providing interment benefits to eligible Veterans and their families by further extending the longevity of GLNC.

The Proposed Action is needed to allow NCA to continue meeting its goal of providing eligible Veterans and their families with reasonable access to VA burial options and address the depletion of existing gravesites.

The following two alternatives are analyzed in this SEA:

- The Proposed Action is to construct and operate the Phase 2 expansion at GLNC. This expansion would occur within an approximately 30-acre area in the central western portion of the existing GLNC, with improvements to existing infrastructure within an approximately 20-acre area within the Phase 1 cemetery. The Proposed Action would provide approximately 9,600 pre-placed double-depth crypts, 6,600 in-ground cremation sites, 12,070 columbarium niches, and 300 over-sized pre-placed double-depth crypts; roadways connecting existing and new burial sections; two additional cortege lanes; additional parking at the assembly area and committal shelters; a new committal service shelter; additions to the public restrooms; maintenance complex improvements; a new materials storage shelter; grading for stormwater management; and associated landscaping, site furnishings, irrigation, and infrastructure improvements. The Proposed Action would extend the longevity of GLNC and accommodate long-term burial needs of future generations of Veterans and their families in the Detroit metropolitan area for the next 10 years.

- The No Action alternative would maintain GLNC as it presently exists. The current burial capacity at GLNC, which is being rapidly depleted, would not be increased, and associated infrastructure improvements would not be implemented. Under the No Action alternative, the longevity of GLNC would not be extended, and future generations of eligible Veterans and their families increasingly would not have long-term, reasonable access to burial options.
benefits at a National Cemetery in the Detroit metropolitan area. The nearest open national cemetery, Fort Custer National Cemetery in Augusta, MI is located approximately 134 miles to the southwest of GLNC. The No Action alternative would place an undue burden on Veterans, their families, and visitors by requiring extended travel to reach a National Cemetery outside of the Detroit metropolitan area. Thus, the No Action alternative would not meet the purpose and need for action.

The following table summarizes the potential environmental impacts of the Proposed Action and the No Action alternative.

<table>
<thead>
<tr>
<th>Resource / Issue</th>
<th>Proposed Action</th>
<th>No Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meets Purpose and Need for Action</td>
<td>Yes. Short-term, direct, minor, less-than-significant adverse impact from clearing and presence of heavy construction equipment. Long-term, direct, moderate beneficial impacts from extending the park-like setting during operation.</td>
<td>No. None.</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>Short-term, direct, negligible, adverse impact from dust and construction equipment emissions, which are below de minimis thresholds. Long-term, direct, negligible adverse impact from routine maintenance operations. Beneficial impact by avoiding the need for visitors to travel longer travel distances and generate more emissions.</td>
<td>Long-term, negligible, less-than-significant adverse impact from vehicle emissions traveling to a National Cemetery outside of the Detroit metropolitan area.</td>
</tr>
<tr>
<td>Air Quality</td>
<td>No impact on geology. Long-term, direct, negligible, less-than-significant adverse impact on topography due to grading. Short-term, minor impact on soil quality due to construction disturbance. Long-term, less-than-significant impact from permanently converting prime farmland to burial sections. Impacts further minimized through BMPs per associated Stormwater Pollution Prevention Plan and Soil Erosion and Sedimentation Control Plan. Maintain equipment and refuel in impervious area to avoid accidental releases to soil.</td>
<td>None.</td>
</tr>
<tr>
<td>Geology, Topography, and Soils</td>
<td>Short-term, direct, negligible impact on cultural resources from potential of an inadvertent discovery. No cultural resources or archaeological sites identified during 2019 investigations, all known cultural resources would be avoided during construction.</td>
<td>None.</td>
</tr>
<tr>
<td>Cultural Resources</td>
<td>Short- and long-term, direct, less-than-significant adverse impacts to vegetation, wildlife, and special status species from converting approximately 30 acres of agricultural fields to landscaped grounds; adverse impacts minimized by avoidance measures including seasonal tree clearing restrictions.</td>
<td>None.</td>
</tr>
<tr>
<td>Wildlife and Habitat</td>
<td>Short-term, direct, negligible, less-than-significant adverse impact from construction machinery, minimized by natural vegetated borders and worker protections. Long-term, direct, negligible, less-than-significant operational impacts from grounds maintenance equipment.</td>
<td>None.</td>
</tr>
<tr>
<td>Noise</td>
<td>Short-term, direct, negligible, less-than-significant adverse impacts to surface water, minimized by BMPs to reduce sedimentation of runoff during construction and operation.</td>
<td>None.</td>
</tr>
<tr>
<td>Land Use</td>
<td>No impact on zoning or land use.</td>
<td>None.</td>
</tr>
<tr>
<td>Hydrology and Water Quality</td>
<td>Short-term, direct, negligible, less-than-significant adverse impacts to surface water, minimized by BMPs to reduce sedimentation of runoff during construction and operation.</td>
<td>None.</td>
</tr>
<tr>
<td>Resource / Issue</td>
<td>Proposed Action</td>
<td>No Action</td>
</tr>
<tr>
<td>-----------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Floodplains, Wetlands, and Coastal Zone Management</td>
<td>Long-term, direct, minor, less-than-significant adverse impact on wetlands, minimized by design and compliance with EGLE permits. No impact to floodplains or coastal zone management areas.</td>
<td>Long-term, negligible adverse impact on families who must travel outside of the Detroit metropolitan area.</td>
</tr>
<tr>
<td>Socioeconomics</td>
<td>Short-term, direct, negligible, beneficial but less-than-significant impact on the local economy from purchasing construction materials from local or regional suppliers and hiring local construction workers. Negligible impact during operation. Long-term, negligible, beneficial but less-than-significant impact by reducing travel expenses if cemetery was not expanded.</td>
<td>Long-term, significant adverse impact on families of Veteran’s buried more than 75 miles beyond the Detroit metropolitan area and who must travel longer distances for visitation. Not in compliance with Servicemembers Civil Relief Act.</td>
</tr>
<tr>
<td>Community Services</td>
<td>Long-term, direct, significant beneficial impact by providing additional burial capacity and extending longevity of GLNC. No impact on other community services.</td>
<td></td>
</tr>
<tr>
<td>Solid Waste and Hazardous Materials</td>
<td>Short-term, direct, negligible, less-than-significant impacts due to increase in solid waste (excess construction materials). Long-term, direct, negligible, less-than-significant adverse operational impact from increased visitor wastes and excess soils.</td>
<td>None.</td>
</tr>
<tr>
<td>Transportation and Parking</td>
<td>Short-term, direct, less-than-significant adverse impact from construction traffic within GLNC, minimized by designated travel routes and scheduling to avoid disrupting memorial services. Long-term, moderate, beneficial impacts to parking during operation from additional parking areas.</td>
<td>None.</td>
</tr>
<tr>
<td>Utilities</td>
<td>Long-term, direct, negligible adverse impact during operation due to increased use of irrigation water for the new expansion area.</td>
<td>None.</td>
</tr>
<tr>
<td>Environmental Justice</td>
<td>No environmental justice conditions present in community; no impact.</td>
<td></td>
</tr>
<tr>
<td>Potential for Generating Substantial Controversy</td>
<td>Proposed Action would be positively perceived and widely accepted by the public.</td>
<td>Substantial adverse public reaction if expansion is not implemented; inconsistent with original Master Plan.</td>
</tr>
</tbody>
</table>

When considered cumulatively, impacts from the Proposed Action and those from past projects and probable future projects at and in the vicinity of GLNC remain at less-than-significant adverse levels for the environmental resources analyzed in this SEA. Likewise, the No Action alternative would remain at a significant adverse level on a cumulative basis due to the unmitigated impact on Community Services associated with a decrease in the longevity of GLNC and a lack of burial opportunities at a National Cemetery in the Detroit metropolitan area.
3.6 Wildlife and Habitat .................................................................................................................... 27  
3.6.1 Existing Environment .............................................................................................................. 27  
3.6.2 Environmental Consequences ............................................................................................. 31  
3.7 Noise ........................................................................................................................................... 34  
3.7.1 Existing Environment .............................................................................................................. 34  
3.7.2 Environmental Consequences ............................................................................................. 35  
3.8 Land Use ..................................................................................................................................... 37  
3.8.1 Existing Environment .............................................................................................................. 37  
3.8.2 Environmental Consequences ............................................................................................. 37  
3.9 Hydrology and Water Quality ..................................................................................................... 37  
3.9.1 Existing Environment .............................................................................................................. 37  
3.9.2 Environmental Consequences ............................................................................................. 40  
3.10 Floodplains, Wetlands, and Coastal Zone Management ............................................................. 42  
3.10.1 Existing Environment .............................................................................................................. 42  
3.10.2 Environmental Consequences ............................................................................................. 45  
3.11 Socioeconomics .......................................................................................................................... 46  
3.11.1 Existing Environment .............................................................................................................. 46  
3.11.2 Environmental Consequences ............................................................................................. 47  
3.12 Community Services ................................................................................................................... 48  
3.12.1 Existing Environment .............................................................................................................. 48  
3.12.2 Environmental Consequences ............................................................................................. 48  
3.13 Solid Wastes and Hazardous Materials ....................................................................................... 48  
3.13.1 Existing Environment .............................................................................................................. 48  
3.13.2 Environmental Consequences ............................................................................................. 49  
3.14 Transportation and Parking ......................................................................................................... 50  
3.14.1 Existing Environment .............................................................................................................. 50  
3.14.2 Environmental Consequences ............................................................................................. 51  
3.15 Utilities ........................................................................................................................................ 52  
3.15.1 Existing Environment .............................................................................................................. 52  
3.15.2 Environmental Consequences ............................................................................................. 53  
3.16 Environmental Justice ................................................................................................................. 54  
3.16.1 Existing Environment .............................................................................................................. 54  
3.16.2 Environmental Consequences ............................................................................................. 54  
3.17 Cumulative Impacts .................................................................................................................... 55
3.17.1 Cumulative Actions Considered ................................................................. 55
3.17.2 Effects of Cumulative Actions on the Proposed Action .................................. 56
3.17.3 Effects of Cumulative Action under the No Action Alternative ....................... 57
3.18 Potential for Generating Substantial Controversy ............................................. 57

4 AGENCY COORDINATION AND PUBLIC INVOLVEMENT .................................. 58
   4.1 Federal, State, and Local Agency Coordination ................................................. 58
   4.2 Native American Coordination ........................................................................... 59
   4.3 Public Involvement .............................................................................................. 59

5 ENVIRONMENTAL MANAGEMENT MEASURES AND MONITORING ................. 61

6 ENVIRONMENTAL PERMITS, APPROVALS, AND DETERMINATIONS POTENTIALLY REQUIRED .................................................................................................................. 65

7 LIST OF PREPARERS ............................................................................................... 68

8 REFERENCES ........................................................................................................... 69

9 GLOSSARY .............................................................................................................. 71

TABLES
Table 1. Estimate of Particulate Matter Emissions During Construction of the Proposed Action ................................................................. 15
Table 2. Estimate of Annual Non-Road Emissions of Criteria Pollutants During Construction ................................................................. 16
Table 3. Estimated Total Operational Hours for Construction Equipment ................................................................. 16
Table 4. SCAB3 Fleet Average Emission Factors (Diesel) ............................................ 16
Table 5. Total Criteria Pollutant Emissions from Non-Road Construction Vehicles ........ 16
Table 6. USDA-NRCS Soils within the Phase 2 Development Area .................................. 20
Table 7. Federally and State Listed Species with Potential to Occur at GLNC ................ 29
Table 8. Common Household, Industrial, and Construction Sound Levels ...................... 34
Table 9. Azimuth Predicted Noise Levels from Rifle Salutes ........................................ 35
Table 10. Estimated Noise Levels from Construction Activities .................................... 36
Table 11. Demographic Data for Oakland County and the State of Michigan .................. 46
Table 12. Economic Data for Oakland County and the State of Michigan ....................... 47
Table 13. Minority and Low-Income Populations .......................................................... 54
Table 14. Federal, State, and Local Agency Coordination Summary ............................... 58
Table 15. Environmental Protection Measures and Monitoring incorporated in the Proposed Action ................................................................. 61

FIGURES
Figure 1. Great Lakes National Cemetery Site Location .............................................. 2
Figure 2. Full Phase 2 Development Plan ................................................................. 8
Figure 3. Great Lakes National Cemetery Burial Section Development Plan ..................... 9
Figure 4. Topography at Great Lakes National Cemetery ............................................. 19
Figure 5. Soil Map Units within the Phase 2 Development Area ..................................... 23
Figure 6. Bald Eagle Nest Near GLNC ....................................................................... 32
Figure 7. Surface Water Features at Great Lakes National Cemetery ............................ 39
Figure 8. Delineated Wetland Areas at Great Lakes National Cemetery ....................... 43
Figure 9. Great Lakes National Cemetery FEMA Floodplain Map .................................. 44
APPENDICES

Appendix A – Environmental Survey Reports
Appendix B – Regulatory Agency Correspondence
Appendix C – Public Involvement Documentation
### ACRONYMS AND ABBREVIATIONS

<table>
<thead>
<tr>
<th>Acronym/Abbreviation</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>AADT</td>
<td>Annual Average Daily Traffic</td>
</tr>
<tr>
<td>AIRFA</td>
<td>American Indians Religious Freedom Act</td>
</tr>
<tr>
<td>APE</td>
<td>Area of Potential Effect</td>
</tr>
<tr>
<td>AQCR</td>
<td>Air Quality Control Region</td>
</tr>
<tr>
<td>ARPA</td>
<td>Archaeological Resources Protection Act</td>
</tr>
<tr>
<td>BGEPa</td>
<td>Bald and Golden Eagle Protection Act</td>
</tr>
<tr>
<td>BMP</td>
<td>Best Management Practice</td>
</tr>
<tr>
<td>CAA</td>
<td>Clean Air Act</td>
</tr>
<tr>
<td>CEQ</td>
<td>Council on Environmental Quality</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CO</td>
<td>Carbon Monoxide</td>
</tr>
<tr>
<td>CWA</td>
<td>Clean Water Act</td>
</tr>
<tr>
<td>CZMA</td>
<td>Coastal Zone Management Act</td>
</tr>
<tr>
<td>EA</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>EGLE</td>
<td>Environmental Great Lakes and Energy</td>
</tr>
<tr>
<td>EIS</td>
<td>Environmental Impact Statement</td>
</tr>
<tr>
<td>EISA</td>
<td>Energy Independence and Security Act</td>
</tr>
<tr>
<td>EO</td>
<td>Executive Order</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
</tr>
<tr>
<td>ESA</td>
<td>Endangered Species Act</td>
</tr>
<tr>
<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
</tr>
<tr>
<td>FIRM</td>
<td>Flood Insurance Rate Map</td>
</tr>
<tr>
<td>FONSI</td>
<td>Finding of No Significant Impact</td>
</tr>
<tr>
<td>FPPA</td>
<td>Farmland Protection Policy Act</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse gas</td>
</tr>
<tr>
<td>GLNC</td>
<td>Great Lakes National Cemetery</td>
</tr>
<tr>
<td>IICEP</td>
<td>Interagency and Intergovernmental Coordination for Environmental Planning</td>
</tr>
<tr>
<td>JD</td>
<td>Jurisdictional determination</td>
</tr>
<tr>
<td>MBTA</td>
<td>Migratory Bird Treaty Act</td>
</tr>
<tr>
<td>MDEQ</td>
<td>Michigan Department of Environmental Quality (now Environment, Great Lakes &amp; Energy)</td>
</tr>
<tr>
<td>MDOT</td>
<td>Michigan Department of Transportation</td>
</tr>
<tr>
<td>MI</td>
<td>Michigan</td>
</tr>
<tr>
<td>MNFI</td>
<td>Michigan Natural Features Inventory</td>
</tr>
<tr>
<td>NAAQS</td>
<td>National Ambient Air Quality Standards</td>
</tr>
<tr>
<td>NAGPRA</td>
<td><em>Native American Graves Protection and Repatriation Act</em></td>
</tr>
<tr>
<td>NCA</td>
<td>National Cemetery Administration</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
</tr>
<tr>
<td>NHPA</td>
<td>National Historic Preservation Act</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety and Health</td>
</tr>
<tr>
<td>NLEB</td>
<td>Northern long-eared bat</td>
</tr>
<tr>
<td>NOx</td>
<td>Nitrogen Dioxide</td>
</tr>
<tr>
<td>NOA</td>
<td>Notice of Availability</td>
</tr>
<tr>
<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
</tr>
<tr>
<td>Acronym/Abbreviation</td>
<td>Definition</td>
</tr>
<tr>
<td>----------------------</td>
<td>------------</td>
</tr>
<tr>
<td>NPDES</td>
<td>National Pollutant Discharge Elimination System</td>
</tr>
<tr>
<td>NPS</td>
<td>National Park Service</td>
</tr>
<tr>
<td>NRCS</td>
<td>Natural Resources Conservation Service</td>
</tr>
<tr>
<td>NREPA</td>
<td>Natural Resources and environmental Protection Act</td>
</tr>
<tr>
<td>NRHP</td>
<td>National Register of Historic Places</td>
</tr>
<tr>
<td>OCFM</td>
<td>VA Construction and Facilities Management Office</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
</tr>
<tr>
<td>PIC</td>
<td>Public Information Center</td>
</tr>
<tr>
<td>PM</td>
<td>Particulate Matter</td>
</tr>
<tr>
<td>RCOC</td>
<td>Road Commission for Oakland County</td>
</tr>
<tr>
<td>ROG</td>
<td>Reactive Organic Gases</td>
</tr>
<tr>
<td>ROI</td>
<td>Region of Influence</td>
</tr>
<tr>
<td>SCAQMD</td>
<td>South Coast Air Quality Management District</td>
</tr>
<tr>
<td>SEA</td>
<td>Site-Specific Environmental Assessment</td>
</tr>
<tr>
<td>SESC</td>
<td>Soil Erosion and Sedimentation Control</td>
</tr>
<tr>
<td>SHPO</td>
<td>State Historic Preservation Officer</td>
</tr>
<tr>
<td>SIP</td>
<td>State Implementation Plan</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard Operation Procedure</td>
</tr>
<tr>
<td>SWPPP</td>
<td>Stormwater Pollution Prevention Plan</td>
</tr>
<tr>
<td>USACE</td>
<td>United States Army Corps of Engineers</td>
</tr>
<tr>
<td>USC</td>
<td>United States Code</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
<tr>
<td>USFWS</td>
<td>United States Fish and Wildlife Service</td>
</tr>
<tr>
<td>USGS</td>
<td>United States Geological Survey</td>
</tr>
<tr>
<td>VA</td>
<td>United States Department of Veterans Affairs</td>
</tr>
<tr>
<td>VOC</td>
<td>Volatile Organic Compound</td>
</tr>
<tr>
<td>WRD</td>
<td>Water Resources Division</td>
</tr>
</tbody>
</table>
1 INTRODUCTION

The U.S. Department of Veterans Affairs (VA) National Cemetery Administration (NCA) honors Veterans and their families with final resting places in national shrines and with lasting tributes that commemorate their service and sacrifice to the nation. The NCA maintains approximately 3.7 million gravesites at 136 National Cemeteries and 33 Soldiers’ Lots and monument sites in 40 states and Puerto Rico (NCA, 2019). The mission of VA’s Construction and Facility Management Office (OCFM) is to advance the VA’s larger mission in support of the nation’s Veterans by planning, designing, constructing, and acquiring major facilities, and by setting design and construction standards.

This Site-Specific Environmental Assessment (SEA) analyzes the environmental and socioeconomic impacts of constructing and operating the Phase 2 expansion of the Great Lakes National Cemetery (GLNC) located at 4200 Belford Road, Holly Township, Oakland County, Michigan.

1.1 Background

The Veterans Millennium Health Care and Benefits Act of 1999 required VA to establish six additional National Cemeteries in areas of the U.S. where burial needs were greatest. One of these six areas was Michigan, specifically the Detroit metropolitan area. Accordingly, in August 2001 NCA completed an Environmental Assessment (EA) analyzing the initial site selection and the reasonably foreseeable impacts associated with the phased construction and operation of a new national cemetery in the Detroit metropolitan area. Four different sites were identified, and the potential impact from developing each site as a typical National Cemetery was assessed and documented in the EA (VA, 2001). Based on the EA and a subsequent Finding of No Significant Impact (FONSI), NCA selected a 544-acre property, which was formerly used for agricultural purposes, located at 4200 Belford Road, Holly Township, Oakland County, Michigan (Figure 1).
Figure 1. Great Lakes National Cemetery Site Location
VA purchased the 544-acre property in 2002 and began preparing a Master Plan for the phased full build-out of GLNC. Phase 1 of GLNC was completed in 2005 and GLNC opened for burials in October of that year. The Phase 1 area of GLNC is located in the northwestern portion of GLNC and provides 18 burial sections, four columbarium complexes, an assembly area with associated parking, a combination Public Information Complex (PIC)/Administrative Building, three committal service shelters, a maintenance complex and maintenance yard, an honor guard building, a memorial walk, and associated roadways, infrastructure, site furnishings, and utilities. GLNC serves the estimated 352,100 Veterans within a 75-mile radius of the cemetery.

In 2018, VA determined that an expansion of GLNC was necessary to continue providing burial benefits to Veterans and their families in the Detroit metropolitan area. VA projects that if an expansion does not occur, depletion of casketed gravesites will occur by January 2043, columbarium niche cremation sites by August 2024, and in-ground cremation gravesites by July 2023.

Accordingly, VA has begun planning for the Phase 2 expansion at GLNC, including preparation of this SEA to identify, analyze and document the potential physical, environmental, cultural, and socioeconomic impacts associated with implementing the Proposed Action. Additionally, this SEA evaluates the potential impacts associated with taking no action (i.e. not implementing the Proposed Action), where the conditions as they currently exist at GLNC would remain unchanged for the foreseeable future.

In summary, the two alternatives analyzed in this SEA are:

- **The Proposed Action** is to construct and operate the Phase 2 expansion at GLNC. This expansion would occur within an approximately 30-acre area in the central western portion of the existing GLNC, as well as improvements to existing infrastructure within an approximately 20-acre area in the current Phase 1 cemetery. The Proposed Action would provide approximately 9,600 pre-placed double-depth crypts, 6,600 in-ground cremation sites, 12,070 columbarium niches, and 300 over-sized pre-placed double-depth crypts; roadways connecting existing and new burial sections; two additional cortege lanes; additional parking at the assembly area and committal shelters; a new committal service shelter; additions to the public restrooms; maintenance complex improvements; a new materials storage shelter; grading for stormwater management; and associated landscaping, site furnishings, irrigation, and infrastructure improvements. The Proposed Action would extend the longevity of GLNC for approximately 10 years and accommodate long-term burial needs of future generations of Veterans and their families in the Detroit metropolitan area.

- **The No Action** alternative would maintain GLNC as it presently exists. The current burial capacity at GLNC would not be increased, and associated infrastructure improvements would not be implemented. Thus, the longevity of GLNC would not be extended, and future generations of eligible Veterans and their families increasingly would not have long-term, reasonable access to burial benefits at a National Cemetery in the Detroit metropolitan area. The nearest open national cemetery, Fort Custer National Cemetery in Augusta, MI, is approximately 134 miles southwest of GLNC. The No Action alternative would place an undue burden on Veterans, their families, and visitors by requiring extended travel to reach a National Cemetery outside of the Detroit metropolitan area in addition to limiting burial services to Veterans in the Augusta, MI area. Thus, the No Action alternative would not meet the purpose and need for action.
1.2 Purpose and Need

The _purpose_ of the Proposed Action is to enable NCA to continue providing interment benefits to eligible Veterans and their families by further extending the longevity of GLNC.

The Proposed Action is _needed_ to allow NCA to continue meeting its goal of providing eligible Veterans and their families with reasonable access to VA burial options and address the depletion of gravesites.

1.3 Existing Site Details

GLNC is located at 4200 Belford Road, Holly Township, Oakland County, Michigan. It is located in a low-density agricultural area, approximately 2.5 miles west of Interstate 75 (I-75), and approximately 58 miles northwest of Detroit, MI.

As of May 2019, approximately 42,000 interments have been completed within the Phase 1 portion of GLNC. However, interment areas within the Phase 1 cemetery are limited, while the demand for reasonable burial options for Veterans in the Detroit metropolitan area continues to increase. On average, there are 15 to 25 funeral services per weekday, resulting in approximately 3,900 to 6,500 burials per year.

1.4 Regulatory Requirements

This SEA is conducted in accordance with the _National Environmental Policy Act of 1969 (NEPA)_ (42 United States Code [USC] 4321 et seq.), the White House Council on Environmental Quality (CEQ) “Regulations Implementing the Procedural Provisions of NEPA” (40 Code of Federal Regulations [CFR] 1500-1508), the VA’s NEPA regulations titled “Environmental Effects of the Department of Veterans Affairs Actions” (38 CFR Part 26), and the VA’s NEPA Interim Guidance for Projects (VA, 2010). These requirements specify that VA must evaluate the potential environmental impacts of VA facilities, operations, and related funding decisions prior to taking action. VA must apply the NEPA review process and use the information to make an informed decision prior to undertaking a proposed action. An EA provides sufficient evidence and analysis for determining whether an action would cause significant environmental impacts (requiring an Environmental Impact Statement [EIS]) or the agency can issue a FONSI (40 CFR 1508.9). A FONSI is a decision document that briefly presents the reasons why an action would not have a significant effect on the human environment (40 CFR 1508.13). As required by NEPA and the implementing regulations from CEQ and VA, the alternative of taking no action is evaluated, providing a baseline for comparison of potential impacts from the action alternative(s).

This SEA tiers to selected portions of the 2001 EA for initial siting of GLNC (VA, 2001). This approach is in full compliance with CEQ Regulations that state that NEPA documents should be “analytic rather than encyclopedic” (40 CFR Part 1502.2a) and that scoping should be used to “identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review (40 CFR Part 1506.3), narrowing the discussion of these issues in the statement [EA] to a brief presentation of why they would not have a significant effect on the human environment or providing a reference to their coverage elsewhere” (40 CFR Part 1501.7(a)(3)).

Accordingly, VA is using "Incorporation by Reference" per 40 CFR Part 1502.21 and "Tiering" per 40 CFR Part 102.20 to reduce the volume of this SEA.
1.5 Decision Making

VA, as a federal agency, is required to incorporate environmental considerations into its decision-making process for the actions it proposes to undertake. This is done in accordance with CEQ NEPA-implementing regulations.

The purpose of this SEA is to inform federal decision makers and the public of the potential environmental effects of the Proposed Action and its considered alternatives, prior to making a federal decision to move forward with the Proposed Action. In this manner, the federal decision makers can make a fully informed decision, aware of the potential environmental effects of the Proposed Action. The intended purposes of this SEA are to:

- Inform the public of the possible environmental impacts of the Proposed Action and its considered alternatives, as well as methods to reduce these impacts;
- Allow for public, state, inter-agency, and tribal input into the VA’s planning and evaluation;
- Document the NEPA process; and
- Support informed decision-making by the federal government.

As the decision document for this proposed federal undertaking, this SEA also identifies the actions to which the VA would commit to minimize environmental effects, as required under NEPA, CEQ Regulations, 38 CFR Part 26, and the VA’s NEPA guidance (VA, 2010).

The decision to be made is whether, having considered the potential physical, environmental, cultural, and socioeconomic effects, VA should implement the Proposed Action and, as appropriate, carry out measures to reduce its adverse effects on the environment through implementation of Best Management Practices (BMP) and adherence to applicable federal and state permit requirements.
2 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

NEPA, and the regulations of CEQ and VA for implementing NEPA, require all reasonable alternatives to be rigorously explored and objectively evaluated. Accordingly, this chapter summarizes the process used to develop alternatives and provides a description of the subsequently selected Proposed Action and its alternatives, as well as alternatives considered but ultimately eliminated from further analysis, and the reasons for elimination.

2.1 Development of Alternatives

The alternatives evaluated in this SEA are the Proposed Action and No Action. The Proposed Action is described in detail in the following section. The No Action alternative serves as the baseline for determining the significance of potential effects of the Proposed Action in relation to existing conditions.

2.2 Proposed Action

2.2.1 Phase 2 Expansion

Under the Proposed Action, the Phase 2 expansion would be located within an approximately 30-acre area in the central western portion of GLNC, with additional improvements to existing infrastructure located within an approximately 20-acre portion of the Phase 1 cemetery (Figure 2). The expansion would provide approximately 10 years of burial capacity and include several new infrastructure elements and improvements as described in the following list. Additionally, the Phase 2 expansion design incorporates measures to minimize and avoid adverse impacts to the environment and would be consistent with existing wetland permits.

- New Burial Sections – The Phase 2 expansion will provide approximately 28,570 new gravesites in 16 new burial sections (Figure 3).
  - In-Ground Burial Section – In-ground burial sections would be graded and separated by landscaping. New in-ground burial sections would provide approximately 9,600 pre-placed double depth crypts in five burial sections; 300 over-sized pre-placed double depth crypts in one burial section west of the existing Columbarium C; and 6,600 in-ground cremation sites in eight burial sections.
  - Columbarium – A new columbarium complex would provide approximately 12,070 columbarium niches for cremation urns on a dedicated road with associated parking. The columbarium complex would consist of 32 double-sided free-standing walls and one single-sided back wall, all of which would be five niche units tall.
- Cortege Lane Expansion – The existing cortege lanes would be expanded to allow for the construction of two additional lanes and one pass through lane. The lanes would be expanded to the east into the existing lawn area adjacent to the PIC/ Administrative building.
- Assembly Area Parking – Additional parking spaces would be provided at the existing assembly area to accommodate more automobiles. Cortege lanes would be expanded to the south, southeast, and east of the existing parking area. The existing service road and sidewalks would be adjusted to accommodate for the new parking lot layout.
Committal Service Shelters – A new committal service shelter would be constructed off the new Phase 2 roadway. The committal service shelter design would be identical to the existing two shelters and be 32 feet in length by 25 feet in width. Parking would be expanded at the existing Committal Shelters 1 and 2. A satellite parking lot would be constructed at Committal Shelter 1 to accommodate honor guard parking needs. A new sidewalk would be constructed to allow pedestrian access between the parking lot and the existing honor guard building. New honor guard parking spaces would also be provided northwest of Committal Shelter 2.

Roadway Expansion and Improvements – The cemetery roadways would be expanded to the new columbarium complex, committal service shelter, and burial sections. New roadways would avoid wetland impacts. The Phase 2 expansion would also provide improvements to existing roadways including replacement of pavement in areas with degradation of structural integrity.

Memorial Walk Expansion – The memorial walkway that runs parallel to Fagan Lake would be extended to connect to existing Committal Shelter 3 and to the west to connect with the walkway that currently encircles Memorial section 1.

Grading – New burial sections would be graded in accordance with NCA site design guidelines. Associated drainage would be provided to ensure proper stormwater management.

Landscaping – The expansion area would be landscaped to provide privacy and in a manner that is consistent with the existing cemetery. Planted vegetation would primarily be turf grass, including Kentucky bluegrass and perennial ryegrass.

Irrigation – Operation of the Phase 2 expansion would require consumption of water to irrigate the new landscaped areas. The existing looped mainline irrigation system would be extended to the new burial sections. The mainline would be connected to the new sections at the north and east ends of Avenue of Flags. Fagan Lake would continue to supply irrigation water. No potable water would be used.
Figure 2. Full Phase 2 Development Plan
Figure 3. Great Lakes National Cemetery Burial Section Development Plan
2.3 No Action Alternative

The No Action alternative serves as a benchmark against which the effects of the Proposed Action can be evaluated, as required under the CEQ Regulations (40 CFR Part 1502.14). For this project, No Action is defined as not implementing the Proposed Action and maintaining GLNC as it currently exists.

The No Action alternative would challenge NCA’s goal of providing eligible Veterans and their family members with reasonable access to VA burial options in the Detroit metropolitan area and therefore would not meet the purpose and need for action. Under the No Action alternative, long-term reasonable access to burial benefits would not be provided to the estimated 352,100 Veterans or their families living within 75-miles of GLNC. Because the nearest National Cemetery is the Fort Custer National Cemetery in Augusta, MI, approximately 134 miles to the southwest, Veterans and their families residing in the Detroit metropolitan area would continue to be underserved in the future; in many cases, this would require Veterans and their families to travel more than 75 miles to reach another National Cemetery or use a private cemetery. The distribution of National Cemeteries in the region would be unequal, and VA would not comply with the requirements of the Servicemembers Civil Relief Act. Furthermore, for survivors of deceased Veterans, the No Action alternative would result in a hardship, because it would require burial and visitation at a National Cemetery located more than 75 miles outside of the Detroit metropolitan area. If Veterans and their families must resort to private burials, they are deprived of the honor and privilege bestowed upon them by a grateful nation for their service to their country.
3 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 Criteria for Analysis of Impacts

This section describes the existing conditions at GLNC and presents an analysis of the potential environmental consequences of the Proposed Action and No Action alternative. 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 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. Significance criteria by resource area are presented in the following sections.

**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.

3.2 Aesthetics

3.2.1 Existing Environment

A combination of natural and built features influence and contribute to the aesthetic environment of an area. Natural features may include topography and vegetation, which themselves may have been altered over time by human action, while built features can include buildings and other constructed elements. Beneficial or adverse impacts may occur depending on how changes to the existing aesthetic environment are perceived by human receptors, which can include visitors and residents living adjacent to and in the vicinity of the area.

The existing topography at GLNC consists of gently rolling hills and low-lying wetland areas. The ground elevation at GLNC ranges from 702 feet above mean sea level (amsl) to 1027 feet amsl. Topography is analyzed in further detail in Section 3.6.
The properties surrounding GLNC are characterized by agricultural land, low-density residential areas, and forested areas. The northern portion of GLNC is bordered by Belford Road. The eastern and southern borders abut forested and agricultural lands. CSX Railway railroad tracks run north to south along the western border of GLNC.

Vegetation within GLNC consists primarily of landscaped grasses including Kentucky bluegrass and Kentucky rye grass. Ornamental and shade trees are also present at GLNC, including Locus trees and other native, non-invasive vegetation. The Phase 1 cemetery, in the northwestern and central portions of GLNC, is characterized as having professionally maintained and manicured open grass, with park-like areas surrounding the developed gravesite sections. The primary landscape materials are turf, flat burial markers, shade and ornamental trees, shrubs, groundcovers, perennials, and bulbs. The approximately 120-acre Fagan Lake located in the center of GLNC is visible from most areas of the cemetery and adds to the aesthetic value of the landscape. There are also agricultural fields that have been leased to a soybean farmer in the Phase 2 expansion area and in other undeveloped portions of the GLNC property.

Gravesites are accessed by visitors and staff via a network of paved primary and secondary roads. There are also smaller unpaved service roads used by maintenance staff.

Existing structures at GLNC include the combination PIC/Administrative Building, two committal service shelters, the maintenance complex and maintenance yard, an honor guard building, the assembly area, and a storage shed at the soil stockpile area.

The overall appearance of GLNC is aesthetically pleasing and resembles a park-like atmosphere within a National Shrine setting.

3.2.2 Environmental Consequences

3.2.2.1 Proposed Action

Construction. During construction of the Phase 2 expansion, construction-related equipment would be present in the western central portion of the cemetery, and on cemetery roadways. Construction would require the presence and operation of heavy construction equipment used for grading, roadway paving, and other minor improvements. The heavy equipment phase of construction is anticipated to require no more than a total of 18 months and would not necessarily be one continuous period. The presence of heavy equipment and unfinished stages of site preparation and construction would temporarily impact the visual quality of the western central portion of the cemetery. However, there are no existing burial sections or publicly accessible areas within this portion of the cemetery, so construction is unlikely to be visible to visitors. Construction may be visible from the existing columbarium complex adjacent to Fagan Lake; however, privacy fencing would be installed around the entire construction site to prevent adverse aesthetics impacts to visitors of GLNC.

Land clearing and grading activities would expose underlying soils and increase the potential for fugitive dust generation to the air and mud/dirt on the cemetery roadways and Belford Road, which could lead to nuisance concerns regarding the construction activities at GLNC. To minimize these potential adverse impacts, the construction contractor would implement industry-standard construction BMPs to limit fugitive dust generation and tracking mud/dirt onto roadways. These BMPs include using water trucks for dust suppression, brushing loose soil off construction vehicle tires before leaving the construction site, and installation of routinely inspected and maintained
gravel pads at the construction exits to further prevent tracking of loose soil onto roadways. Following grading, the contractor would plant native, non-invasive, vegetation on exposed soils. Therefore, the Proposed Action construction activities would have a short-term, direct, less-than-significant adverse impact on aesthetics.

**Operation.** Operation of the Phase 2 cemetery would provide direct, long-term, moderately beneficial aesthetic effects within the property. The Proposed Action would extend GLNC’s park-like appearance to an area currently leased as a soybean field; the area would include professionally maintained landscaped grounds, winding roadways, and peaceful spaces for families and visitors to pay their respects.

Operations within the expansion area would include regularly scheduled professional landscape maintenance to ensure the upkeep of the park-like appearance of the cemetery grounds and associated physical infrastructure. These maintenance activities would be similar to existing maintenance that occurs daily at the Phase 1 cemetery and would not cause any additional adverse aesthetic effects. Additionally, maintenance activities would occur on a schedule that limits potential disruptions to committal services.

The Proposed Action would also include improvements to the existing assembly area, roads, signage, and site furnishings including standardizing signage, replacing trash and flower vase receptacles, and installing new benches. New benches at the existing and new committal service shelters will match the style and design of the existing benches to provide uniformity.

Overall, these site improvements would increase the aesthetic value of the natural and built environments of GLNC and help to provide a more peaceful and respectful space for families and visitors.

**3.2.2.2 **No Action

Under the No Action alternative, no changes to the current aesthetic or visual character of the grounds would occur at GLNC.

Although the less-than-significant adverse impacts associated with construction of the Proposed Action would be avoided, the beneficial impacts to aesthetics associated with the Proposed Action operations would not occur. Baseline conditions would remain, as described above.

**3.3 Air Quality**

**3.3.1 Regional Climate**

Weather and climate are important influences on air resources. GLNC is located in Holly Township, Oakland County in Southeast MI. GLNC is within the Great Lakes Basin and is approximately 60 miles south of Lake Huron, 67 miles north of Lake Erie, and 130 miles east of Lake Michigan. Southeastern MI has a humid continental climate, defined by the movement of high- and low-pressure systems. Large seasonal temperature variations and highly variable daily weather patterns are common. The Great Lakes provide temperature moderation; long periods of extreme heat and cold are not common. The majority of annual precipitation occurs in the summer months (NOAA, 2019).

The average summer (July) high temperature for Oakland County is 82.0 degrees Fahrenheit (°F) and the average winter (January) low temperature is 17.0°F. Oakland County receives approximately 33 inches of rain per year and an average of 36 inches of snow per year. The wettest
month is June with an average of 3.52 inches of precipitation, and the driest month is January with an average of 1.96 inches of precipitation (NOAA, 2019).

3.3.2 Air Quality Standards

*National Ambient Air Quality Standards.* The *Clean Air Act* (CAA) and its subsequent amendments required the U.S. Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) for pollutants that may endanger public health or welfare. The USEPA has promulgated primary and secondary NAAQS for six criteria pollutants; carbon monoxide, nitrogen dioxide, ozone, lead, particulate matter (PM) including particulate matter sized 10 micrometers or less (PM$_{10}$) and particulate matter sized 2.5 micrometers or less (PM$_{2.5}$), and sulfur dioxide. Primary standards set limits to protect public health and secondary standards set limits to protect public welfare. The CAA also gives the authority to states to establish air quality rules and regulations stricter than the federal standards.

The CAA requires each state to develop State Implementation Plans (SIPs) to be implemented by the state and approved by the USEPA. SIPs describe how states implement, maintain and enforce the NAAQS.

Oakland County is under the jurisdiction of the Michigan Department of Environment, Great Lakes, and Energy (EGLE) and falls within USEPA Air Quality Control Region (AQCR) 123. The USEPA defines AQCRs, which are used to evaluate compliance with the NAAQS per the CAA. GLNC is specifically located within the Metropolitan Detroit-Port Huron Intrastate AQCR. Michigan has adopted the USEPA NAAQS.

The General Conformity Rule (GCR) (CAA Part 176(c)(4)) applies to all federal actions in nonattainment or maintenance areas. This rule requires that any federal action meet the requirements of a SIP or federal implementation plan. More specifically, CAA conformity is ensured when a federal action would not cause a new violation of the NAAQS; contribute to an increase in the frequency or severity of violations of NAAQS; or delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS. AQCRs that comply with the NAAQS are designated “attainment” areas by the USEPA, while areas where the standards are not met are designated as “non-attainment” areas.

As of May 01, 2019, Oakland County was in attainment for all criteria pollutants except for 8-Hour Ozone. Oakland County is in marginal non-attainment for 8-Hour Ozone under the 2015 requirements.

*Greenhouse Gas Emissions.* Greenhouse gases (GHG) are gaseous emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. The most common GHGs emitted from human activities include carbon dioxide (CO$_2$), methane, and nitrous oxide. GHGs are primarily produced by the burning of fossil fuels and through industrial and biological processes. On September 22, 2009, the USEPA issued a final rule for mandatory GHG reporting from large GHG emissions sources in the U.S. (USEPA, 2009b). The purpose of the rule is to collect comprehensive and accurate data on CO$_2$ and other GHG emissions that can be used to inform future policy decisions. In general, the threshold for reporting is 25,000 metric tons or more of CO$_2$ equivalent GHG emissions per year; however, that excludes mobile source emissions.
3.3.3 Existing Emissions Sources

Current emissions sources at GLNC include gas-powered vehicles and equipment used to maintain the cemetery grounds, and staff and visitor vehicles.

3.3.4 Sensitive Receptors

CEQ’s NEPA regulations require evaluation of the degree to which the proposed action affects public health (40 CFR 1508.27). Children, elderly people, and people with illnesses are especially sensitive to the effects of air pollutants; therefore, hospitals, schools, convalescent facilities, and residential areas are sensitive receptors for air quality impacts, particularly when located within one mile from the emissions source. There are no schools, hospitals, or religious institutions located within one mile of GLNC (USEPA, 2019).

3.3.5 Environmental Consequences

3.3.5.1 Proposed Action

Construction. Construction of the Phase 2 expansion would require approximately 18 months of earthwork for land clearing; grading; construction of interment areas, connecting roadways, and associated infrastructure improvements. Particulates are the main air pollutant of concern from construction projects. Construction activities would generate both coarse and fine particulate emissions, primarily during land clearing and grading. The amount of particulate emissions can be estimated from the amount of ground surface exposed, the type and intensity of activity, soil type and conditions, wind speed, and dust control measures used.

Total suspended particulates were calculated using the emission factor for heavy construction activity operations from “AP-42, Compilation for Air Pollutant Emission Factors” (USEPA, 1995), to provide a conservative estimate of PM emissions. Estimates are shown in Table 1.

<table>
<thead>
<tr>
<th>Total Area</th>
<th>Exposed Area</th>
<th>Construction Duration</th>
<th>Emission Factor¹</th>
<th>Control Efficiency</th>
<th>Total Suspended Particulate Emissions</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 acres</td>
<td>30 acres</td>
<td>24 months</td>
<td>1.2 tons/acre/month</td>
<td>80%</td>
<td>86.4 tons/year</td>
</tr>
</tbody>
</table>

Notes:

¹ Emission factor for Heavy Construction Operations (USEPA, 1995)

Non-road construction vehicles would emit criteria pollutants during construction of the expansion. Criteria pollution emissions from construction equipment were calculated assuming the use of six backhoes, two graders, and two bulldozers operating for approximately eight hours per day for a total of 522 weekdays. Emissions were estimated using “Off-Road – Model Mobile Source Emission Factors” from the California South Coast Air Quality Management District (SCAQMD, 2014) because Michigan and federal USEPA emission factors are not available. Table 2 through 4 show estimated annual emissions, projected equipment operating hours, and equipment emission factors, while Table 5 shows the total emissions for the 18-month construction period. Emissions of Sulfur Oxides (SOₓ), Nitrous Oxides (NOₓ), Volatile Organic Compounds (VOC), carbon monoxide (CO), and lead are below de minimis thresholds; therefore, a General Conformity determination is not required.
Table 2. Estimate of Annual Non-Road Emissions of Criteria Pollutants During Construction of the Proposed Action

<table>
<thead>
<tr>
<th>Criteria Pollutant¹</th>
<th>SOₓ</th>
<th>NOₓ</th>
<th>VOCs³</th>
<th>CO</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emissions (tons/year)²</td>
<td>0.0185</td>
<td>8.7098</td>
<td>1.2687</td>
<td>7.1887</td>
<td>0.3831</td>
</tr>
<tr>
<td>de minimis level (tons/year)</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>25</td>
</tr>
</tbody>
</table>

Notes:
1. PM emissions from non-road construction vehicles are included in the general construction emissions factor applied in the estimates in Table 3, and non-road emissions of PM are therefore not included in this table.
3. VOCs are equivalent to Reactive Organic Gases (ROG) for calculating non-road construction equipment emissions.

Table 3. Estimated Total Operational Hours for Construction Equipment

<table>
<thead>
<tr>
<th>Equipment Type</th>
<th>Number</th>
<th>Hours/Day</th>
<th>Total Days</th>
<th>Total Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grader</td>
<td>2</td>
<td>8</td>
<td>522</td>
<td>8,352</td>
</tr>
<tr>
<td>Tractors/Loaders/Backhoes</td>
<td>6</td>
<td>8</td>
<td>522</td>
<td>25,056</td>
</tr>
<tr>
<td>Rubber Tired Dozers</td>
<td>2</td>
<td>8</td>
<td>522</td>
<td>8,352</td>
</tr>
</tbody>
</table>

Table 4. SCAB³ Fleet Average Emission Factors (Diesel)

<table>
<thead>
<tr>
<th>Equipment¹ and Chemical</th>
<th>ROG (lbs/hr)</th>
<th>CO (lbs/hr)</th>
<th>NOx (lbs/hr)</th>
<th>SOx (lbs/hr)</th>
<th>PM² (lbs/hr)</th>
<th>CO₂ (lbs/hr)</th>
<th>CH₄ (lbs/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graders</td>
<td>0.0919</td>
<td>0.5765</td>
<td>0.5823</td>
<td>0.0015</td>
<td>0.0280</td>
<td>133.0000</td>
<td>0.0083</td>
</tr>
<tr>
<td>Tractors/Loaders/Backhoes</td>
<td>0.0436</td>
<td>0.3616</td>
<td>0.2744</td>
<td>0.0008</td>
<td>0.0134</td>
<td>66.8000</td>
<td>0.0039</td>
</tr>
<tr>
<td>Rubber Tired Dozers</td>
<td>0.2118</td>
<td>0.8006</td>
<td>1.5773</td>
<td>0.0025</td>
<td>0.0630</td>
<td>239.0000</td>
<td>0.0191</td>
</tr>
<tr>
<td>Total Tons</td>
<td>0.0919</td>
<td>0.5765</td>
<td>0.5823</td>
<td>0.0015</td>
<td>0.0280</td>
<td>133.0000</td>
<td>0.0083</td>
</tr>
</tbody>
</table>

Notes:
1. Composite emission factors used; Emission factor year 2020.
2. Combined PM₂.₅ and PM₁₀.
3. South Coast Air Basin

Table 5. Total Criteria Pollutant Emissions from Non-Road Construction Vehicles

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Total Hours</th>
<th>Chemical (total pounds)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ROG</td>
<td>CO</td>
</tr>
<tr>
<td>Graders</td>
<td>8,352</td>
<td>767.55</td>
</tr>
<tr>
<td>Tractors/Loaders/Backhoes</td>
<td>25,056</td>
<td>1,092.44</td>
</tr>
<tr>
<td>Rubber Tired Dozers</td>
<td>8,352</td>
<td>1,768.95</td>
</tr>
<tr>
<td>Total Pounds</td>
<td>--</td>
<td>3,628.94</td>
</tr>
<tr>
<td>Total Tons</td>
<td>--</td>
<td>1.81</td>
</tr>
</tbody>
</table>

On-road construction vehicles that would be active during the construction phase include material delivery trucks and tractor trailers used for transporting off-road heavy equipment. Material deliveries would be consolidated to the greatest extent practical, thereby reducing the number of trips to and from the site. Heavy equipment transported to the site would remain staged there until it is no longer needed, also reducing on-road vehicle trips.
While the estimated number of on-road construction vehicles anticipated to travel to and from GLNC during the construction phase has not been calculated, the operating hours and emissions generated would be less than those associated with the off-road construction equipment. Therefore, on-road construction equipment emissions would be negligible and would not increase the overall construction emissions above the General Conformity *de minimis* thresholds.

Dust generated by construction activities could have an adverse impact on air quality if not minimized. To prevent dust generation, the following measures would be incorporated into the Proposed Action.

- Implement dust suppression methods to include application of water and construction scheduling (avoid earthwork during extremely windy and dry periods or when there is an emergency weather advisory).
- Stabilize exposed soil with native, non-invasive vegetation or mulching to minimize erosion and potential dust generation.
- Construction vehicles traveling on paved roads within GLNC and local roadways would follow posted speed limits to minimize dust generated by vehicles and equipment during transit.
- On unpaved surfaces at the construction site, vehicle speeds would be maintained at or below 5 miles per hour to prevent dust generation of any exposed soil. Additionally, should any vehicles transport soil to or from the construction site, the soil would be covered with haul tarps.
- Construction activities would be visually monitored on a daily basis, particularly during extended periods of dry weather when there is increased potential for dust generation. During these periods, dust control measures would be implemented more frequently, if warranted.

To further minimize construction emissions, engine idling would be limited to less than five minutes, and USEPA-recommended diesel controls would be implemented to the extent practicable, including the use of clean diesel through add-on control technologies such as diesel particulate filters and diesel oxidation catalysts, repowers, or newer, cleaner equipment.

Therefore, construction of the Proposed Action would have a short-term, direct, negligible, less-than-significant adverse impact on air quality.

Management practices to limit and further reduce potential construction-related impacts are summarized in Section 5.0 in this SEA.

**Operation.** Operational sources of air emissions would be generated from visitors driving vehicles through the Phase 2 cemetery expansion, and from maintenance vehicles used for mowing and burials (e.g. backhoes, utility vehicles). The Proposed Action would result in an increase in the number of funeral services and visitations, both requiring vehicles, to GLNC over the next decade. This increase in visitor and staff vehicle activity would result in a negligible increase to overall emissions in the region. However, by extending the longevity of GLNC, funeral services and visitations could continue to occur locally, avoiding the need for vehicles to travel longer distances to reach another National Cemetery outside of the Detroit metropolitan area. Reducing emissions from visitors’ vehicles would have a beneficial but negligible impact on air quality in the region.
Therefore, overall operation of the Proposed Action would result in long-term, direct, negligible adverse impacts on air quality.

3.3.5.2 No Action

Under the No Action alternative, there would be no short-term changes in air quality compared to current conditions. However, once the burial capacity of the Phase 1 cemetery was reached, vehicle emissions associated with visitors and families would begin to increase over a longer term because these groups would be required to travel greater distances to reach a National Cemetery with burial capacity that is located outside of the Detroit metropolitan area.

3.4 Geology, Topography, and Soils

3.4.1 Existing Environment

3.4.1.1 Geology

GLNC is located in the Lower Peninsula of Michigan. The Lower Peninsula is made up of Paleozoic and Mesozoic sedimentary rocks of Cambrian and Jurassic age. Geographic and topographic features in the Lower Peninsula were shaped by glacial action. This region is covered by glacial sediments or gravels, sands, and clays. GLNC is located in the Ann Arbor Moraines geologic province. This area consists of broad glacial outwash deposits and mixed glacial till over outwash deposits.

3.4.1.2 Topography

Based on the U.S. Geological Survey (USGS) 7.5-minute topographical map (Davisburg 42083G5, effective 2014), the topography of GLNC is relatively flat with gently rolling hills. Elevations range from 702 feet to 1,027 feet amsl. Areas around Fagan Lake, Round Lake, and other wetland resources are lower in elevation than the remainder of GLNC. In general, slopes range from one to five percent with occasionally steeper slopes at the periphery of developed areas; these steeper slopes may range from 10 to 50 percent.
Figure 4. Topography at Great Lakes National Cemetery
3.4.1.3 Soils

Soil information was obtained from the United States Department of Agriculture – Natural Resources Conservation Service (USDA NRCS, 2019). A list of soils present within the Phase 2 development area is presented in Table 6. Soils mapped within this area by the NRCS are depicted on Figure 5.

Table 6. USDA-NRCS Soils within the Phase 2 Development Area

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in GLNC</th>
<th>Percent in GLNC</th>
</tr>
</thead>
<tbody>
<tr>
<td>10B</td>
<td>Marlette sandy loam, 1 to 6 percent slopes</td>
<td>33.7</td>
<td>71.9%</td>
</tr>
<tr>
<td>25B</td>
<td>Owosso sandy loam, 1 to 6 percent slopes</td>
<td>5.0</td>
<td>10.7%</td>
</tr>
<tr>
<td>10C</td>
<td>Marlette sandy loam, 6 to 12 percent slopes</td>
<td>4.3</td>
<td>9.2%</td>
</tr>
<tr>
<td>11B</td>
<td>Capac sandy loam, 0 to 4 percent slopes</td>
<td>1.5</td>
<td>3.2%</td>
</tr>
<tr>
<td>12</td>
<td>Brookston and Colwood loams</td>
<td>0.9</td>
<td>1.9%</td>
</tr>
<tr>
<td>44C</td>
<td>Riddles sandy loam, 6 to 12 percent slopes</td>
<td>0.9</td>
<td>1.9%</td>
</tr>
<tr>
<td>34B</td>
<td>Kibbie fine sandy loam, 0 to 4 percent slopes</td>
<td>0.5</td>
<td>1.2%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td><strong>46.9</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

1Reported by USDA-NRCS Soil Survey of Oakland County, Michigan (2019).

**Marlette sandy loam, 1 to 6 percent slopes.** This is the primary soil within the Phase 2 development area, and accounts for approximately 71.9 percent of the Phase 2 expansion area. This soil is described as nearly level, well-drained soil formed in loamy ablation till. This soil exists on knolls on moraines and flats on till plains. This soil does not meet hydric criteria. This soil is classified as prime farmland.

**Owosso sandy loam, 1 to 6 percent slopes.** This soil accounts for 10.7 percent of the Phase 2 development area. This soil is described as nearly level, well-drained soil formed in loamy ablation till. This soil exists in knolls on moraines. This soil does not meet hydric criteria. This soil is classified as prime farmland.

**Marlette sandy loam, 6 to 12 percent slopes.** This soil accounts for 9.2 percent of the Phase 2 development area. This soil is described as relatively flat, well-drained soil formed in loamy ablation till. This soil exists on hills on moraines. This soil does not meet hydric criteria. This soil is classified as farmland of local importance.

**Capac sandy loam, 0 to 4 percent slopes.** This soil accounts for 3.2 percent of the Phase 2 development area. This soil is described as nearly level, somewhat poorly drained soils formed in loamy ablation till. This soil exists in drainageways on till plains, and drainageways on moraines. This soil does not meet hydric criteria. This soil is classified as prime farmland if drained.

**Brookston and Colwood loams.** This soil accounts for 1.9 percent of the Phase 2 development area. This soil is described as nearly level, very poorly drained soil formed in loamy ablation till. This soil exists on depressions on lake plains, depressions on till plains, and depressions on...
moraines. This soil meets hydric criteria. This soil is classified as prime farmland if drained.

**Riddles sandy loam, 6 to 12 percent slopes.** This soil accounts for 1.9 percent of the Phase 2 development area. This soil is described as relatively flat, well-drained soil formed in loamy ablation till. This soil exists in hills on moraines. This soil does not meet hydric criteria. This soil is classified as farmland of local importance.

**Kibbie fine sandy loam, 0 to 4 percent slopes.** This soil accounts for 1.2 percent of the Phase 2 development area. This soil is described as nearly level, somewhat poorly drained soil formed in loamy and or sandy glaciofluvial deposits. This soil exists in drainageways on moraines, drainageways on outwash deltas on moraines, flats on outwash deltas on moraines, and flats on moraines. This soil does not meet hydric criteria. This soil is classified as prime farmland if drained.

### National Pollutant Discharge Elimination System

Construction activities which disturb one or more acres of land and have a point source discharge of stormwater to waters of the United States are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit. The U.S. Environmental Protection Agency (EPA) delegated authority to Michigan to administer the NPDES program in October 1973.

In Michigan, construction activities which disturb one or more acres of land and have a point source discharge of storm water to waters of the state including streams, rivers, lakes and wetlands, are required to obtain a NPDES permit from the EGLE Water Resources Division (WRD). The WRD has adopted a “Permit-by Rule” (Rule 2190, promulgated under Part 31 of the Michigan Natural Resources and Environmental Protection Act [NREPA]) process in which the permitting process is dependent upon the applicant first obtaining a Soil Erosion and Sediment Control (SESC) permit from the appropriate permitting agency.

For sites disturbing five or more acres, the permittee must obtain a Part 91 permit under Part 91, Soil Erosion and Sedimentation Control, of the NREPA. Part 91 permits are administered and enforced by various state, county, and local governmental agencies. In Holly Township, Part 91 permits are administered and enforced by the Oakland County Water Resources Commission (OCWRC).

The Proposed Action disturbs five or more acres; accordingly, VA would submit the Part 91 permit application to OCWRC for review and approval. Once a Part 91 permit is obtained, VA would submit an application to WRD for a Notice of Coverage (NOC) in order to commence construction.

### Prime and Unique Farmland

Farmland in the United States is protected by the Farmland Protection Policy Act (FPPA) (7 USC 4201) to maintain agricultural production capacity. NRCS implements the policies associated with FPPA. The NRCS uses the farmland classification to identify soils according to their suitability for producing food, feed, fiber, forage, and oilseed crops. The FPPA is intended to minimize the impact of federal projects on the unnecessary and irreversible conversion of farmland to nonagricultural uses. The FPPA includes protections for prime farmland, unique farmland, and farmland of statewide or local importance.

The NRCS Web Soil Survey indicated that Marlette sandy loam 1 to 6 percent slopes, and Owosso sandy loam fine sand are classified as prime farmland and Marlette sandy loam, 6 to 12 percent
slopes, and Riddles sandy loam are farmlands of local importance (USDA-NRCS, 2019). All of these soils have the potential to be impacted during construction of the Proposed Action. Although these soils may be developed, as part of the NEPA process, VA prepared a Farmland Conversion Impact Rating Form AD-1006 to the NRCS to document the conversion of the soils within the proposed Phase 2 expansion area from agricultural to non-agricultural use (a copy of the form is provided in Appendix B).

### 3.4.2 Environmental Consequences

#### 3.4.2.1 Proposed Action

**Geology**

**Construction and Operation.** The Phase 2 expansion would require grading operations associated with roadway realignment and construction, and excavations for pre-placed burial crypts. Placement of preplaced crypts typically requires eight feet of excavation. Depth to bedrock in Oakland County is more than 200 feet. Therefore, no impacts to bedrock are anticipated.

**Topography**

**Construction.** Construction of the Phase 2 expansion would require grading to prepare undeveloped areas for burial sections, roadways, and the new columbarium plaza and committal service shelter.

The topographical slope of individual burial sections would generally be graded to less than six percent, with the bottom of the proposed burial crypts set at approximately eight feet below the final grading elevations. Roads would be pitched at a slope of no greater than 10 percent.

Although these construction grading activities would permanently modify portions of the existing topography of the Phase 2 expansion area, the overall natural undulating topography would be retained to the maximum extent practicable.

Therefore, construction of the Proposed Action would have a long-term, direct, minor adverse impact on topography.

**Operation.** Operation of the Proposed Action would have no further impacts on topography. Inground burials would be performed in crypt fields previously graded during construction. Topographic modifications made during construction would be maintained during operation.

**Soils**

**Construction.** Construction of the Phase 2 expansion could adversely impact native soils through several mechanisms. The primary mechanism is during grading, which would remove the vegetation that otherwise stabilizes the underlying soil. These activities would result in exposed soils within the construction area. Exposed soils that have not been compacted or restabilized with vegetation or hardscape may be susceptible to erosion by wind, temporarily increasing particulate matter in the surrounding air and creating adverse short-term health, visibility, and aesthetic impacts. Additionally, erosion from precipitation can potentially result in off-site discharges of sediment-laden runoff.
Figure 5. Soil Map Units within the Phase 2 Development Area

Legend

Soil Map Units

10B - Marlette sandy loam, 1 to 6 percent slopes
10C - Marlette sandy loam, 0 to 12 percent slopes
11R - Capac sandy loam, 0 to 4 percent slopes
12 - Brookston and Ochroil loams
25B - Owasso sandy loam, 1 to 6 percent slopes
34B - Kilbine fine sandy loam, 0 to 4 percent slopes
44C - Riddles sandy loam, 6 to 12 percent slopes

Phase 2 Development Area
As stated above, VA would obtain a Part 91 permit from OCWRC. Upon attainment of the Part 91 permit, VA would submit an application for a Notice of Coverage to WRD in order to be permitted under NPDES. In order to minimize any potential soil or stormwater impacts VA would also develop and implement a SESC plan in compliance with Part 91 and submit the completed SESC plan to OCWRC for review and approval. The construction contractor would also prepare and implement a stormwater pollution prevention plan (SWPPP) to prevent sedimentation of surface waters. The SESC and SWPPP engineering controls would include the installation and use of silt fencing, synthetic hay bales, specified loading and unloading areas, covering exposed soils during anticipated storm events, and revegetating soils with temporary and/or permanent native, non-invasive vegetation as soon as construction conditions allow.

Construction and operational vehicles and equipment could also accidentally release petroleum-based fluids (diesel, hydraulic fluid) that can degrade soil quality, if the release is not immediately remediated. To avoid such potential releases and impacts, construction equipment would be properly maintained in good working order and equipped with emergency spill kits. This would ensure that construction contractors are prepared to respond to an emergency release of petroleum-based fluids, contain the release, and prevent impacts to soil from occurring. Additionally, construction equipment would be refueled in designated maintenance areas with impervious surfaces to avoid potential soil impacts from fuel spills.

By utilizing appropriate erosion, sedimentation, and stormwater management BMPs and adhering to the Part 91 permit, impacts from construction of the Proposed Action on soil quality would be minimized to short-term, direct, less-than-significant adverse levels.

**Operation.** During operation, soil impacts would be limited to excavation of topsoil for individual inground burial sites in designated burial sections. Excavated soil would be temporarily stockpiled and returned to the burial site from which it was obtained, and then sodded to prevent erosion. Any excess soil would be immediately removed from the interment area and stockpiled at the existing GLNC spoils area, where these soils would be vegetated and not subject to further erosion. Additionally, regularly scheduled maintenance of the existing and new stormwater management systems would be performed to ensure that the systems are functioning properly, such that stormwater is collected, and soils are not eroded by stormwater runoff.

As mentioned in Section 3.4.1.3, soils within the Phase 2 expansion area are designated as prime farmland and farmland of local importance. This land would be permanently converted into landscaped cemetery grounds as part of the Proposed Action. VA would submit the Farmland Conversion Impact Rating Form AD-1006 to the NRCS to document the conversion of these soils from agricultural to non-agricultural use.

Therefore, operation of the Proposed Action would have a short-term and long-term, direct, negligible adverse impact on soils.

**3.4.2.2 No Action**

No changes to the site would occur from implementation of the No Action alternative; therefore, no impacts to geology, topography, or soils would occur. Baseline conditions would remain, as described above.
3.5 Cultural Resources

3.5.1 Existing Environment

Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA) (Pub. L. 89-655, 16 USC 470 et seq.), ensures that federal agencies consider cultural resources, defined as any prehistoric or historic district, site, building, structure, or object eligible for inclusion on the National Register of Historic Places (NRHP), in their proposed programs, projects, and actions prior to initiation.

Procedures for NHPA Section 106 compliance require federal agencies to identify historic properties within the proposed project’s area of potential effect (APE)3 (36 CFR 800.4). The Area of Potential Effect (APE) for the Proposed Action includes the approximately 30-acre Phase 2 expansion area. The APE is the geographical area or areas within which an undertaking may cause changes to the character or use of historic properties. Cultural resources are generally defined as the physical remains of a people’s way of life and include historical architecture and archaeology. The baseline age established by the NHPA for historic resources is 50 years of age or older. Although GLNC is not 50 years of age, the National Park Service (NPS) has determined that all National Cemeteries are exceptionally significant places that are eligible for listing in the NRHP. However, the NPS has provided guidance that unimproved portions of a National Cemetery that have only been set aside for future use and not ready to receive burials are not eligible for the NRHP.

GLNC is located approximately 50 miles northwest of downtown Detroit, in Holly Township, Oakland County. The cemetery borders Fagan Lake, and is located on a portion of a land grant from the Federal Government to Terrance Fagan in 1836. Historically, the property served as farmland until it was acquired by the National Cemetery Administration in 2002.

3.5.2 Section 106 Consultation

In 2004, Phase I and Phase II archaeological surveys were conducted within the Phase 1 area and the northern portions of what is now the proposed Phase 2 expansion area at GLNC. The investigations consisted of background research, pedestrian reconnaissance, geomorphological evaluation, and archaeological subsurface surveys. Subsurface surveys in the Phase 1 and northern portions of the Phase 2 expansion areas recovered 613 artifacts and identified three prehistoric sites, three historic sites, eight prehistoric isolated finds, and one historic isolated find (Figures 3 and 4). One site, 20OK487, was recommended eligible for the NRHP, and a second site, 20OK488, was recommended potentially eligible but not evaluated because VA has committed to preserving it in place. No further investigation was recommended for the other identified cultural resources.

In a letter dated November 2, 2004, the MI State Historic Preservation Office (SHPO) concurred with VA’s findings that site 20OK487 was eligible and site 20OK488 was potentially eligible for listing in the NRHP and suggested avoiding the sites in all development plans. These sites will not be affected by the proposed Phase 2 expansion area.

One prehistoric site, 20OK492, was located within the proposed Phase 2 expansion area and determined not eligible. Based on background research, VA concluded that the southern portion of the Phase 2 expansion area had a moderate to high potential for containing archaeological resources. Accordingly, VA conducted a Phase IB archaeological survey in the remaining Phase 2 expansion area between 9 May and 17 May 2019 to identify archaeological sites that may exist within this area.
The Phase IB archaeological survey covered approximately 46 acres and included background research, project area reconnaissance, and Phase I subsurface shovel testing at 15-meter intervals. All work was conducted in accordance with the guidelines and specifications established in the Secretary of the Interior’s Standards and Guidelines for Identification and Archaeology and Historic Preservation: Secretary of the Interior’s Standards and Guidelines, Standards, and Guidelines for Identification, the NHPA, and the Michigan Office of the State Archaeologist.

The survey did not identify or encounter any new or previously identified archaeological resources within the proposed Phase 2 expansion area. Accordingly, VA determined that the Phase 2 expansion would not result in any adverse effects to cultural resources or historic properties within the APE. VA submitted this report to the MI SHPO on 3 July 2019 with the “SHPO Application for Section 106 Review” for review and concurrence with the effect determination. On August 15, 2019, the MI SHPO provided written concurrence with the determination that no historic properties would be affected within the APE for the Proposed Action (a copy of the letter is provided in Appendix B).

The full results of this survey are provided in the survey report in Appendix A of this SEA.

### 3.5.3 Native American Resources and Consultation.

For all federally proposed actions, federal agencies are required to consult with federally recognized Native American Tribes in accordance with NEPA, the NHPA, the Native American Graves Protection and Repatriation Act (NAGPRA), and Executive Order (EO) 13175, consultation and coordination with Indian Tribal Governments.

Nine federally recognized Native American Tribes that may have historical or cultural ties to Oakland County will be contacted as part of the NEPA process for the currently proposed Phase 2 expansion to provide them the opportunity to comment on the Proposed Action. These nine federally-recognized Native American Tribes are the Hannahville Indian Community, Saginaw Chippewa Indian Tribe of Michigan, Sault Ste. Marie Tribe of Chippewa Indians of Michigan, Forest County Potawatomi Community Wisconsin, Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin, Little Traverse Bay Bands of Odawa Indians, Menominee Indian Tribe of Wisconsin, Miami Tribe of Oklahoma, and the Seneca-Cayuga Nation. VA mailed letters to these Native American Tribes on 3 July 2019 to solicit input on the Proposed Action. Copies of correspondence are provided in Appendix B.

### 3.5.4 Environmental Consequences

The Section 106 Criteria for Adverse Effect (36 CFR 800.5) defines an undertaking (action) as having an adverse effect on historic properties if the undertaking would alter, directly or indirectly, any of the characteristics that qualify a property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. The analysis considers potential effects to cultural resources located in and within view of the project area.

#### 3.5.4.1 Proposed Action

**Construction.** Based on the May 2019 Phase IB archaeological survey and cultural resources investigation, no additional cultural resources or archaeological sites were identified within the Phase 2 expansion area. VA will avoid all known archaeological sites in the Phase 2 expansion development plans. Additionally, to minimize the potential impact on previously unknown
resources during construction, VA would comply with the NHPA, *Archaeological Resources Protection Act of 1979* (ARPA), NAGPRA, *American Indian Religious Freedom Act* (AIRFA), 36 CFR Part 79, and EO 13007 Indian Sacred Sites. Additionally, VA would implement an “Inadvertent Discovery” plan. Under this plan, if prehistoric or historic artifacts that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, VA would cease all activities involving subsurface disturbance in the vicinity of the discovery. Should human remains or other cultural items, as defined by NAGPRA, be discovered during project construction, the construction contractor would immediately cease work until VA, a qualified archeologist, the MI SHPO, and the nine federally recognized Native American Tribes are contacted to properly identify and appropriately treat discovered items in accordance with applicable state and federal law(s).

These management measures would ensure that the Proposed Action would have no adverse effect on any cultural or historic resources. These management practices to avoid potential construction and operational impacts are summarized in Section 5.0 in this SEA.

**Operation.** Excavation for individual burial sites poses the same possibility of inadvertent discovery of human remains or cultural resources described above for construction impacts. In the unlikely event that human remains or cultural resources are encountered during operation, the aforementioned “Inadvertent Discovery” plan would be immediately implemented. The plan would require that all ground-disturbing activities cease, and the construction contractor would immediately contact VA for guidance on next steps. Since the Phase IB archaeological surveys likely discovered the majority of cultural resources present at GLNC, the likelihood of an inadvertent discovery is anticipated to be low.

Therefore, potential impacts on cultural resources would be maintained at less-than-significant adverse levels.

### 3.5.4.2 No Action

No changes to the Proposed Action areas would occur from implementation of the No Action Alternative; therefore, no impacts to cultural resources would occur. Baseline conditions would remain, as described above.

**3.6 Wildlife and Habitat**

#### 3.6.1 Existing Environment

This section discusses the wildlife and habitat that may be present in the Proposed Action area, including vegetation communities, terrestrial and aquatic wildlife, and special status species.

##### 3.6.1.1 Vegetation Communities

Primary vegetation communities in the Proposed Action area include maintained lawn, agricultural fields, and lowland deciduous forest. Agricultural fields occupy the southern portion of the site, near the existing columbarium complex. These fields were previously used as hayfields, pastures, and crop cultivation. Current vegetation occupying these fields include grasses and herbs, such as smooth brome (*Bromus inermis*), meadow fescue (*Festuca pratensis*), Timothy-grass (*Phleum pratense*), orchard grass (*Dactylis glomerata*), quack grass (*Agropyron repens*), alfalfa (*Medicago sativa*), red clover (*Trifolium pratense*), fleabane (*Erigeron spp.*), and common ragweed (*Ambrosia artemisiifolia*).
Wetlands are present in drainageways and isolated basins within these agricultural fields. Dominant wetland vegetation includes grasses and herbs such as reed canary grass (*Phalaris arundinacea*), cattails (*Typha* spp.), sedges (*Carex* spp.), and bulrushes (*Scirpus* spp.). Scattered shrubs and/or small trees, including black willow (*Salix nigra*), box-elder (*Acer negundo*), and cottonwood (*Populus deltoides*), may be present as well. See Section 3.10 for a more detailed discussion of wetlands. Aquatic vegetation in Round Lake and Fagan Lake include bulrushes (*Scirpus* spp.), bur-reed (*Sparganium* sp.), cattails, yellow pond lily (*Nuphar* sp.), and water lily (*Nymphaea odorata*).

Areas of maintained lawn and turf grass border existing roads and structures on the site, with the largest tracts in the center and northern areas, on either side of the Assembly Area. Forested areas are present along the boundaries of the GLNC site, primarily in the southwestern portion bordering an agricultural field and an internal access road, as well as on the eastern side of the columbarium complex, surrounding Round Lake and Fagan Lake. Forested areas include white ash (*Fraxinus americana*), American elm (*Ulmus americana*), red oak (*Quercus rubra*), basswood (*Tilia americana*), silver maple (*Acer saccharinum*), and white oak (*Quercus alba*).

### 3.6.1.2 Wildlife

The variety of vegetation types at GLNC provides diverse habitats for wildlife. The landscaped areas and agricultural fields provide foraging and nesting sites for songbirds, small mammals, amphibians, and reptiles, while the forested areas on the site are able to support larger species. Previous surveys conducted at the site noted red-winged blackbirds (*Agelaicus phoeniceus*), bobolink (*Dolichonyx orizivorus*), red-tailed hawk (*Buteo jamaicensis*), turkey vultures (*Cathartes aura*), and white-tailed deer (*Odocoileus virginianus*).

Fagan Lake and Round Lake provide suitable habitat for aquatic wildlife. Fagan Lake is large and deep enough to support a number of freshwater species, including bass (*Micropterus* spp.), Northern pike (*Esox lucius*), and other gamefish. Waterfowl, including mallard ducks (*Anas platyrhynchos*), have been observed in the area.

### 3.6.1.3 Special Status Species

Special status species include those threatened and endangered (T&E) plants and animals protected by the federal government pursuant to the Endangered Species Act (ESA) of 1973 (16 U.S.C 1531 et seq) as amended, as well as state-listed species managed by the State of Michigan pursuant to the Endangered and Threatened Species Act of Michigan (M.C.L.A. 324.36501-07). Federally listed species are classified as endangered or threatened; state-listed species are classified as endangered, threatened, and species of special concern. This section also discusses migratory birds, as protected under the Migratory Bird Treaty Act (MBTA), and bald eagles, as protected under the Bald and Golden Eagle Act (BGEPA) of 1940.
3.6.1.3.1  **Threatened & Endangered Species**

Based on the US Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC) database and the Michigan Natural Features Inventory, there are seven federally listed and eight state-listed species that have the potential to occur in Holly Township, Oakland County, MI. A list of these species and the potential presence of suitable habitat at GLNC is provided in Table 7.

**Table 7. Federally and State Listed Species with Potential to Occur at GLNC**

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Federal Status</th>
<th>State Status</th>
<th>Habitat Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern massasauga</td>
<td>Sistrurus catenatus</td>
<td>T</td>
<td>SC</td>
<td>No</td>
</tr>
<tr>
<td>Indiana bat</td>
<td>Myotis sodalis</td>
<td>E</td>
<td>E</td>
<td>Yes, Summer</td>
</tr>
<tr>
<td>Northern long-eared bat</td>
<td>Myotis septentrionalis</td>
<td>T</td>
<td>SC</td>
<td>Yes, Summer</td>
</tr>
<tr>
<td>Poweshiek skipperling</td>
<td>Ourisima poweshiek</td>
<td>E</td>
<td>T</td>
<td>No</td>
</tr>
<tr>
<td>Prairie white-fringed orchid</td>
<td>Platanthera leucophaea</td>
<td>T</td>
<td>E</td>
<td>No</td>
</tr>
<tr>
<td>Rayed bean (freshwater mussel)</td>
<td>Villosa fabalis</td>
<td>E</td>
<td>E</td>
<td>No</td>
</tr>
<tr>
<td>Snuffbox (freshwater mussel)</td>
<td>Epioblasma triquetra</td>
<td>E</td>
<td>E</td>
<td>No</td>
</tr>
<tr>
<td>White lady slipper</td>
<td>Cypripedium candidum</td>
<td>--</td>
<td>T</td>
<td>No</td>
</tr>
</tbody>
</table>

**Notes:**
E – Endangered  
T – Threatened  
SC – Special Concern

On 10 May 2019, a pedestrian survey of the proposed Phase 2 expansion area was conducted to identify federally and state-listed protected species and their habitat with the potential to occur in the Phase 2 expansion area (AECOM, 2019). A copy of this report is provided in Appendix A. Of the seven federally listed and eight state-listed species potentially occurring at GLNC, only the Indiana bat and the northern long-eared bat (NLEB) have potentially suitable habitat on site.

**Indiana Bat**

Indiana bats are federally and state-listed as “endangered.” The Indiana bat is a small, dullish-gray, migratory bat with a wingspan of 9 to 11 inches. In Michigan, summering Indiana bats typically roost in dead or dying trees associated with riparian, bottomland, and upland forests from approximately 1 April to 15 October. During summer, males roost alone or in small groups, while females roost in larger groups of up to 100 bats or more. Indiana bats also forage in or along the edges of forested areas. During winter, Indiana bats hibernate in caves or abandoned mines. Indiana bats require cool, humid, stable temperatures under 50° F, but above freezing, during hibernation. Very few caves within the range of the species have these conditions so the species tends to hibernate in large colonies with 20,000 to 50,000 individuals (USFWS, 2006). Threats to this species include habitat loss, pesticide usage, and disease (e.g., white-nose syndrome).

No potential winter habitat (i.e., caves or mines) for Indiana bats exists within the expansion area; however, potential summer roosting habitat in lowland deciduous forest cover was identified during the pedestrian survey on 10 May 2019 (AECOM, 2019).

**Northern Long-eared Bat**

The NLEB is federally listed as “threatened” (USFWS, 2019f) and state-listed as “special concern” (MNFI, 2019f). The NLEB is a medium-sized, migratory bat with a wingspan of 9 to 10 inches
and long ears (USFWS, 2019e). Behavioral patterns of the NLEB are similar to that of the Indiana bat. After hibernating in caves or abandoned mines during the winter, the NLEB migrates to its summer habitat to roost. It prefers wooded areas, roosting under loose tree bark on dead or dying trees (USFWS, 2015b). Threats to this species include habitat loss, pesticide usage, and disease (e.g., white-nose syndrome).

No potential winter habitat (i.e., caves or mines) for NLEB exists within the expansion area; however, potential summer roosting habitat is present in forested areas on the site, as identified during the pedestrian survey on 10 May 2019 (AECOM, 2019).

### 3.6.1.3.2 Migratory Birds

USFWS administers the MBTA (16 U.S.C. §§ 703-712, as amended), which protects migratory bird species in the United States. The MBTA prohibits, unless under permit, to pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, import, export, or transport of any native migratory bird, nests, eggs, or any bird, nest, or egg parts. Additionally, EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, directs federal agencies to implement the MBTA.

Seven migratory bird species, identified in the IPaC report, have the potential to occur within or near the proposed Phase 2 expansion area: black-billed cuckoo (*Coccyzus erythropthalmus*), bobolink, long-eared owl (*Asio otus*), red-headed woodpecker (*Melanerpes erythrocephalus*), rusty blackbird (*Euphagus carolinus*), willow flycatcher (*Empidonax traillii*), and wood thrush (*Hylocichla mustelina*). The proposed expansion area is located within the Mississippi Flyway, a main migratory route generally following the path of the Mississippi River and its tributaries. Approximately 325 species utilize this flyway to travel from breeding grounds in Canada and the northern United States to wintering grounds along the Gulf of Mexico and in Central and South America (National Audubon Society, 2019). Potentially suitable stopover habitat is present on-site due to the nearby Fagan Lake and Round Lake, as well as different vegetation communities (e.g., maintained lawn, agricultural field, and lowland deciduous forest). These factors combined provide likely sources of food, water, and nesting habitat for migratory species.

### 3.6.1.3.3 Bald and Golden Eagle Protection Act

Bald eagles are protected under the BGEPA, which prohibits the take, possession, transport, or sale of live or dead eagles and their parts, nests, or eggs unless authorized by permit. Habitat for the bald eagle (*Haliaeetus leucocephalus*) primarily consists of mature forest in proximity to large bodies of open water for foraging. Large, dominant trees are utilized for nesting sites, typically within one mile of open water. With aerial imagery from 2018, a desktop assessment of the proposed expansion area and surrounding 1-mile buffer revealed several waterbodies large or sufficiently open enough to be considered potential feeding sources for bald eagle, including the nearby Fagan Lake and Round Lake. These waterbodies are present within one mile of the proposed expansion area.

During the pedestrian survey conducted on 10 May 2019, one active bald eagle nest was observed in the wooded area adjacent to Round Lake within 300 feet of the survey area near Fagan Road (approximately 42.848484 E, -83.613230 N) (Figure 6). This nest was established in early 2019 (based on observations by GLNC staff).
3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

Construction. Construction of the Phase 2 expansion would permanently convert approximately 30 acres of current agricultural field into landscaped grounds. As a result, there would be short- and long-term, less-than-significant adverse impacts to vegetation, wildlife, and special status species.

3.6.2.1.1 Wildlife Habitat

Construction activities would require vegetation clearing and grading, resulting in the loss of plant communities and vegetation. The loss of grass, shrubs, and trees would reduce the amount of cover shelter available to wildlife and special status species. During construction, wildlife and special status species would become displaced if their habitats are affected. In addition, construction noise and vibration impacts, as well as human presence, would disturb species and potentially disrupt natural behaviors (e.g., foraging, roosting). However, only the area necessary to establish interment areas, roadways, and other infrastructure, as depicted in the approved Phase 2 development plans, would require development and tree clearing would be limited because the majority of Phase 2 construction will be within previously cleared areas such as the agricultural fields. Displaced individuals would be expected to relocate to nearby suitable habitat. Implementation of avoidance and minimization measures would further reduce the potential for adverse impacts.

While no in-water work would be required for the Phase 2 expansion, potential short-term, less-than-significant adverse impacts to aquatic habitats and species could occur during construction. Land clearing and grading activities would increase sedimentation and runoff into nearby surface waters, temporarily increasing turbidity in Fagan Lake and Round Lake. Increased turbidity would interfere with foraging and breeding behaviors. However, any adverse impacts would be temporary and further minimized through BMPs, such as implementing the SESC plan to reduce soil erosion and utilizing silt curtains and turbidity barriers if necessary.

As construction of the Phase 2 expansion would result in the permanent loss of vegetation and habitat, there would be long-term, less-than-significant adverse impacts on wildlife. Mobile species would be able to avoid disturbed areas, however, and utilize more favorable habitats nearby during and after construction. Landscaped areas and turf grass would also be able to provide some foraging and nesting sites for songbirds and small mammals. To prevent the proliferation of invasive species, landscaped areas would be planted with native grass seeds, particularly in buffer areas between burial sections and transition areas near wetlands and woods.
Figure 6. Bald Eagle Nest Near GLNC
3.6.2.1.2 Threatened & Endangered Species

USFWS recommends implementing seasonal restrictions and avoiding tree clearing from 1 April through 15 October to minimize or avoid impacts to the Indiana bat, and from 1 June to 31 July to avoid prohibited incidental take of NLEBs during the pup season. VA would adhere to these time of year restrictions for tree removal and seek concurrence from USFWS that under this approach the Proposed Action may affect but is not likely to adversely affect the Indiana bat and NLEB. On July 16, 2019, VA initiated information Section 7 consultation with USFWS to obtain concurrence on the effect determination. On August 9, 2019, USFWS issued a response letter stating that, based on VA’s commitment to implement the aforementioned avoidance measures, the Proposed Action is not likely to adversely affect Indiana bats or NLEB (a copy of the correspondence is provided in Appendix B).

Bald Eagles

In early 2019, a pair of bald eagles established a nest near the southeastern border of Round Lake. Under the Proposed Action, a construction trailer would be placed approximately 500 feet from the bald eagle nest adjacent to Round Lake, and an existing roadway approximately 400 feet from the active nest would be repaved. The National Bald Eagle Management Guidelines recommend maintaining a 660-foot buffer around all active bald eagle nests. Although these proposed activities are within the 660-foot buffer, the eagles currently tolerate existing cemetery activities occurring within 50 feet of the nest, including mowing, memorial salutes, vehicular traffic, and/or agricultural activities. All other construction activities, including those occurring in the Phase 2 expansion area, would be approximately 850 feet or further from the nest. Additionally, the existing wooded area where the nest is located would not be cleared or modified in any capacity, and the Phase 2 construction activities occurring within the 660-foot buffer would be temporary and cease after 24 months. VA determined that under this approach there would be no adverse impact to bald eagles. USFWS concurred with VA’s determination; on 5 July 2019, USFWS issued an email stating that with the implementation of VA’s proposed avoidance and minimization measures, the bald eagles would not likely be disturbed by the Proposed Action. A copy of this correspondence is provided in Appendix B.

Migratory Birds

VA would implement Nationwide Conservation Measures, as developed by USFWS, for migratory bird protection. These measures are grouped into three categories: general, habitat protection, and stressor management. General measures include good housekeeping activities to discourage contact with live or deceased individual birds and properly managing waste receptacles to prevent access to birds and its use as forage. Habitat protection can include the establishment of buffers between developed and natural preservation areas and waterways and implementing standard soil erosion and dust control measures. Stressor management measures limit vegetation clearing, introduction of invasive species, artificial lighting, collision risks with buildings and vehicles, entrapment in constructed structures, minimizing artificial noise levels, preventing the release of chemicals to the environment, and minimizing fire risks to suitable habitat.

Operation. Operation of the Phase 2 expansion would have no impact on vegetation, wildlife, or special status species as proposed operations would generally be similar to existing operations at GLNC. Operations would include mowing and maintenance of landscaped grounds, occasional ceremonial rifle salutes, and vehicular traffic. These actions, in addition to constant human
presence, already occur at the GLNC and would not substantially increase or change under the proposed Phase 2 expansion in a measurable way that would cause disturbance to wildlife and their habitat.

3.6.2.2 No Action

Under the No Action Alternative, the expansion would not occur. Environmental conditions would remain as they currently exist, and there would be no impact to vegetation, wildlife, and special status species, or changes in the type or quality of available suitable habitat.

3.7 Noise

3.7.1 Existing Environment

Sound occurs when vibrations that travel through a medium are interpreted by the biological elements of the ear. Noise occurs when sounds become undesirable, unpleasant, or damaging. Noise-sensitive receptors are residences, hospitals, libraries, recreation areas, and religious institutions.

Sound pressure levels are quantified in decibels (dB), which are dependent on both frequency and intensity, and is given a level on a logarithmic scale. The way the human ear hears sound intensity is quantified in A-weighted decibel (dBA), which are level “A” weights according to weighting curves. Sound levels for common activities and construction work are presented in Table 8. Noise levels and durations from these activities would vary depending on the specific equipment being used, and the impact from this noise on a receptor would depend on the distance between the receptor and the source of the noise. Generally, noise levels decrease by approximately 6 dBA for every doubling of distance for point sources (such as a single piece of construction equipment), and approximately 3 dBA for every doubling of distance for line sources (such as a stream of motor vehicles on a busy road at a distance).

The National Institute for Occupational Safety and Health (NIOSH) recommends that individuals working in an environment of 85 dBA or louder for an eight-hour work day limit their exposure to this noise level and wear protective earwear to help manage and prevent hearing loss due to noise exposure.

Table 8. Common Household, Industrial, and Construction Sound Levels

<table>
<thead>
<tr>
<th>Sound Level (dBA)</th>
<th>Common Sounds</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>140</td>
<td>Jet engine</td>
<td>Painful</td>
</tr>
<tr>
<td>130</td>
<td>Near air-raid siren</td>
<td>Painful</td>
</tr>
<tr>
<td>120</td>
<td>Jet plane takeoff, siren</td>
<td>Painful</td>
</tr>
<tr>
<td>110</td>
<td>Chain saw, Thunder, Garbage Truck</td>
<td>Extremely Loud</td>
</tr>
<tr>
<td>100</td>
<td>Hand drill</td>
<td>Extremely Loud</td>
</tr>
<tr>
<td>90</td>
<td>Subway, passing motorcycle</td>
<td>Extremely Loud</td>
</tr>
<tr>
<td>85</td>
<td>Backhoe, Paver</td>
<td>Very Loud</td>
</tr>
<tr>
<td>80</td>
<td>Blow-dryer, kitchen blender, food processor, cement mixer, power saw</td>
<td>Very Loud</td>
</tr>
<tr>
<td>70</td>
<td>Busy traffic, vacuum cleaner, alarm clock</td>
<td>Loud</td>
</tr>
<tr>
<td>60</td>
<td>Typical conversation, dishwasher, clothes dryer</td>
<td>Moderate</td>
</tr>
<tr>
<td>50</td>
<td>Moderate rainfall</td>
<td>Moderate</td>
</tr>
<tr>
<td>40</td>
<td>Quiet room</td>
<td>Moderate</td>
</tr>
<tr>
<td>30</td>
<td>Whisper, quiet library</td>
<td>Faint</td>
</tr>
</tbody>
</table>
3.7.1.1 Noise Receptors

Noise sensitive receptors are defined as properties where frequent human use occurs and where a lowered noise level would be of benefit. These noise sensitive receivers are considered to be residences, hospitals, libraries, recreation areas, churches, and other similar uses. No schools, hospitals, or religious institutions are located within one mile of GLNC (USEPA, 2019). The nearest sensitive receptors to GLNC are low density residences to the north of the cemetery along Belford Road and to the west of the Phase 2 expansion area along North Holly Road.

3.7.1.2 Current Noise Conditions

Noise at GLNC is currently generated during normal operating hours (8 A.M. to 4:30 P.M.) from routine maintenance and operational activities (e.g. mowing, burials); visitor’s driving through the cemetery; and from rifle salutes, which three to seven of which may occur at a committal shelter during Veteran interment ceremonies, at the flag assembly area, or other memorial areas within GLNC. As detailed in Table 9, the A-weighted maximum levels (Lmax dBA) for blanks from rifle salutes at various distances and angles from a source decrease with both angle and distance (VA, 2014b). These sound levels correspond to firing directly (0 degrees) or at different angles to the receptor, and do not account for sound shielding from tree lines, berms, and other buffers; thus, actual sound levels at a receptor site are expected to be lower than those shown. For comparison purposes, speech ranges from approximately 50 to 80 dBA. The nearest of the existing Phase 1 cemetery committal shelters is located approximately 800 meters (0.5 miles) east of residences along North Holly Road and is separated from them by approximately 400 meters (0.25 miles) of cemetery and a partially forested area. The rifle salute sound level potentially experienced at this residential area would be approximately 31-41 dBA. Due to traffic and other industrial agricultural activities, the rifle salute sound would be an infrequent and minor contributor to overall sounds experienced in this area. To date, there have been no noise complaints from residents or cemetery visitors related to operations at GLNC.

Table 9. Azimuth Predicted Noise Levels from Rifle Salutes

<table>
<thead>
<tr>
<th>Distance from Source</th>
<th>A-Weighted Maximum Sound Level (Lmax, dBA), Degrees from Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meters</td>
<td>0°</td>
</tr>
<tr>
<td>50</td>
<td>66-76</td>
</tr>
<tr>
<td>100</td>
<td>60-70</td>
</tr>
<tr>
<td>200</td>
<td>53-63</td>
</tr>
<tr>
<td>400</td>
<td>39-49</td>
</tr>
<tr>
<td>800</td>
<td>31-41</td>
</tr>
<tr>
<td>1600</td>
<td>21-31</td>
</tr>
</tbody>
</table>

The noise profile in the vicinity of GLNC is dominated by vehicles traveling on nearby roadways and operation of agricultural equipment on nearby farms. No other notable noise-generating sources are present in the immediate vicinity of GLNC.

3.7.2 Environmental Consequences

3.7.2.1 Proposed Action

Construction. Construction of the Phase 2 expansion would generate noise from the heavy equipment used for land clearing, grading, road, and infrastructure construction, and from construction workers driving to and from the site.
Noise levels from these activities would vary depending on the duration and type of specific equipment being used, while the impact from this noise on a receptor would depend on how far the receptor is from the noise source. Noise from construction activities varies depending on the type of equipment being used, the area that the action would occur in, and the distance from the noise source. To predict how these activities impact adjacent populations, noise from probable equipment was estimated. For example, construction usually involves several pieces of equipment (e.g., bulldozers and trucks) that can be used simultaneously. Under the Proposed Action, the cumulative noise from the equipment, during a typical day, was estimated to determine the total impact of noise from construction activities at a given distance. Examples of expected cumulative construction noise during daytime hours at specified distances are shown in Table 10.

Table 10. Estimated Noise Levels from Construction Activities

<table>
<thead>
<tr>
<th>Distance from Noise Source in feet (meters)</th>
<th>Estimated Noise Level in dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 (15.2)</td>
<td>90–94</td>
</tr>
<tr>
<td>100 (30.5)</td>
<td>84–88</td>
</tr>
<tr>
<td>150 (45.7)</td>
<td>81–85</td>
</tr>
<tr>
<td>200 (61.0)</td>
<td>78–82</td>
</tr>
<tr>
<td>400 (121.9)</td>
<td>72–76</td>
</tr>
<tr>
<td>800 (243.8)</td>
<td>66–70</td>
</tr>
<tr>
<td>1,200 (365.8)</td>
<td>&lt; 64</td>
</tr>
</tbody>
</table>

As stated in the previous section, the nearest residences are located approximately 800 meters (0.5 miles) west of the Phase 2 expansion area and are separated from it by areas of partial forest, which can help to dampen sound waves. Noise levels would be further minimized by equipping construction equipment with appropriate sound-muffling devices (i.e. from the original equipment manufacturer or better) and limiting engine idling to less than five minutes. Construction work would also be performed during normal weekday operating hours. As a result, noise from construction activities would not be readily discernable over ambient noise levels at this residential area.

To avoid and minimize noise-related disturbances to ongoing memorial services, the construction contractor would coordinate with the GLNC Director prior to mobilizing construction machinery through the Phase 1 cemetery. Additionally, notably loud construction activities would be scheduled to occur when these services are not being conducted, to the extent possible. If a specific construction activity generates noise anticipated to directly impact the current operation of the cemetery, then the activity would occur outside of the normal cemetery operating hours.

Potential impacts of noise from construction equipment on construction workers would be managed and avoided by following Occupational Safety and Health Administration (OSHA) Noise standard (29 CFR 1910.95), which requires employers to have a hearing conservation program in place if workers are exposed to a time-weighted average noise level of 85 dBA or higher over an 8-hour work shift (OSHA, 1981). Accordingly, hearing protectors would be available to workers who may be exposed to sounds at or above 85 dBA.

Therefore, noise generated during construction of the Proposed Action would have a short-term, direct, negligible, less-than-significant adverse impact on off-site receptors and GLNC visitors and workers.

**Operation.** The Proposed Action includes one new committal shelter, where ceremonial rifle
salutes may also occur. Visitor and staff maintenance vehicles (e.g. mowing, pressure washers) would travel into the Phase 2 expansion area, generating noise in this area. However, these noise sources, levels, and temporary durations would be similar to those currently generated at the Phase 1 cemetery; these noises have not resulted in any documented complaints from visitors or nearby receptors. Additionally, the volume of operational noises would be similar to the farm equipment machinery (tractor) currently operated in portion of the proposed Phase 2 expansion area that is leased for agricultural use.

Therefore, the Proposed Action would have a long-term, direct, negligible, less-than-significant adverse impacts on noise conditions.

### 3.7.2.2 No Action

Under the No Action alternative, the Proposed Action would not be implemented. Noise would continue to be generated from ceremonial rifle salutes, grounds maintenance activities, visitors’ vehicles traveling within the Phase 1 cemetery, and farm machinery operating within the agricultural fields where the Phase 2 expansion had been planned.

### 3.8 Land Use

#### 3.8.1 Existing Environment

GLNC is located in Holly Township, Oakland County, MI. The GLNC property is designated as Public/Institutional on the Township of Holly 2018 Land Use Map (Oakland County Economic Development & Community Affairs, 2018) and within an Agriculture Residential (“AGRE”) zoning district. To the north south, and east of GLNC, the predominant land uses are for single family residential areas and an adult memory-care facility. An active railroad line is located along the western border of the GLNC property.

#### 3.8.2 Environmental Consequences

##### 3.8.2.1 Proposed Action

**Construction and Operation.** The Proposed Action would have no impact on land use at or in vicinity of GLNC. The Phase 2 cemetery would be located within the existing boundary of GLNC, in an area already planned and permitted for cemetery use, and would not require or lead to changes in land use in the vicinity of GLNC.

##### 3.8.2.2 No Action

Under the No Action alternative, the Proposed Action development would not occur. Baseline land use conditions would remain, as described above.

### 3.9 Hydrology and Water Quality

#### 3.9.1 Existing Environment

##### 3.9.1.1 Surface Water

This section covers the effects on surface water; a discussion of wetlands and floodplains is presented in Section 3.10. There are two lakes at GLNC. The largest is Fagan Lake, in the north central portion of GLNC. Fagan Lake is approximately 120 acres and is a central aesthetic feature of the cemetery. The second smaller lake at GLNC is Round Lake, an approximately 12-acre lake,
located approximately 350-feet southeast of Fagan Lake. A weir on the western side of Fagan Lake allows surface water to drain into a man-made ditch and flow west, accumulating in a marsh along the western boundary of GLNC. A culvert allows surface water to flow west, under the railroad, into a small stream channel and a small agricultural pond located on private property (outside of GLNC). An approximately 0.3-acre man-made stormwater retention pond is located north of the maintenance building; this pond retains stormwater from the maintenance building and adjacent roadways. An approximately 1-acre pond is located in the southeastern portion of GLNC in an area actively used for agricultural production. There are no other water features, including streams or rivers, within GLNC.

There are three large lakes located east of GLNC; Mud Lake, Strawberry Lake and Gravel Lake. Mud Lake and Strawberry Lake are connected by an approximately 2-mile unnamed stream that flows into Swartz Creek, south of GLNC. Surface waters at and in the proximity of GLNC are depicted in Figure 7.
Figure 7. Surface Water Features at Great Lakes National Cemetery
3.9.1.2 Groundwater

A geotechnical investigation was conducted in July 2018 by ECS Midwest, LLC for the Phase 2 expansion area at GLNC. The investigation encountered groundwater at depths ranging from approximately 5 to 28 feet below the ground surface across the site (ECS Midwest, LLC, 2018). The static long-term groundwater level at the site was estimated to be located at depths ranging from approximately 6 to 12 feet below existing grades (approximately 905 to 911 feet amsl) and likely associated with the water level of Fagan Lake (ECS Midwest, LLC, 2018). There are two groundwater wells located at GLNC within burial section five, however neither of these wells are or will be used as potable water or irrigation water sources.

3.9.2 Environmental Consequences

3.9.2.1 Proposed Action

3.9.2.1.1 Surface Water

Construction. Construction of the Phase 2 expansion, particularly during land clearing and grading, could increase the potential for sedimentation of runoff that, if allowed to reach existing on-site surface water bodies and wetlands, could have an adverse impact on these resources.

To minimize these potential adverse impacts, the Proposed Action would incorporate the following management measures:

- Incorporate the soil erosion BMPs previously described for soils under Section 3.4.2.1.
- The Phase 2 expansion would be designed to comply with USEPA Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under Section 438 of the Energy Independence and Security Act (EISA) (USEPA, 2009a) to the maximum extent technically feasible. EISA Section 438 requires federal developments that exceed 5,000-square feet to maintain or restore pre-development hydrology during post-development conditions to the maximum extent technically feasible using a variety of “green infrastructure” and “low impact development” practices, such as minimizing the creation of new impervious surfaces, directing stormwater runoff to designated storage basins, and allowing precipitation to infiltrate into the ground surface to the maximum extent possible.

Therefore, construction of the Proposed Action would have a short-term, direct, negligible, less-than-significant adverse impact on surface water.

Operation. Operation of the Phase 2 cemetery would generate stormwater runoff from the new impervious surfaces (roads, decorative hardscapes). This runoff volume would be directed to designated on-site storage basins, which would be designed with sufficient capacity to accommodate this increased volume, and Fagan Lake. Operation of the Phase 2 cemetery would also generate small volumes of excess soil during burial operations. Excess soil not returned to the in-ground interment site would be removed from the interment area and stored at the designed soils stockpile area in the western portion of GLNC; soils in this area are covered with vegetation and are at a lower elevation that the surrounding grounds, such that stormwater runoff remains within the stockpile area.

Therefore, operation of the Proposed Action would have a short-term, direct, negligible, less-than-significant adverse impact on surface water.
3.9.2.1.2 **Groundwater**

**Construction.** The depth of the groundwater encountered beneath the Phase 2 expansion area ranges from approximately 5- to 28-feet below ground surface. Fill may be required to raise burial sections above the seasonal high groundwater table. Construction of the Phase 2 expansion may encounter groundwater in some area. However, the intermittent and temporary (lasting under one hour) interaction of construction equipment (e.g. metal excavator bucket) with shallow groundwater would not degrade groundwater quality.

To further ensure significant adverse impacts do not occur, construction equipment would be properly maintained in good working order and equipped with emergency spill kits. This would ensure that construction contractors are prepared to respond to an accidental release of petroleum-based fluids (diesel, hydraulic fluid) to groundwater. Additionally, construction equipment would be refueled away in designated, impervious areas (such as at the maintenance complex). As such, potential adverse impacts to groundwater associated with construction are anticipated to be short-term and less-than-significant.

Therefore, construction of the Proposed Action would have a short-term, direct, negligible, less-than-significant adverse impact on groundwater.

**Operation.** Based on standard modern burial practices, it is unlikely that embalming fluid or other decomposition products would be released into the soil and/or groundwater during operation of the Phase 2 cemetery. The standard NCA design incorporates (for full casket burials) subsurface concrete crypts, five sections of which would be installed during site construction. Using this technique, the caskets are not buried directly in the soils, rather they are set in a pre-placed concrete crypt (established turf and soils temporarily removed crypt lid removed, casket placed, followed by the reverse process to complete). Modern embalming fluids are markedly less toxic as the primary active ingredients are no longer arsenic-based. Additionally, as selection of either cremain interment or columbaria placement increase, the potential for soil or groundwater contamination commensurately decreases as no embalming fluids are used.

The proposed crypt fields would utilize an adequate underdrainage system designed to keep water from reaching the inside of the lowest crypt. As a result, operation of crypt fields is not anticipated to encounter or therefore impact groundwater.

During operations, pesticide applications (as part of routine maintenance activities) would be conducted to the minimum extent necessary and in accordance with manufacturer specifications, resulting in negligible impacts to underlying groundwater resources.

Therefore, operation of the Proposed Action would have a short-term, direct, negligible, less-than-significant adverse impact on groundwater.

### 3.9.2.2 No Action

No changes to GLNC would occur from implementation of the No Action alternative; therefore, no impacts to hydrology or water quality would occur. Baseline conditions would remain, as described above.
3.10 Floodplains, Wetlands, and Coastal Zone Management

3.10.1 Existing Environment

3.10.1.1 Wetlands

The United States Army Corps of Engineers (USACE) has regulatory jurisdiction over Waters of the United States, including wetlands pursuant to Section 404 of the Clean Water Act and Navigable Waters of the United States pursuant to Section 10 of the 1899 Rivers and Harbors Act. Jurisdictional wetlands are delineated based upon the presence of hydric soils, hydrologic indicators, and hydrophytic vegetation in accordance with the *Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Mid-west Region* (USACE 2010) and *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). In Michigan, wetlands are potentially regulated under Part 303, Wetland Protection, of the Natural Resources and Environmental Protection Act (NREPA).

USACE can determine whether or not a wetland area is jurisdictional under Section 404 of the Clean Water Act (CWA) through the jurisdictional determination (JD) process. USACE asserts jurisdiction over wetlands “adjacent” (bordering, contiguous, or neighboring) to traditional navigable water (TNW) and wetlands adjacent to non-TNWs if the waterbody is relatively permanent, or if the waterbody is a wetland that directly abuts a relatively permanent water (RPW), or if a water body, in combination with all wetlands adjacent to that water body, has a significant nexus with TNWs or interstate waters. Non-RPWs are jurisdictional where there is a “significant nexus” with a TNW or interstate water.

In 2002, URS Corporation conducted a detailed delineation of wetlands at GLNC in accordance with the *Corps of Engineers Wetlands Delineation Manual (1987 Manual)*. URS Corporation identified thirty-five potential wetlands at GLNC ranging in size from 0.01 acre to 19.86 acres in size. Wetland resources totaled 70.89 acres of GLNC, and URS Corporation determined that 57.46 acres would be considered regulated wetlands (VA, 2002).

A second detailed wetland delineation at GLNC was completed on 23 March 2018. Six wetland areas were identified within the Phase 2 expansion area. Figure 8 depicts all delineated wetlands at GLNC.

3.10.1.2 Floodplains

According to the available Federal Emergency Management Agency (FEMA) floodplain map (Flood Insurance Rate Map [FIRM] Map Number 26125C0151F, effective September 29, 2006) (Figure 3) the majority of the GLNC property and the Phase 2 expansion area are located in “Zone X”, which is defined as an area of minimal flood hazard. The areas directly surrounding Fagan Lake and Round Lake and wetland areas along the western border of GLNC are designated “Zone A”, which is defined as an area that would be inundated by a 100-year flood, on which base flood elevations have not been determined. The existing columbarium plaza and assembly area adjacent to Fagan Lake are partially within Zone A; however, the proposed Phase 2 burial areas are all located outside of this area and therefore are not within either the 100-year or 500-year floodplains.
Figure 8. Delineated Wetland Areas at Great Lakes National Cemetery
Figure 9. Great Lakes National Cemetery FEMA Floodplain Map
3.10.1.3 Coastal Zone Management

The Coastal Zone Management Act (CZMA) was enacted in 1972 to preserve, protect, develop, and where possible, to restore and enhance the resources of the nation's coastal zone. Coastal States are encouraged to develop state coastal management programs, and comprehensively manage and balance competing uses of and impacts to coastal resources. The United States Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) approves coastal management programs. The Michigan Coastal Management Program was approved by NOAA in 1978 and is housed in the Office of the Great Lakes. The CZMA requires that any federal action(s) affecting any land or water use, or natural resource of the coast, be consistent with the enforceable policies of a state's federally-approved coastal management program.

Oakland County is not part of the Michigan Coastal Zone, therefore no coordination or review under the CZMA is required for the Proposed Action.

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

3.10.2.1.1 Wetlands

**Construction.** The conceptually approved and permitted design for the Phase 2 expansion would require the filling of 0.02 acres of emergent wetland area for construction of an access road to the new columbarium complex. The final design for the proposed expansion will include installing a 48-foot long, 18-inch diameter, wetland-equalization culvert within the new columbarium access road. The wetland equalization culvert will be installed for the purpose of water level equalization and will provide for the free flow of surface water and/or movement of organisms between portions of the wetland system. VA obtained an EGLE (formerly Michigan Department of Environmental Quality [MDEQ]) WRD wetlands permit; permit number WRP014744, for these anticipated impacts on 13 December 2018; expires 13 December 2023. The anticipated impacts are permitted as Minor Project, Category MP 20 – Minor Fill and General Permit H- Culverts-Wetland Equalization. Construction activities would occur in a manner that complies with conditions included in the Minor and General Permit to minimize adverse effects to wetlands/Waters of the United States prior to and during construction.

Therefore, construction of the Proposed Action would have a long-term, direct, minor, less-than-significant adverse impact on wetlands/Waters of the United States.

**Operation.** Operation of the Proposed Action has no anticipated activities that would adversely impact wetlands. New and existing stormwater engineering controls would be properly maintained to ensure stormwater runoff is properly managed such that its flow would not cause soil erosion, leading to migration of sediment-laden runoff into wetlands or surface water. Additionally, newly landscaped vegetated areas would be professionally maintained to ensure soils remain covered and are not subject to potential erosive forces. Pesticide applications would be made according to label instructions as part of routine maintenance activities and would avoid direct application to or near wetlands or surface water bodies.

Therefore, operation of the Proposed Action would result in short-term, direct, negligible adverse impacts on wetlands/Waters of the United States.
3.10.2.1.2 **Floodplains**

**Construction and Operation.** As previously mentioned, the Phase 2 expansion area is outside of the 100- and 500-year floodplains. Therefore, construction and operation of the Proposed Action would be anticipated to have no impact on floodplains.

3.10.2.1.3 **Coastal Zone Management**

**Construction and Operation.** As previously mentioned, Oakland County, and therefore GLNC is not located within the Michigan Coastal Zone. Therefore, there are no anticipated impacts to the coastal zone from either construction or operation of the Proposed Action.

3.10.2.2 **No Action**

Under the No Action alternative, there would be no impact to wetlands, floodplains, or coastal zone resources. Baseline conditions would remain, as described above.

3.11 **Socioeconomics**

3.11.1 **Existing Environment**

GLNC is located in Oakland County, MI. Oakland County is located northwest of Detroit and is part of the Detroit metropolitan area. The socioeconomic conditions of this area are influenced by the range of industries present, from agriculture in the northwestern portion of the county, to the larger manufacturing, health care and social assistance, and scientific and technical services in the remainder of the county. Oakland County is the second most populous county in Michigan. Since 1990, the population in the county increased from 1,011,793 to 1,259,201 by 2017. This increase is due to natural growth within the Detroit metropolitan area. In 2017, the median household income in the county was approximately $77,475, with approximately 9.0 percent of the population living below the poverty level, making Oakland County one of the ten highest-income counties in the U.S. with a population over one million people. Population and relevant demographic figures for all of Oakland County and the State of Michigan are presented in Table 11.

A summary of economic data, presented in Table 12, indicates that poverty and unemployment levels in Oakland County are lower, while household income is higher, than elsewhere in Michigan, . Oakland County has relatively similar demographics to the State of Michigan.

**Table 11. Demographic Data for Oakland County and the State of Michigan**

<table>
<thead>
<tr>
<th>Location</th>
<th>Total Population¹</th>
<th>Median Age²</th>
<th>% Population under age 18¹</th>
<th>% Minority Population¹,³</th>
<th>% High School Graduates²</th>
<th>Veterans²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oakland County</td>
<td>1,259,201</td>
<td>41.2</td>
<td>21.3%</td>
<td>28.2%</td>
<td>93.7%</td>
<td>58,262 (4.6%)</td>
</tr>
<tr>
<td>State of Michigan</td>
<td>9,995,915</td>
<td>39.8</td>
<td>21.8%</td>
<td>25.5%</td>
<td>90.2%</td>
<td>581,537 (5.8%)</td>
</tr>
</tbody>
</table>

Notes:
1 – U.S. Census 2017
2 – U.S. Census 2012-2016
3 – Includes all race/ethnicity categories except non-Hispanic White persons
### Table 12. Economic Data for Oakland County and the State of Michigan

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Households(^1)</th>
<th>Median Household Income(^1)</th>
<th>% Population in Poverty(^1)</th>
<th>% Unemployment Rate(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oakland County</td>
<td>499,617</td>
<td>$77,475</td>
<td>9.0%</td>
<td>2.9%</td>
</tr>
<tr>
<td>State of Michigan</td>
<td>3,888,646</td>
<td>$54,909</td>
<td>15.6%</td>
<td>4.5%</td>
</tr>
</tbody>
</table>

Notes:
\(^1\) U.S. Census, 2012-2016 American Community Survey 5-Year Estimates

### 3.11.2 Environmental Consequences

#### 3.11.2.1 Proposed Action

**Construction.** VA would contract with a qualified firm to construct the Phase 2 expansion. Constructing the Phase 2 cemetery expansion would require employment of skilled and non-skilled labor during the approximately 18-month work period, as well as purchase of materials (ex. aggregate, plantings) from local or regional suppliers.

The temporary increase in employment and spending on materials would have a short-term, direct, negligible, beneficial impact on the local economy during the construction period. These construction-related beneficial impacts would end once the construction phase is completed.

**Operation.** Currently, there are 23 staff members at GLNC. The current workforce at GLNC is anticipated to be sufficient to maintain and operate the Phase 2 cemetery. If needed, and should funding allow, two to three additional maintenance staff could be hired. Maintaining or slightly increasing staff levels would have a negligible beneficial impact on the socioeconomic condition within Oakland County.

The Phase 2 cemetery would increase the interment capacity, and therefore the longevity, of GLNC. Over time, this would lead to a slight increase in the number of visitors to Oakland County. These visitors could potentially utilize area businesses (restaurants, lodging, service stations, etc.) during visits. Although the potential increase in spending has not been quantified for this SEA, the increase would be anticipated to have a negligible beneficial impact on the socioeconomic conditions in the communities in the vicinity of GLNC. Additionally, extending the longevity of GLNC allows Veterans to be interred there, allowing their families/visitors who may reside in the Detroit metropolitan area to avoid having to travel longer distances to a National Cemetery outside of this region.

Therefore, operation of the Proposed Action would have a long-term, direct, negligible, beneficial impact on socioeconomics.

#### 3.11.2.2 No Action

Under the No Action alternative, the Proposed Action would not be implemented, and the longevity of GLNC would not be extended. The benefits associated with the Proposed Action would not be realized. Following closure of GLNC to new interments, Veterans choosing burial at a National Cemetery would have to select a location outside of the Detroit metropolitan area. Future visitors who reside in the Detroit metropolitan area would incur greater costs (fuel, lodging) associated with traveling longer distances to the selected National Cemetery. Therefore, the No Action alternative would have a short- and long-term, negligible, less-than-significant adverse impact on socioeconomics.
3.12 Community Services

3.12.1 Existing Environment

GLNC has provided burial benefits for Veterans and their families in the Detroit metropolitan area since it opened for burials in 2005. The Fort Custer National Cemetery in Augusta, MI is located approximately 134 miles to the southwest of GLNC and is the nearest National Cemetery.

There is no public transportation within Holly Township. North Oakland Transportation Authority and Smart Bus provide bus service throughout the southeastern, northeastern, and eastern parts of Oakland County, but there are no stops within at least 10 miles of GLNC. Police protection is provided by the Michigan State Police and fire protection and emergency services are provided by the North Oakland County Fire Authority. Other community services including schools, health care, and parks and recreation are provided by Oakland County and Holly Township. Because no additional load is expected to be placed on these or other public or community services as a result of the Proposed Action, impacts to community services other than Veterans’ burial benefits are not analyzed in this SEA.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

Construction and Operation. The Phase 2 cemetery would increase the interment capacity of GLNC by 28,570, and therefore extend the longevity of GLNC. This would allow VA to meet the continued demand for burial benefits by Veterans and their families in the Detroit metropolitan area for at least the next 10 years, resulting in a long-term, direct, significant beneficial impact on this community resource.

3.12.2.2 No Action

Under the No Action alternative, the Phase 2 cemetery would not be constructed, there would be no increase in burial capacity, and due to gravesite depletion, the longevity of GLNC would not be extended. Veterans, their families, and visitors would have to travel more than 75 miles—a distance considered to be an undue burden—to obtain burial benefits at another National Cemetery in Michigan. The No Action alternative would not comply with the Servicemembers Civil Relief Act. This would result in a long-term, significant adverse impact to this community resource.

3.13 Solid Wastes and Hazardous Materials

3.13.1 Existing Environment

There are no known solid wastes or hazardous materials present within the Phase 2 expansion area at GLNC.

Current operations at GLNC generate solid waste consisting of office debris, flowers and other items left behind at burial sites, and container waste associated with minor vehicle maintenance activities. These solid wastes are managed by VA and transported by a licensed contractor for off-site disposal.

Minimal quantities of hazardous materials are stored at the GLNC maintenance complex. Diesel (500 gallons) and gasoline (500 gallons) are stored on site in a single two-sided convault. Used oil is stored in a 55-gallon tank that is emptied and properly disposed of off-site by a third-party
vendor as needed. New oil is stored in two 55-gallon drums. Additional hazardous materials stored at the maintenance complex include one 55-gallon container of antifreeze and miscellaneous paint. A minimal number of lead acid batteries are stored at the maintenance complex. Used batteries are turned in at the local auto supply store. Other minimal quantities of hazardous materials may be brought on-site by contractors on an as-needed basis for activities such as pest control and weed management, however an outside vendor applies pesticides and herbicides to the landscaping when needed.

The maintenance complex is equipped with a 30-gallon oil/water separator to prevent oil release and contamination during maintenance vehicle washing and refueling. The oil/water separator tank is pumped out by an outside vendor once every 10 to 15 years.

Small volumes of excess soils are generated during burial operations. These soils are reutilized on-site where possible as topsoil. Any additional excess soils are stored at the spoils area in the western portion of GLNC. Approximately 300-cubic yards of excess soil is currently stored in the spoils area.

3.13.2 Environmental Consequences

3.13.2.1 Proposed Action

Construction. Construction of the Phase 2 expansion would generate solid waste, consisting of cleared vegetation, excess soil, and excess construction materials and packaging. Cleared vegetation would be transported off-site for composting. Excess soils would be reused onsite as fill to raise the elevation of burial areas in the Phase 2 expansion area. Excess construction materials would be containerized in a designated area within the construction site, then transported off-site for recycling; materials that cannot be recycled would be landfilled off-site. The nature of the solid wastes generated during construction would be similar to a typical construction project, and the volumes generated are not anticipated to make a major contribution to the overall solid waste volume generated and disposed of in Oakland County or the Detroit metropolitan area.

Staging and operation of construction equipment at the Phase 2 expansion area carries an increased potential for incidental releases of operating fluids and chemicals. Construction contractors would be required to perform proper scheduled vehicle inspections and maintenance to reduce the potential for releases, as well as maintaining an on-site spill kit with employees trained in its use. There will be no demolition of any structures as part of the Proposed Action.

Additionally, all construction contractors would comply with VA's solid and hazardous materials Standard Operating Procedures (SOP) and management measures specified in NCA Master Construction Specifications. These management measures would ensure that construction of the Phase 2 cemetery would have a short-term, direct, negligible, less-than-significant adverse impact on solid wastes and hazardous materials.

Operation. Operation of the Phase 2 cemetery would result in a negligible increase in the volume of solid waste currently generated at GLNC. These wastes include flowers and other debris left behind at memorial sites, as well as excess soil generated during in-ground burials. No new types of solid wastes would be generated. The solid waste management program currently in place at GLNC is capable of handling this additional volume without impacting on-going operations.
Hazardous materials used during operation of the Phase 2 expansion would be limited to approved pesticides and/or herbicides, applied according to the manufacturers’ labeled instructions. These materials would be used for insect control and weed management, and applied by a qualified third-party vendor.

Therefore, operation of the Proposed Action would have a long-term, direct, negligible, less-than-significant adverse impact on solid and hazardous materials.

3.13.2.2 No Action

No changes to solid and hazardous materials generation or management would occur under the No Action alternative. Therefore, the No Action alternative would have no impact on solid or hazardous waste at GLNC.

3.14 Transportation and Parking

3.14.1 Existing Environment

3.14.1.1 Roadways

GLNC main entrance is located along Belford Road. A second entrance is located west of the main entrance on Belford Road and provides direct access for staff to the maintenance complex. Belford Road is an east-west oriented major collector maintained by the Road Commission for Oakland County (RCOC) (Holly Township Planning Commission, 2016). Belford Road is a gravel/dirt road except for the portion that directly abuts the entrance to the cemetery, where it is paved. According to the Michigan Department of Transportation (MDOT), the annual average daily traffic (AADT) of the segment of Belford Road directly abutting GLNC is 393 vehicles (MDOT, 2012). GLNC and Belford Road are accessible regionally by Interstate 75. Interstate 75 is part of the Interstate Highway System and runs north-south from Miami, Florida, to Sault Ste. Marie, Michigan. In Holly Township, Interstate 75 is a six-lane highway in good condition. The segment of Interstate 75 that intersects with Belford Road has an AADT of 54,107 vehicles (MDOT, 2017) and is maintained by Michigan Department of Transportation (MDOT).

The Road Commission for Oakland County, MI, identifies Fagan Road and Lahring Road as having seasonal weight restrictions for single and tandem axle trucks. The construction contractor would need to comply with these weight restrictions, should these roadways be used to transport construction materials (such as pre-cast crypts) to the Phase 2 expansion area.

The Phase 2 expansion area is accessible from the existing Phase 1 roadways within GLNC. The main roadways allow visitors and staff to access burial areas, maintenance buildings, and administrative offices. Use of cemetery roadways is restricted to cemetery visitors and staff. No recreational uses are permitted. Visitors can park on the roadway shoulder, off the grass.

3.14.1.2 Parking

A cortege area located north of the PIC/Administrative Building provides a designated parking area for visitors attending a memorial service. A separate visitor and staff parking area is located next to the PIC/Administrative Building and provides approximately 20 parking spaces. The maintenance complex has its own separate parking lot accessible from the maintenance entrance which has approximately 30 parking spaces for maintenance staff and contractors. This separation ensures construction equipment is not readily visible to visitors and maintains the solemnity of GLNC. There is also a separate parking lot associated with the Assembly Area. This parking lot
has approximately 45 spaces and is located directly across the road from the Assembly Area. Vehicles may occasionally park on Belford Road and other area roadways on occasions when GLNC experiences increased visitation, including holidays such as Memorial Day and Veterans Day.

3.14.1.3 Traffic

Operation of GLNC contributes approximately 600 vehicles to the daily traffic volume in the vicinity. This traffic represents an average of 20 funeral services performed per weekday, with each funeral cortege containing approximately 30 vehicles, as well as a small number of vehicles from employees, contractors, and visitors.

Operation of GLNC has not resulted in significant adverse impacts to the area traffic levels or the transportation network to date.

3.14.2 Environmental Consequences

3.14.2.1 Proposed Action

Construction. Construction of the Phase 2 expansion would result in a temporary increase in the number of vehicles (construction trucks and workers’ vehicles) traveling on Belford Road to access GLNC. Belford Road (Level of Service B) is adequate for handling this temporary increase in roadway use, and no modifications to this roadway or traffic patterns would be required. Additionally, construction contractors would adhere to the seasonal weight restrictions on Fagan Road and Lahrin Road.

Unless otherwise directed by the GLNC Director, construction vehicles would be required to enter and exit GLNC from the existing maintenance road entrance. If warranted, flaggers may be utilized to notify oncoming traffic of slower construction vehicles entering or exiting the maintenance road.

The roadways within GLNC are adequate to support construction vehicles and the temporary increase in traffic. Thus, the roadways would not require physical alternation or traffic pattern modifications. To avoid disrupting the solemnity of committal services, processions, and cortege travel, the construction contractor would coordinate with GLNC staff prior to mobilizing construction equipment through the Phase 1 cemetery.

Construction of the Phase 2 expansion would involve roadway expansions and improvements in order to connect the new burial sections, committal service shelter, and columbarium plaza with the Phase 1 cemetery. Specific roadway and parking upgrades are detailed in the following subheadings.

Cortege Lane Expansion – Under the Proposed Action the existing cortege lanes would be expanded to allow for the construction of two additional lanes and one pass through lane. The lanes would be expanded to the east into the existing lawn area adjacent to the PIC/ Administrative building. This would provide additional cortege lane capacity for memorial service attendees and improve the movement of visitor vehicles entering GLNC.

Assembly Area Parking – Under the Proposed Action additional parking spaces would be provided at the existing Assembly Area parking lot to accommodate more visitors and memorial service attendees. The existing Assembly Area service road and sidewalks would be adjusted to accommodate for the new parking lot layout. Visitors will be allowed to continue parking on the
cemetery roadways during construction of the parking reconfiguration and no construction would occur during any memorial services or gatherings at the Assembly Area in order to maintain the solemnity of the site.

**Committal Service Shelters Parking** – A new committal service shelter would be constructed off of the new Phase 2 roadway. Parking would be expanded at the existing Committal Shelters 1 and 2. A satellite parking lot would be constructed at Committal Shelter 1 to accommodate honor guard parking needs. A new sidewalk would be constructed to allow pedestrian access between the parking lot and the existing honor guard building. New honor guard parking spaces would also be provided northwest of Committal Shelter 2. Construction would occur outside of the normal committal service schedule in order to avoid disruptions to these services.

Therefore, construction of the Proposed Action would have a short-term, direct, negligible, less-than-significant adverse impact on transportation and parking within or in the vicinity of GLNC.

**Operation.** Operation of the Phase 2 expansion would not generate a measurable increase in traffic from visitors on roadways within and in vicinity of GLNC. Operation of the Phase 2 expansion would provide new parking areas adjacent to the committal service shelters and the Assembly Area to accommodate more visitors and attendees of memorial services. Additionally, visitors would continue to be allowed to park on the shoulder of the new roadways within the Phase 2 cemetery. Operation of the new cortege lanes would improve flow for memorial service attendees and increase capacity.

Therefore, operation of the Proposed Action would have a significant beneficial impact on transportation and parking at GLNC.

### 3.14.2.2 No Action

No changes to transportation or parking at GLNC would occur under the No Action alternative; therefore, no impacts would occur. Baseline conditions would remain, as described above. However, the beneficial impacts from increased parking and the new cortege lanes would not occur.

### 3.15 Utilities

#### 3.15.1 Existing Environment

The Phase 2 expansion area is currently undeveloped and is not serviced by any utilities. Existing utility infrastructure in the Phase 1 cemetery consists of electric and telecommunications conduit direct bury lines, stormwater sewer and associated stormwater facilities, irrigation, and sanitary sewer with associated septic tanks and drain fields.

Electricity service is provided to GLNC by Consumer’s Energy. Telecommunication service is provided by AT&T. A needed, local vendor (currently PTS, Inc.) provides solid waste and recycling collection services to GLNC. Sewage is directed to the septic tank and associated leach field. The septic tank is pumped out every five years by a third-party vendor.

Irrigation water for the Phase 1 cemetery is obtained from Fagan Lake. The current irrigation demand is approximately 1 million gallons per year. The existing irrigation system consists of a looped mainline that is supplied by a pump station located at Fagan Lake. The pressure available at the pump outlet is 90 pounds per square inch and the pump provides a flow of 1,100 gallons per minutes (gpm).
Potable water at GLNC is provided by two on-site wells screened at 280 feet below surface. Withdrawals from these wells have been permitted by Oakland County.

3.15.2 Environmental Consequences

3.15.2.1 Proposed Action

Construction. Construction of the Phase 2 cemetery would not require the use of permanent utilities. Construction equipment would be powered by on-board engines and, if required, portable generators.

Irrigation of the Phase 1 cemetery would not be disrupted during the extension construction. During the construction phase, the existing looped mainline irrigation system would be extended to the new Phase 2 burial sections in order to irrigate the approximately 30 acres of new landscaped area. The irrigation mainline would be connected to the new Phase 2 burial sections at the north and east ends of Avenue of Flags. Fagan Lake would continue providing irrigation water to the Phase 1 cemetery during the construction period.

During construction, stormwater management systems, including culverts to allow operational stormwater conveyance to the existing wetland and Fagan lake, would be installed within the Phase 2 expansion area. This construction activity would not require any disruption to the existing Phase 1 stormwater management systems.

Accordingly, the construction phase would not cause any disruptions to these or other utility services at GLNC or in the community. Therefore, construction of the Phase 2 expansion would have no impact on utilities.

Operation. Operation of the Phase 2 expansion would require the use of utility services for irrigation water and stormwater management.

During operation, Fagan Lake would be used to supply irrigation water for new landscaping in the approximately 30-acre expansion area. The landscaped grounds in the Phase 2 expansion are anticipated to require approximately 250,000 gallons of irrigation water per year. Any new or increased withdrawal above 100,000 gallons per day (gpd), averaged over any 30-day period, must be authorized by EGLE using the Water Withdrawal Assessment Tool. Any new or increased withdrawal greater than 2 million gallons per day requires a permit. Since the Proposed Action will not result in a withdrawal of 100,000 gpd or greater, no coordination or permit from EGLE is anticipated.

The additional irrigation demand needed for the expansion area is not anticipated to adversely impact the quantity or quality of the water in Fagan Lake, and Fagan Lake is anticipated to adequately meet the required demand.

Stormwater management systems installed in the Phase 2 expansion area would be maintained by GLNC staff according to the existing maintenance schedule to ensure the systems operate in good working order and according to design plans.

Therefore, operation of the Proposed Action would have a long-term, direct, negligible, less-than-significant adverse impact on utilities.

3.15.2.2 No Action
No changes to utility requirements at GLNC would occur under the No Action alternative; therefore, no impacts would occur. Baseline conditions would remain.

### 3.16 Environmental Justice

#### 3.16.1 Existing Environment

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was enacted in 1994 to focus federal agencies attention on the environmental and human health conditions in minority and low-income communities, with the goal of achieving environmental justice. Environmental justice is the idea that no minority or low-income population bears a disproportionate burden of adverse environmental impacts. Under this EO, federal agencies must identify and address the human health or environmental effects of its actions on minority and low-income populations.

Data for this analysis was obtained for minority and low-income populations located within a 1-mile radius of GLNC; for all of Oakland County; and for the State of Michigan (Table 13). According to this data, the area within a 1-mile radius of GLNC has a lower percentage of minority populations than Oakland County or the State of Michigan, and a lower population below the poverty level than the State of Michigan, but a slightly greater population below the poverty level than Oakland County.

<table>
<thead>
<tr>
<th>Location</th>
<th>Total Population</th>
<th>% Minority Population</th>
<th>% Population below Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-mile radius of the Great Lakes National Cemetery</td>
<td>6,239</td>
<td>4.0%</td>
<td>11.0%</td>
</tr>
<tr>
<td>Oakland County</td>
<td>1,259,201</td>
<td>28.2%</td>
<td>9.0%</td>
</tr>
<tr>
<td>State of Michigan</td>
<td>9,995,915</td>
<td>25.5%</td>
<td>15.6%</td>
</tr>
</tbody>
</table>

Notes:
1 – U.S. Census, 2017
2 – Includes all race/ethnicity categories except non-Hispanic White persons

#### 3.16.2 Environmental Consequences

**3.16.2.1 Proposed Action**

**Construction and Operation.** Construction and operation of the Phase 2 expansion has no mechanism to cause permanent changes in local population levels, income, housing, local tax revenues, or other non-cemetery-related community services. The Proposed Action would not have a disproportionate impact on low-income or minority groups in Oakland County. However, the Proposed Action may provide a temporary increase in local employment levels if the contractor(s) selected to perform construction/demolition activities hires qualified workers from the local pool available. Hiring local workers would result in a short-term, direct, beneficial but negligible socioeconomic impact on the community.

Overall, the Proposed Action is not anticipated to have an impact on Environmental Justice communities.
3.16.2.2 No Action

No changes would occur from implementation of the No Action alternative; therefore, no Environmental Justice impacts to minority and low-income populations would occur. Baseline conditions would remain, as described above.

3.17 Cumulative Impacts

CEQ regulations stipulate that the cumulative effects analysis should consider the potential environmental effects resulting from “the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. Informed decision making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Past activities are those actions that occurred within the geographic scope of cumulative effects that have shaped the current environmental conditions of the project site. For many resource areas, the effects of past actions are now part of the existing environment and are included in the description of the affected environment.

The scope of the cumulative effects analysis involves the timeframe and geographic extent to which effects could be expected to occur, and a description of the resources that could be cumulatively affected. The geographic Region of Influence (ROI) is an important consideration when discussing cumulative effects from construction and operations. For the purposes of this analysis, the ROI was determined to be GLNC and the immediately surrounding community in Holly Township and Oakland County. An effort was undertaken to identify other projects for evaluation in the context of the cumulative impact analysis. This was further developed through review of public documents and information gained from the coordination with various applicable agencies.

3.17.1 Cumulative Actions Considered

As discussed in Chapters 2 and 3 of this SEA, the Proposed Action would modify portions of the proposed Phase 2 expansion area while also preserving sensitive resources through compliance with existing permits and environmentally sensitive design. Overall, no significant adverse cumulative impacts on the environment, induced by changes from implementing the Proposed Action, are anticipated within the ROI.

Historically, GLNC property was used as agricultural land up until the time of its purchase by NCA in 2002. Since opening for burials in 2005, the developed portion of the property has been restricted to and maintained for cemetery operations, while the majority of the proposed Phase 2 area and other undeveloped phases are leased to a local farmer for soybean production. During this time, land use around the property has remained agricultural and residential. Any potential future expansion phases of GLNC would occur within the existing GLNC property.

Since being adopted in 1977, the Holly Township Master Plan (revised September 1998, November 2003, August 2017) sought to guide long-range planning and community development of the township. GLNC is identified in the Master Plan on the Future Land Use Map as Institutional/Local Recreation (Holly Township Planning Commission, 2016).
According to the *Future Land Use Map*, the area to the east, south and west of GLNC will remain as Rural Estate (standard development of 1:10 to 1:40 units per acre) for the foreseeable future. The area to the north of GLNC will remain as Low Density Residential (standard development of 1:5 units per acre) for the foreseeable future. There are no major development projects in the vicinity of GLNC as identified in the Holly Township Master Plan that would have adverse cumulative impacts when considered with the Proposed Action.

Future reasonably foreseeable development projects within the larger Oakland County that may have cumulative impacts when considered with the Proposed Action include the Interstate 75 Corridor Project. This project encompasses approximately 18 miles of freeway within Oakland County. Improvements associated with the project will include reconstructing the freeway, adding a High Occupancy Lane to increase capacity, bridge replacement, upgraded road design, interchange improvements, ramp enhancements, and a new drainage system for the corridor. A Final EIS was completed for the Interstate 75 Corridor Project in April 2005 and concluded in federal approval of the project (MDOT, 2005). When considered with the Proposed Action, the I-75 Corridor Project has the potential to result in less-than-significant adverse cumulative impacts on wetlands and soils.

### 3.17.2 Effects of Cumulative Actions on the Proposed Action

The anticipated impacts associated with the potential future developments identified in the Holly Township Master Plan, or the I-75 Corridor Project, when considered cumulatively with those of the Proposed Action, would not lead to significant adverse impacts to any of the resources analyzed in this SEA. The Proposed Action would not result in the significant loss of agricultural land or lead to a change in the rural/agricultural nature of the surrounding community. Potential less-than-significant cumulative adverse impacts are summarized in the following subheadings.

**Wetlands.** The Proposed Action would require filling of 0.02 acres of emergent wetlands for expansion of the road to the new columbarium complex. The I-75 Corridor Project will require impacts to 0.41 acres of palustrine emergent and palustrine shrub-scrub wetlands (MDOT, 2005). These impacts, when considered cumulatively represent a negligible loss of wetlands relative to the wetlands of Oakland County and the surrounding region. Additionally, 0.61 acres of mitigation will occur as part of the I-75 Corridor Project impacts. Therefore, considered cumulatively impacts to wetlands will remain at less-than-significant adverse levels.

**Soils.** The Proposed Action would involve grading, which would remove the vegetation that otherwise stabilizes the underlying soil. These activities would result in exposed soils within the construction area. Exposed soils that have not been compacted or restabilized with vegetation or hardscape may be susceptible to erosion by wind, temporarily increasing particulate matter in the surrounding air and creating adverse short-term health, visibility, and aesthetic impacts. Additionally, erosion from precipitation can potentially result in off-site discharges of sediment-laden runoff. Construction and operational vehicles and equipment could also accidentally release petroleum-based fluids (diesel, hydraulic fluid) that can degrade soil quality, if the release is not immediately remediated.

The I-75 Corridor Project will involve cutting into the banks of the freeway to allow for widening and improvements (MDOT, 2005). This would result in similar exposure of soil and impacts as the Proposed Action. However, by utilizing appropriate erosion, sedimentation, and stormwater...
management BMPs and adhering to existing permits, impacts from construction of the Proposed Action and the I-75 Corridor Project on soil would remain at less-than-significant levels.

The proposed Phase 2 cemetery expansion is located within the existing boundary of GLNC in an area that has been previously cleared for agricultural uses. The use of this portion of the property for continued cemetery activities is consistent with existing permits and land use plans. While construction of the Phase 2 cemetery would require localized changes to several aspects of the current environment (e.g. topography; tree removal; new landscaping), operation of the Phase 2 cemetery is generally low-intensity, having few, if any, adverse impacts on the surrounding natural or built environment. Additionally, VA has constructed and operated dozens of similar cemetery expansions without resulting in cumulative impacts. This is primarily due to VA’s implementation of BMPs during construction and operation to ensure that potential adverse impacts are maintained at less-than-significant levels.

Therefore, no significant cumulative adverse impacts are anticipated from implementing the Proposed Action.

### 3.17.3 Effects of Cumulative Action under the No Action Alternative

Under the No Action alternative, the Phase 2 cemetery expansion would not be developed. Due to gravesite depletion, the longevity of GLNC would not be extended. VA would not be able to meet identified Veterans’ burial needs in the Detroit metropolitan area. These Veterans would be required to select another National Cemetery having available capacity or choose another burial option. Therefore, the community services benefits contributed by the Proposed Action, would not occur under the No Action alternative.

### 3.18 Potential for Generating Substantial Controversy

The Proposed Action would extend the longevity of GLNC. The Veteran community and the wider public anticipate that GLNC would be expanded as needed to account for the continued demand for burial opportunities within this National Cemetery and the greater Detroit metropolitan area. As discussed in previous sections, there are no significant adverse impacts that would generate negative public perception or reaction associated with implementing the Proposed Action. Considering these factors, implementing the Proposed Action would be widely accepted and would reduce the potential to generate significant public controversy.

Under the No Action alternative, GLNC would be closed to new burials once the remaining gravesite capacity is reached, which is anticipated to occur in as little as two years. Veterans and their families seeking burial at a National Cemetery with capacity would be required to travel outside of the Detroit metropolitan area. Therefore, the No Action alternative would be anticipated to generate substantial adverse public controversy.
4 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

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 policy for implementing NEPA. Additional guidance is provided in VA’s Environmental Compliance Handbook (VA, 2012) and VA’s NEPA Interim Guidance for Projects (VA, 2010). Consideration of the views and information of all interested persons promotes open communication and enables better decision-making. Agencies, organizations, and members of the public with a potential interest in the Proposed Action, such as minority, low-income, and disadvantaged persons, are urged to participate. The following sections describe agency coordination and public involvement efforts associated with this Draft SEA.

4.1 Federal, State, and Local Agency Coordination

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) is a federally mandated process for informing and coordinating with other governmental agencies regarding federal Proposed Actions. CEQ regulations require intergovernmental notifications prior to making any detailed statement of environmental effects. Through the IICEP process, VA notifies relevant federal, state, and local agencies and allows them sufficient time to make known their environmental concerns that are specific to a Proposed Action. Comments and concerns submitted by these agencies during the IICEP process are subsequently incorporated into the analysis of potential environmental effects conducted as part of the SEA. This coordination fulfills requirements under EO 12372, Intergovernmental Review of Federal Programs (superseded by EO 12416, and subsequently supplemented by EO 13132), which requires federal agencies to cooperate with, and consider, state and local views in implementing a federal proposal. It also constitutes the IICEP process for this document.

The federal, state, and local agencies listed in Table 14 will be contacted to review the Draft SEA and provide comments during a 30-day review period.

Comments received during the Draft SEA 30-day review period will be documented and addressed in the Final SEA. Copies of all regulatory agency correspondence will be included in Appendix A.

Table 14. Federal, State, and Local Agency Coordination Summary

<table>
<thead>
<tr>
<th>Federal Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Fish and Wildlife Service, East Lansing Field Office</td>
</tr>
<tr>
<td>U.S. Department of Agriculture, National Resources Conservation Service</td>
</tr>
<tr>
<td>U.S. Environmental Protection Agency, Region V, Regional Administrator</td>
</tr>
<tr>
<td>U.S. Army Corps of Engineers, Detroit District</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>State Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan Department of Environmental Quality, Water Resources Division, Southeast Michigan District Office</td>
</tr>
<tr>
<td>Michigan Department of Environmental Quality, Air Quality Division, Southeast Michigan District Office</td>
</tr>
<tr>
<td>Michigan Department of Environmental Quality, Waste Management and Radiological Protection Division, Southeast Michigan District Office</td>
</tr>
<tr>
<td>Michigan Department of Military and Veterans Affairs</td>
</tr>
<tr>
<td>Michigan Department of Transportation</td>
</tr>
<tr>
<td>Michigan State Historic Preservation Office (SHPO)</td>
</tr>
<tr>
<td>Southeast Michigan Council of Governments (SEMCOG)</td>
</tr>
</tbody>
</table>
4.2 Native American Coordination

In accordance with 36 CFR 800.2 and EO 13175, Consultation and Coordination with Indian Tribal Governments, dated November 6, 2000, VA has coordinated with federally recognized Native American Tribes (identified as those having current or historical ties to the area) by requesting their input on the Proposed Action and its potential impact on Native American resources. VA mailed letters on 3 July 2019 to solicit early input regarding the Proposed Action from the following Native American Tribes (copies of letters are included in Appendix B):

- Hannahville Indian Community
- Saginaw Chippewa Indian Tribe of Michigan
- Sault Ste. Marie Tribe of Chippewa Indians of Michigan
- Forest County Potawatomi Community of Wisconsin
- Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin
- Little Traverse Bay Bands of Odawa Indians
- Menominee Indian Tribe of Wisconsin
- Miami Tribe of Oklahoma
- Seneca-Cayuga Nation

Responses to the request for early input were received from the Little Traverse Bay Bands of Odawa Indians, Miami Tribe of Oklahoma, and the Saginaw Chippewa Indian Tribe of Michigan. None of the responses expressed opposition to the Proposed Action (copies of correspondence are provided in Appendix B).

4.3 Public Involvement

VA, as the federal proponent of the Proposed Action, will make the Draft SEA available for the public to review and comment on during a 30-day review period. A Notice of Availability (NOA) of the Draft SEA will be published in the Oakland Press. The NOA briefly describes the Proposed Action, announces the start of the 30-day review period, and identifies that the Draft SEA is available for review in print at the Holly Township Library at 1116 N Saginaw St, Holly, MI 48442, and the Public Information Center at GLNC; and is available for electronic download from VA’s website at http://www.cem.va.gov/cem/EA.asp.

Comments or questions should be addressed to: Mr. Fernando Fernández, U.S. Department of Veterans Affairs, Construction & Facilities Management Office, 425 I (eye) Street, NW, Room 6W417b, Washington, D.C., 20001; by email to fernando.fernandez@va.gov; or by telephone at (202) 632-5529. Please reference “Great Lakes National Cemetery Expansion” in all
correspondence.
Comments received during the 30-day review period will be addressed and documented in the Final SEA. Copies of public comments and an affidavit of publication of the NOA will be included in Appendix C.
5 ENVIRONMENTAL MANAGEMENT MEASURES AND MONITORING

This chapter summarizes the avoidance, minimization, and management measures (identified in Chapter 3) that have been incorporated into the Proposed Action to ensure that any adverse impacts remain at or below minor, less-than-significant adverse levels. “Management measures” are defined as routine BMPs and/or regulatory environmental compliance and protection measures that are regularly implemented as part of proposed activities, as appropriate, across Michigan. Per established protocols, procedures, and requirements, VA (and VA’s design and construction contractors) would implement these management measures and satisfy all applicable regulatory requirements associated with the design, construction, and operation of the Proposed Action. These management measures are summarized in Table 15. Additionally, environmental permits, approvals, and determination potentially required for construction and operation of the Proposed Action are provided in Section 6.

Table 15. Environmental Protection Measures and Monitoring incorporated in the Proposed Action

<table>
<thead>
<tr>
<th>AESTHETICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
</tr>
<tr>
<td>Control fugitive dust emissions through routine construction BMPs, including using water trucks to prevent dust emissions, and install gravel-covered pads to remove dirt from the tires of vehicles leaving the Proposed Action construction site.</td>
</tr>
<tr>
<td>Erect temporary privacy fence around the construction zone, particularly near the existing Phase 1 columbarium complex.</td>
</tr>
<tr>
<td>Operation</td>
</tr>
<tr>
<td>Perform routine and scheduled professional landscape maintenance to ensure the upkeep of the park-like appearance of the grounds and associated physical infrastructure (e.g. roads, interment areas).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AIR QUALITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
</tr>
<tr>
<td>Reduce emissions associated with on-road construction vehicles by consolidating material deliveries and stage heavy equipment on-site to reduce mobilizations.</td>
</tr>
<tr>
<td>Implement dust suppression methods to include application of water and construction scheduling (avoid earthwork during extremely windy and dry periods or when there is an emergency weather advisory). Additionally, haul tarps would be used to cover any soils transported to or from the construction site.</td>
</tr>
<tr>
<td>Stabilize exposed soil with native, non-invasive vegetation or mulching to minimize erosion and potential dust generation.</td>
</tr>
<tr>
<td>Limit construction vehicle speeds on paved roads within GLNC and vicinity at or below posted limits to minimize dust generation. On unpaved surfaces, including Belford Road and Fagan Road, maintain vehicle speeds at or below posted speed limits to minimize dust generation from exposed soils.</td>
</tr>
<tr>
<td>Visually monitor all construction activities on a daily basis, particularly during extended periods of dry weather; implement additional dust control measures as needed.</td>
</tr>
<tr>
<td>Limit engine idling to less than five minutes and implement USEPA-recommended diesel controls to the extent practicable, including the use of clean diesel through add-on control technologies such as diesel particulate filters and diesel oxidation catalysts, repowers, or newer, cleaner equipment.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GEOLOGY, SOILS, AND TOPOGRAPHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
</tr>
<tr>
<td>Obtain the Part 91 permit under Part 91, Soil Erosion and Sedimentation Control, of the Michigan Natural Resources and Environmental Protection Act from the Oakland County Water Resources Commission. Submit the Part 91 permit, approved SESC plan, and Notice of Coverage application to EGLE Water Resources Division for coverage under the NPDES permitting program.</td>
</tr>
</tbody>
</table>
Install and maintain sedimentation and erosion control measures specified in the SWPPP and SESC, including the use of silt fencing, synthetic hay bales, specified loading and unloading areas, covering exposed soils during anticipated storm events, and revegetating soils with temporary and/or permanent native, non-invasive vegetation as soon as construction conditions allow.

Reusing suitable excess soils as a source of on-site fill to the maximum extent practicable.

**Operation**
- Conduct routine landscaping to ensure soil remains vegetated and stabilized to prevent erosion.
- Temporarily stockpile excavated soil for individual burial sites at the maintenance area (or other designed on-site storage area). Sod new burial sites to prevent erosion of soil.

**CULTURAL RESOURCES**

**Construction**
- In the unlikely event that human remains or cultural resources are encountered during construction, an “Inadvertent Discovery” plan would be implemented to avoid adverse impacts. Under this plan, if prehistoric or historic artifacts or human remains that could be associated with Native American, early European, or American settlement are encountered at any time within the project site area, all activities involving subsurface disturbance in the vicinity of the discovery would cease until VA and the MI SHPO are notified, such that items are properly identified and treated according to applicable federal, state, and tribal laws.

**Operation**
- Implement the “Inadvertent Discovery” plan described above in the case that excavations uncover human remains or other cultural items.

**WILDLIFE AND HABITAT**

**Construction**
- Adhere to USFWS avoidance measures for the Indiana bat by implementing seasonal tree clearing restrictions from 1 April through 15 October.
- Adhere to USFWS avoidance measures for the northern long-eared bat by implementing seasonal tree clearing restrictions from 1 June through 31 July.
- Adhere to USFWS Bald Eagle Avoidance Measures

**Operation**
- Utilize native, non-invasive, drought-resistant vegetation for area landscaping to reduce irrigation requirements.
- Landscape lawn areas primarily with turf grass, including Kentucky bluegrass and perennial ryegrass.

**NOISE**

**Construction**
- Coordinate with the GLNC National Cemetery Administrator prior to mobilizing construction machinery through the Phase 1 cemetery to avoid and minimize noise-related disturbances to ongoing memorial services.
- Schedule construction activities to minimize impacts to memorial services to the extent possible, unless there is a specific activity that would directly impact the current operation of the cemetery, in which case the activity would be scheduled outside of the normal construction schedule.
- Comply with OSHA requirements to protect hearing of workers around loud construction equipment.
- Use properly maintained and muffled vehicles and equipment.
- Locate stationary operating equipment as far away from surrounding residents as possible. Shut down heavy equipment and other noise emitters when they are not in use.
### HYDROLOGY AND WATER QUALITY

**Construction and Operation**

Implement the BMPs listed above for Geology, Soils, and Topography to minimize sediment-laden runoff from reaching wetlands and surface water bodies.

Develop a site design that accounts for pre/post 100-year volume stormwater drainage and retention at a minimum.

Utilize native, non-invasive, drought-resistant vegetation for area landscaping to reduce irrigation volumes.

Implement spill and leak prevention and response procedures, including maintaining a complete spill kit at the project area, to reduce the impact of incidental releases of petroleum-based fluids from construction and operational equipment to groundwater or surface water quality.

Locate machinery servicing and refueling areas away from streambeds and washes to reduce the possibility and minimize the impacts of accidental spills or discharges.

During operations, pesticide/herbicide applications (as part of routine maintenance activities) would be conducted to the minimum extent necessary and in accordance with manufacturer specifications, to avoid impacts to underlying groundwater resources.

### FLOODPLAINS, WETLANDS AND COASTAL ZONE MANAGEMENT

**Construction and Operation**

Comply with the conditions of the EGLE WRD permit for the filling of 0.02 acres of emergent wetland and installation of a wetland equalization culvert.

Avoid disturbance to other wetlands outside of the development area, as previously described for Soils and Habitat.

Prevent surface water runoff to the onsite and adjacent surface waters including Fagan Lake and Round Lake and avoid interaction with onsite and adjacent surface waters.

### SOLID WASTE AND HAZARDOUS MATERIALS

**Construction**

Recycle excess construction materials to the maximum extent practicable.

**Operation**

Manage solid wastes in designated areas and establish routine pickup and disposal to appropriate landfill facilities by qualified vendors.

Manage solid and hazardous wastes according to VA's solid and hazardous materials SOPs and management measures specified in NCA Master Construction Specifications, and applicable federal and state laws.

### TRANSPORTATION AND PARKING

**Construction**

Coordinate with the GLNC Administrator to identify the preferred entrance and exit point at GLNC, relative to daily mobilization of construction equipment and workers associated with the Phase 2 expansion.

Coordinate with the GLNC Administrator prior to mobilizing construction machinery through the Phase 1 cemetery to avoid interfering with cortege travel.

Stage construction equipment where it is not readily visible to visitors, maintaining the solemnity of the park-like setting of the Phase 1 GLNC.

If warranted, utilize flaggers to notify oncoming traffic of slower construction vehicles entering or exiting the cemetery from Belford Road and/or Fagan Road.

### UTILITIES

**Construction**

Adhere to Phase 2 design plans when extending the irrigation utility to the Phase 2 expansion area and creating stormwater management systems.
<table>
<thead>
<tr>
<th><strong>Operation</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilize Fagan Lake to supply irrigation water for newly landscaped grounds within the Phase 2 expansion area.</td>
</tr>
<tr>
<td>Maintain stormwater management systems in good working order.</td>
</tr>
</tbody>
</table>
### ENVIRONMENTAL PERMITS, APPROVALS, AND DETERMINATIONS POTENTIALLY REQUIRED

<table>
<thead>
<tr>
<th>Permit, Approval, or Determination</th>
<th>Responsible Agency</th>
<th>Contact Information</th>
<th>Applicable Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal or State Environmental</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| *ALREADY COMPLETED                | EGLE Water Resources Division | Submit the Joint Permit Application form and all required items to:  
Water Resources Division  
Michigan EGLEE  
P.O. Box 30458  
Lansing, MI 48909 | Required for the filling of 0.02 acres of wetlands for construction of a new access road. Project design will include installing a wetland equalization culvert within the new access road.  
This permit was obtained and issued December 13, 2018 and expires December 13, 2023.  
*No MDEQ Part 301 Inland Lakes and Streams Permit is required for this project |
| EGLE Part 303 Wetlands Protection Permit |                     |                     |                     |
| Part 91 OCWRC Soil Erosion Control Permit and Notice of Coverage (NOC) for NPDES Permit | Oakland County Water Resources Commission  
Michigan EGLE WRD | Submit Soil Erosion Permit Application form and all required items to:  
Oakland County Water Resources Commissioner  
Soil Erosion Unit  
One Public Works Drive  
Waterford, MI 48328 | Part 91 permit required for projects disturbing five or more acres.  
NPDES permit required for projects disturbing an area of one acre or more and/or is within 500 feet of a lake, stream, pond, open drain, river or wetland.  
Submit the NOC, the Part 91 Permit, and approved SESC plan, site location map, and permit fee to EGLE WRD through the MiWaters Online Tool at:  
https://miwaters.deq.state.mi.us/miwaters/external/home |
<table>
<thead>
<tr>
<th>Section Consultation</th>
<th>Consulted Agency</th>
<th>Contact Information</th>
<th>Consultation Details</th>
</tr>
</thead>
</table>
| USFWS Informal Section 7 Consultation | USFWS         | Mr. Scott Hicks  
U.S. Fish and Wildlife Service  
Michigan Ecological Services Field Office  
2651 Coolidge Road, Suite 101  
East Lansing, MI 48823 | Required for all federal projects that may affect listed endangered or threatened species. Proposed Action may affect but is not likely to adversely affect federally-listed Indiana bat and NLEB.  
Consultation initiated July 16, 2019; concurrence received August 9, 2019 |
| NHPA Section 106 Consultation and concurrence | Michigan SHPO | Mr. Brian D. Conway  
State Historic Preservation Officer  
Michigan State Historic Preservation Office  
Michigan State Housing Development Authority  
735 East Michigan Avenue, P.O Box 30044  
Lansing, MI 48909 | Required for all federal projects.  
Concurrence received August 15, 2019 |
| Native American Tribe Consultation | Federally Recognized Native American Tribes:  
- Hannahville Indian Community  
- Saginaw Chippewa Indian Tribe of Michigan  
- Sault Ste. Marie Tribe of Chippewa Indians of Michigan  
- Forest County Potawatomi Community of Wisconsin  
- Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin | Mr. Kenneth Meshigaud  
Chairperson  
Hannahville Indian Community  
N14911 Hannahville B1 Road  
Wilson, MI 49896  
Mr. Steve Pego  
Chief  
Saginaw Chippewa Indian Tribe of Michigan  
Tribal Office, 7070 E. Broadway  
Mt. Pleasant, MI 48858  
Ms. Colleen Medicine  
Cultural Repatriation Specialist  
Sault Ste. Marie Tribe of Chippewa Indians of Michigan  
531 Ashmun Street  
Sault Ste. Marie, MI 49783 | Required for all federal projects.  
Consultation initiated July 1, 2019 |
- Little Traverse Bay Bands of Odawa Indians
- Menominee Indian Tribe of Wisconsin
- Miami Tribe of Oklahoma
- Seneca-Cayuga Nation

Mr. Harold Frank  
Chairman  
Forest County Potawatomi Community of Wisconsin  
PO Box 340  
Crandon, WI 54520

Ms. Melinda Young  
Tribal Preservation Officer  
Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation of Wisconsin  
PO Box 67  
Lac Du Flambeau, WI 54538

Mr. Wesley Andrew  
Tribal Historic Preservation Officer  
Little Traverse Bay Bands of Odawa Indians  
7500 Odawa Circle  
Harbor Springs, MI 49740

Mr. David Grignon  
Tribal Historic Preservation Officer  
Menominee Indian Tribe of Wisconsin  
PO Box 910  
Keshena, WI 54135

Ms. Diane Hunter  
Tribal Historic Preservation Officer  
Miami Tribe of Oklahoma  
PO Box 1326  
Miami, OK 74355

Mr. William Tarrant  
Tribal Historic Preservation Officer  
Seneca-Cayuga Nation  
PO Box 45322  
Grove, OK 74345
7 LIST OF PREPARERS

U.S. Department of Veterans Affairs, Construction & Facilities Management Office

Mr. Fernando Fernández, REM
Environmental Engineer

Contractor Staff

Mabbett & Associates, Inc. Team

<table>
<thead>
<tr>
<th>Name</th>
<th>Role</th>
<th>Years of Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Glucksman, MS, LEED AP</td>
<td>Project Manager, Subject-Matter Expert, Document Preparation and Review</td>
<td>13</td>
</tr>
<tr>
<td>H. Parzen, MS</td>
<td>Document Preparation</td>
<td>1</td>
</tr>
</tbody>
</table>
8 REFERENCES


9 GLOSSARY

Sources:


Aesthetic resources: The components of the environment as perceived through the visual sense only. Aesthetic specifically refers to beauty in both form and appearance.

Affected environment: A portion of the NEPA document that succinctly describes the environment of the area(s) to be affected or created by the alternatives under consideration. Includes the environmental and regulatory setting of the proposed action.

Alternative: A reasonable way to fix the identified problem or satisfy the stated need.

Attainment area: An area that the Environmental Protection Agency has designated as being in compliance with one or more of the National Ambient Air Quality Standards (NAAQS) for sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and particulate matter. An area may be in attainment for some pollutants but not for others.

Conformity analysis: The Clean Air Act requires the Environmental Protection Agency to promulgate rules to ensure that federal actions conform to the appropriate state implementation plans (SIP) for air quality. Two sets of rules (one for transportation and one for all other actions) developed by USEPA establish the criteria and procedures governing the determination of this conformity. A conformity analysis follows these criteria and procedures to quantitatively assess whether a proposed federal action confirms with the SIP.

Council on Environmental Quality (CEQ): Established by Congress within the Executive Office of the President as part of the National Environmental Policy Act of 1969, CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives. The Council's Chair, who is appointed by the President with the advice and consent of the Senate, serves as the principal environmental policy adviser to the President. The CEQ reports annually to the President on the state of the environment, oversees federal agency implementation of the environmental impact assessment process, and acts as a referee when agencies disagree over the adequacy of such assessments.

Criteria pollutant: An air pollutant that is regulated by National Ambient Air Quality Standards. Criteria pollutants include sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and two size classes of particulate matter, PM10 and PM2.5 New pollutants may be added to, or removed from, the list of criteria pollutants as more information becomes available.

Cumulative effect (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.

Decibel (dB): A unit for expressing the relative intensity of sounds on a logarithmic scale from zero for the average least perceptible sound to about 130 for the average level at which sound causes pain to
humans. For traffic and industrial noise measurements, the A-weighted decibel (dBA), a frequency-weighted noise unit, is widely used. The A-weighted decibel scale corresponds approximately to the frequency response of the human ear and thus correlates well with the loudness perceived by people.

**Effects:** Effects and impacts, as used in NEPA, are synonymous. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect would be beneficial. There are direct effects and indirect effects. Direct effects are caused by the action and occur at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

**Endangered species:** Plants or animals that are in danger of extinction through all or a significant portion of their ranges and that have been listed as endangered by the U.S. Fish and Wildlife Service or the National Marine Fisheries Service following the procedures outlined in the *Endangered Species Act* and its implementing regulations.

**Environmental assessment (EA):** A concise public document for which a federal agency is responsible that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact; aid an agency's compliance with NEPA when no environmental impact statement is necessary; or facilitate preparation of an EIS when one is necessary. Includes brief discussions of the need for the proposal, of alternatives, of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

**Environmental impact statement (EIS):** A detailed written statement required by Section 102(2)(C) of NEPA, analyzing the environmental impacts of a proposed action, adverse effects of the project that cannot be avoided, alternative courses of action, short-term uses of the environment versus the maintenance and enhancement of long-term productivity, and any irreversible and irreplaceable commitment of resources.

**Environmental justice:** The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Executive Order 12898 directs federal agencies to make achieving environmental justice part of their missions by identifying and addressing disproportionately high and adverse effects of agency programs, policies, and activities on minority and low-income populations.

**Finding of no significant impact (FONSI):** A public document issued by a federal agency briefly presenting the reasons why an action for which the agency has prepared an environmental assessment has no potential to have a significant effect on the human environment and, thus, would not require preparation of an environmental impact statement.

**Floodplain:** The lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.
**Fugitive emissions**: Emissions that do not pass through a stack, vent, chimney, or similar opening where they could be captured by a control device. Any air pollutant emitted to the atmosphere other than from a stack. Sources of fugitive emissions include pumps; valves; flanges; seals; area sources such as ponds, lagoons, landfills, and piles of stored material (such as coal); and road construction areas or other areas where earthwork is occurring.

**Hazardous material**: Any material that poses a threat to human health and/or the environment. Hazardous materials are typically toxic, corrosive, ignitable, explosive, or chemically reactive.

**Historic property**: Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

**Impacts**: see Effects.

**Impervious surface**: A hard surface area that either prevents or retards the entry of water into the soil or causes water to run off the surface in greater quantities or at an increased rate of flow. Common impervious surfaces include, but are not limited to, rooftops, walkways, patios, driveways, parking lots, storage areas, concrete or asphalt paving, and gravel roads.

**National Ambient Air Quality Standards (NAAQS)**: Standards defining the highest allowable levels of certain pollutants in the ambient air (i.e., the outdoor air to which the public has access). Primary standards are established to protect public health; secondary standards are established to protect public welfare (for example, visibility, crops, animals, buildings).

**National Pollutant Discharge Elimination System (NPDES)**: A provision of the Clean Water Act that prohibits discharge of pollutants into waters of the United States unless a special permit is issued by the Environmental Protection Agency, a state, or, where delegated, a tribal government on an Indian reservation.

**National Register of Historic Places**: The nation’s inventory of known historic properties that have been formally listed by the National Park Service (NPS). The National Register of Historic Places is administered by the NPS on the behalf of the Secretary of the Interior. National Register listings include districts, landscapes, sites, buildings, structures, and objects that meet the set of criteria found in 36 CFR 60.4.

**No action alternative**: The alternative where current conditions and trends are projected into the future without another proposed action.

**Particulate matter (PM), PM10, PM2.5**: Any finely divided solid or liquid material, other than uncombined (that is, pure) water. A subscript denotes the upper limit of the diameter of particles included. Thus, PM10 includes only those particles equal to or less than 10 micrometers (0.0004 inch) in diameter; PM2.5 includes only those particles equal to or less than 2.5 micrometers (0.0001 inch) in diameter.

**Proposed Action**: In a NEPA document, this is the primary action being considered. Its impacts are analyzed together with the impacts from alternative ways to achieve the same objective and the required no action alternative, which means continuing with the status quo.

**Runoff**: The portion of rainfall, snow melt, or irrigation water that flows across ground surface and is eventually returned to streams. Runoff can pick up pollutants from the air or the land and carry them to streams, lakes, and oceans.
Scope: Consists of the range of actions, alternatives, and impacts to be considered in an environmental analysis. The scope of an individual statement may depend on its relationships to other statements (also see tiering).

Scoping: An early and open process for determining the extent and variety of issues to be addressed and for identifying the significant issues related to a proposed action (40 CFR §1501.7). The scoping process helps not only to identify significant environmental issues deserving of study, but also to deemphasize insignificant issues, narrowing the scope of the NEPA process accordingly, and for early identification of what are and what are not the real issues (40CFR §1500.5(d)). The scoping process identifies relevant issues related to a proposed action through the involvement of all potentially interested or affected parties (affected federal, state, and local agencies; recognized Indian tribes; interest groups, and other interested persons) in the environmental analysis and documentation.

Significantly: As used in NEPA, requires considerations of both context and intensity. Context—significance of an action must be analyzed in its current and proposed short- and long-term effects on the whole of a given resource (for example, affected region). Intensity—refers to the severity of the effect.

Solid waste: Non-liquid, non-soluble materials ranging from municipal garbage to industrial wastes that contain complex and sometimes hazardous substances. Solid wastes also include sewage sludge, agricultural refuse, demolition wastes, and mining residues. Technically, solid waste also refers to liquids and gases in containers.

Tiering: A NEPA document that tiers to another broader NEPA document in accordance with 40 CFR 1508.28 must include a finding that the conditions and environmental effects described in the broader NEPA document are still valid or address any exceptions. An EA prepared in support of an individual proposed action can be tiered to a programmatic or other broader-scope EIS. An EA may be prepared, and a FONSI reached, for a proposed action with significant effects, whether direct, indirect, or cumulative, if the environmental assessment is tiered to a broader environmental impact statement which fully analyzed those significant effects.

Wetlands: Those areas that are inundated by surface water or groundwater with a frequency sufficient to support, and under normal circumstances do, or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas.

Jurisdictional wetlands are those wetlands protected by the Clean Water Act. They must have a minimum of one positive wetland indicator from each parameter (vegetation, soil, and hydrology). The U.S. Army Corps of Engineers requires a permit to fill or dredge jurisdictional wetlands.
APPENDICES
Appendix A – Environmental Survey Reports
Appendix B - Regulatory Agency Correspondence
Appendix C - Public Involvement Documentation