## U.S. Department of Veterans Affairs

# Abraham Lincoln National Cemetery – Phase 4 Gravesite Development and Cemetery Improvements, Elwood, Illinois
# Final Environmental Assessment

**February 2024**

**Prepared for:**
U.S. Department of Veterans Affairs
Office of Construction and Facilities Management

**Prepared by:**
LRS Federal LLC

# Executive Summary

In this Final Environmental Assessment (EA), the United States (U.S.) Department of Veterans Affairs (VA) identifies, analyzes, and documents the potential physical, environmental, cultural, and socioeconomic impacts associated with VA's proposed Phase 4 expansion of the Abraham Lincoln National Cemetery (National Cemetery) in Will County, Illinois (IL).

This Final EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 United States Code 4321-4370h), the President's Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and *Environmental Effects of the Department of Veterans Affairs Actions* (38 CFR Part 26). This EA and the analysis herein are required to determine if the VA's Proposed Action would have significant environmental impacts.

## Purpose and Need

The purpose of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois and surrounding area. The Proposed Action is needed to meet the National Cemetery Administration's (NCA) goal of providing eligible Veterans and their family members with reasonable access to VA interment options.

The Proposed Action serves to further NCA's mission in honoring Veterans and their eligible family members with final resting places in national shrines and with lasting tributes that commemorate their service and sacrifice to our nation. The Proposed Action, representing Phase 4 of an eight-phase master plan, would provide additional interment capacity for Veterans and their families.

## Proposed Action

The VA Office of Construction and Facilities Management is considering implementing a phased expansion of the Abraham Lincoln National Cemetery. VA's proposed Phase 4 Gravesite Development and Improvement Project encompasses approximately 197 acres, including previously developed portions of the National Cemetery. The National Cemetery has previously undergone three phases of development and expansion as part of the Abraham Lincoln National Cemetery master plan that comprises approximately 225 acres.

The Proposed Action will support the development of additional gravesites and cemetery improvements, including stormwater management ponds and conveyances; a new maintenance facility; paved access roads; ancillary upgrades to Building 2002, Building 3003, the Administrative Building, and the Columbarium Plaza; and intersection improvements along Illinois Route 53 between West Hoff Road and Walter Strawn Drive. The expansion will provide approximately 47 acres of additional gravesites and columbaria, including 22,800 square feet of funerary niches. The construction period for the Phase 4 expansion is approximately two years with an estimated completion date in May 2026.

## No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. The Abraham Lincoln National Cemetery would remain in its current state. The No Action Alternative does not meet the purpose and need nor support NCA's goal of providing eligible Veterans and their family members with reasonable access to VA interment options. However, analysis of the No Action Alternative is required by CEQ regulations. It also provides a benchmark for comparing and analyzing the effects of the other alternatives.

## Affected Environment and Environmental Consequences

The EA describes the baseline physical, environmental, cultural, and socioeconomic conditions at the project site and the general vicinity, with emphasis on those resources potentially impacted by the

alternatives. Potential impacts on physical, environmental, cultural, and socioeconomic conditions are analyzed for each alternative. Resource areas considered in this EA are aesthetics; air quality; greenhouse gas emissions and climate change; cultural and historic resources; geology, topography, and soils; hydrology and water quality; wildlife and habitat; noise; land use; floodplains and wetlands; socioeconomics; community services, solid waste, and hazardous materials; traffic, transportation, and parking; utilities; and environmental justice. The EA also addresses the potential for generating substantial controversy and cumulative impacts.

**Table ES-1-1. Summary of Impacts and Best Management Practices**

| Resource Area | Proposed Action | No Action Alternative |
|---|---|---|
| Aesthetics | The proposed physical changes to the National Cemetery would not detract from the aesthetics. Aesthetic impacts during construction activities would be temporary and less than significant. Physical changes to the National Cemetery would be consistent with existing architecture as well as landscaping. Aesthetic impacts would be less than significant. | None |
| Air Quality | Construction activities would have short-term minor impacts related to emissions and fugitive dust. Combined construction and operation emissions would be substantially below the General Conformity maintenance area de minimis threshold. Air quality impacts would be less than significant. | None |
| Greenhouse Gas Emissions and Climate Change | Construction equipment and vehicles would emit greenhouse gases while operating. VA would use lower emitting equipment/vehicles and local contractors and minimize vehicle/equipment idling to the extent feasible. Greenhouse gas emissions and climate change effects are anticipated to be less than significant. | None |
| Cultural and Historic Resources | The Illinois State Historic Preservation Office concurred with VA's determination that the Proposed Action will not adversely affect any historic resources. Construction will primarily occur on previously disturbed ground, and the National Cemetery is a low risk for inadvertent discovery of pre-contact cultural resources and a low risk for uncovering historic-period cultural resources.<br>While the National Cemetery is eligible for inclusion in the National Register of Historic Places, the Proposed Action meets the Secretary of the Interior's Standards for Rehabilitation and will not adversely affect any historic resources. | None |
| Geology, Topography, and Soils | Ground disturbing activities would have minimal changes to topography. Ground disturbances would be stabilized during operation and all permit requirements would be met. Impacts to geology and soils would be less than significant. | None |
| Hydrology and Water Quality | On-site stormwater engineering controls to retain and manage stormwater flow would be implemented, and permit requirements | None |

| | | |
|---|---|---|
| | would be met, resulting in less than significant impacts to hydrology and downgradient water quality. | |
| Wildlife and Habitat | The National Cemetery does not contain any critical habitat for State or Federally-listed species. United States Fish and Wildlife Service (USFWS) time-of-year restrictions for clearing of vegetation, including trees, would be implemented. Identification and awareness training regarding the potential presence of eastern massasauga rattlesnake would be provided to construction personnel prior to ground disturbance. No effects to designated habitat or listed species are anticipated, resulting in less than significant impacts to wildlife and habitat. | None |
| Noise | Construction activities would result in minor short-term noise impacts. Long-term operational noise within the area of the Proposed Action would be consistent with the existing cemetery operations associated with maintenance activities and ceremonial rifle salutes. There are no significant long-term operational noise impacts. | None |
| Land Use | The National Cemetery would remain compatible with surrounding land uses, resulting in less than significant impacts. | None |
| Wetlands and Other Water Resources | No impacts to floodplains or potentially jurisdictional wetlands or waterways are anticipated. Further, no impacts within the Village of Elwood's minimum setback distance of 25-feet are proposed under the Phase 4 cemetery expansion. | None |
| Socioeconomics | There would be short-term beneficial impacts to local employment and personal income during construction activities. | None |
| Community Services | Construction activities at the National Cemetery are not expected to place additional substantial demands on police, fire, emergency services, and other community services. | None |
| Solid Waste and Hazardous Materials | During construction, the presence and use of petroleum and hazardous substances could increase the potential for accidental release or spill; however, minimization measures would make this potential impact less than significant. There would not be a long-term and significant increase in the amount of hazardous waste generated by the National Cemetery. | None |
| Traffic, Transportation, and Parking | Project activities are not anticipated to significantly impact existing or future traffic patterns surrounding the National Cemetery. Impacts to traffic during construction would be temporary and localized. | None |
| Utilities | There would be a negligible increase in the consumption of utilities, including electricity, natural gas, potable water, and | None |

| | | |
|---|---|---|
| | stormwater/sanitary sewer discharges. Impacts would be less than significant. | |
| Environmental Justice | There would be no disproportionate impacts to disadvantaged populations. | None |

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# Acronyms and Abbreviations

| | |
|---|---|
| AADT | Average Annual Daily Traffic Volume |
| AP-42 | USEPA's Compilation of Air Emissions Factors |
| APE | Area of Potential Effects |
| BCC | Birds of Conservation Concern |
| BFE | Base Flood Elevations |
| BGEPA | Bald and Golden Eagle Protection Act |
| BMP | Best Management Practice |
| CAA | Clean Air Act |
| CalEEMOD | California Emissions Estimation Model |
| CEQ | Council on Environmental Quality |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act of 1980 |
| cfh | Cubic Feet per Hour |
| CFR | Code of Federal Regulations |
| $CH_4$ | Methane |
| CLOMR | Conditional Letter of Map Revision |
| CO | Carbon Monoxide |
| $CO_2$ | Carbon Dioxide |
| ComEd | Commonwealth Edison Company |
| CWA | Clean Water Act |
| dBA | A-weighted decibel scale |
| EA | Environmental Assessment |
| EcoCAT | Ecological Compliance Assessment Tool |
| ECS | ECS Midwest LLC |
| EJSCREEN | USEPA Environmental Justice Screening and Mapping Tool |
| ESA | Endangered Species Act |
| EO | Executive Order |
| FCPC | Forest County Potawatomi Community |
| GhG | Greenhous Gas |
| HREC | Historic Recognized Environmental Condition |
| IC | Institutional Control |
| IDOT | Illinois Department of Transportation |
| IEPA | Illinois Environmental Protection Agency |
| IL | Illinois |

| | |
|---|---|
| IL TACO | Illinois Tiered Approach to Corrective Action Objectives |
| IPaC | Information for Planning and Consultation |
| JOAAP | Joliet Army Ammunition Plan |
| LOS | Level of Service |
| LRS | LRS Federal LLC |
| MAC | Maximum Allowable Concentrations for Chemical Constituents in Uncontaminated Soils |
| MBTA | Migratory Bird Treaty Act |
| MMBtu/hr | Million British Thermal Units per Hour |
| MOVES | Motor Vehicle Emission Simulator |
| MTCO2e | Metric Tons of $CO_2$ Equivalent |
| $N_2O$ | Nitrous Oxide |
| NAAQS | National Ambient Air Quality Standards |
| NCA | National Cemetery Administration |
| NEPA | National Environmental Policy Act of 1969 |
| NESHAP | National Emission Standards for Hazardous Air Pollutants |
| NHPA | National Historic Preservation Act of 1966 |
| Nicor Gas | Northern Illinois Gas Company |
| $NO_2$ | Nitrogen Dioxide |
| NOx | Nitric Oxide |
| NPL | National Priority List |
| NPS | National Parks Service |
| NPDES | National Pollutant Discharge Elimination System |
| NRCS | National Resources Conservation Service |
| NSPS | New Source Performance Standards |
| $O_3$ | Ozone |
| OSHA | Occupational Safety and Health Administration |
| Pb | Lead |
| PCB | Polychlorinated Biphenyls |
| pCi/L | Pico-curies per Liter |
| PM | Particulate Matter |
| PSD | Prevention of Significant Deterioration |
| PWD | Public Works Department |
| RCRA | Resource Conservation and Recovery Act |
| REC | Recognized Environmental Condition |
| RO | Remediation Objective |

| | |
|---|---|
| SFHA | Special Flood Hazard Area |
| SHPO | State Historic Preservation Office |
| $SO_2$ | Sulfur Dioxide |
| SPCC | Spill Prevention, Control, and Countermeasures |
| SSURGO | Soil Survey Geographic Database |
| SWCA | SWCA Environmental Consultants |
| SWPPP | Stormwater Pollution Prevention Plan |
| THPO | Tribal Historic Preservation Office |
| U.S. | United States |
| USACE | United States Army Corps of Engineers |
| USEPA | United States Environmental Protection Agency |
| USFWS | United States Fish and Wildlife Service |
| USGS | United States Geological Survey |
| UST | Underground Storage Tank |
| v/c | Volume to Capacity Ratio |
| VA | U.S. Department of Veterans Affairs |
| VOC | Volatile Organic Compound |

# 1.0 Introduction

This Final Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA; 42 United States Code [USC] 4321-4370h), the President's Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and *Environmental Effects of the Department of Veterans Affairs Actions* (38 CFR Part 26). This EA is required to determine if the United States (U.S.) Department of Veterans Affairs' (VA) Proposed Action would have significant environmental impacts. Federal agencies are required to consider the environmental and related social and economic effects of their proposed actions. This EA has additionally been prepared in accordance with relevant guidance from VA's NEPA Interim Guidance for Projects, dated September 2010.

This EA identifies, analyzes, and documents the potential physical, environmental, cultural, and socioeconomic impacts associated with VA's Proposed Action to implement a phased expansion of the Abraham Lincoln National Cemetery (National Cemetery) located at 20953 West Hoff Road in Elwood, Will County, Illinois. VA's proposed Phase 4 Gravesite Development and Improvement Project (Proposed Action) encompasses approximately 197 acres, including previously developed portions of the National Cemetery.

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

## 1.1 Background

Abraham Lincoln National Cemetery is located within the northwest area of the former U.S. Army Joliet Army Ammunition Plant grounds. In 1996, a 982-acre portion of the area was transferred from the U.S Army to the VA. On October 3, 1999, Abraham Lincoln National Cemetery was dedicated as the 117th national cemetery within the National Cemetery Administration (NCA), making the cemetery the second largest in the United States. Presently, developed portions of the 982-acre cemetery comprise an area of approximately 175 acres and accommodate approximately 30,100 interment spaces, including 14,000 gravesites, 9,000 columbaria niches, 5,500 lawn crypts, and 1,600 garden niches. Facilities additionally include a Public Information Center, four committal service shelters, memorial walkway, carillon, and kiosk grave locator.

The initial National Cemetery buildout (Phase 1) and expansion (Phase 2) have been completed and comprise an area of approximately 175 acres. Phase 3 of the eight-phase master plan is currently under construction, which will accommodate an additional 22,300 interment spaces in the northeast portion of the cemetery, representing a 20-percent increase in interment capacity. The Phase 4 expansion intends to expand and improve the National Cemetery in the northwestern portion of the existing cemetery property and provide fifteen more years of interment capacity. The proposed Phase 4 Gravesite Development and Improvement Area is bordered by Walter Strawn Drive to the north, Illinois Route 53 to the east, and previously developed portions of the National Cemetery to the east and south. South Elwood International Port Road borders the Phase 4 expansion area to the west. See Figure 1-1 for a vicinity map of the Abraham Lincoln National Cemetery.

## 1.2 Purpose and Need

The purpose of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois. The Proposed Action is needed to meet the NCA's goal of providing eligible Veterans and their family members with reasonable access to VA interment options.

The Proposed Action serves to further NCA's mission in honoring Veterans and their eligible family members with final resting places in national shrines and with lasting tributes that commemorate their service and sacrifice to our nation. The Proposed Action, representing Phase 4 of an eight-phase master plan, would provide additional interment capacity for Veterans and their families within Illinois and the surrounding Great Lakes region.

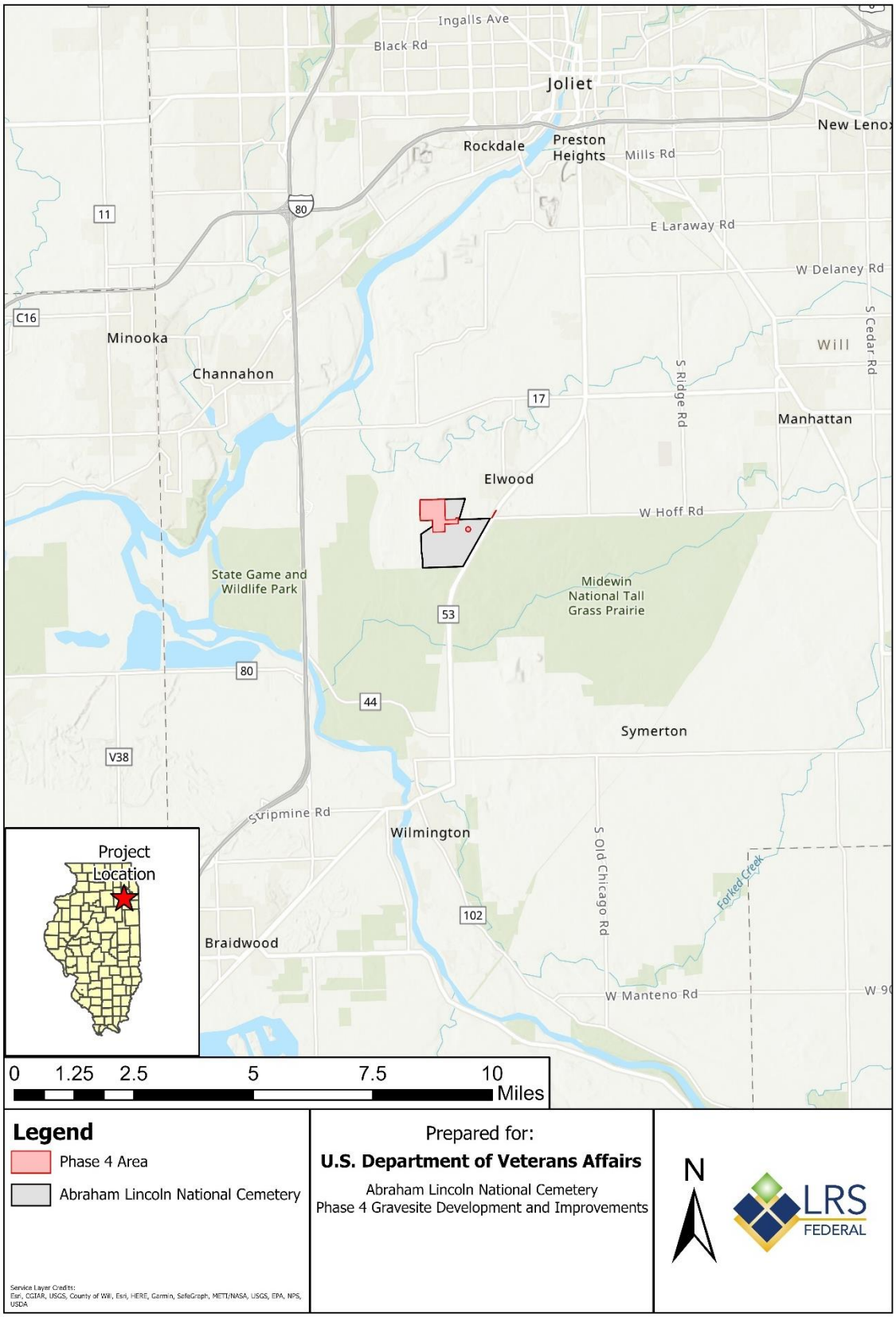



**Figure 1-1. Abraham Lincoln National Cemetery Vicinity Map**

# 2.0 Alternatives

This section describes the Proposed Action and alternatives considered by VA, including those alternatives eliminated from further analysis. NEPA and VA regulations for implementing NEPA require all reasonable alternatives to be rigorously explored and objectively evaluated.

## 2.1 Proposed Action

The VA Office of Construction and Facilities Management is considering implementing a phased expansion of the Abraham Lincoln National Cemetery. VA's proposed Phase 4 Gravesite Development and Improvement Project encompasses approximately 197 acres, including previously developed portions of the National Cemetery. The National Cemetery has previously undergone three phases of development and expansion as part of the Abraham Lincoln National Cemetery master plan that comprises approximately 225 acres.

The Proposed Action will specifically support the development of additional gravesites and cemetery improvements, including stormwater management ponds and conveyances; a new maintenance facility; paved access roads; ancillary upgrades to Building 2002, Building 3003, the Administrative Building, and the Columbarium Plaza; and intersection improvements along Illinois Route 53 between West Hoff Road and Walter Strawn Drive. The expansion will provide approximately 47 acres of additional gravesites and columbaria, including 22,800 square feet of funerary niches. The construction period for the Phase 4 expansion is approximately two years with an estimated completion date in May 2026. See Figure 2-1 for a map of the National Cemetery Phase 4 expansion study area.

## 2.2 No Action Alternative

Under the No Action Alternative, the Proposed Action would not be implemented. The Abraham Lincoln National Cemetery would remain in its current state. The No Action Alternative does not meet the purpose and need nor support NCA's goal of providing eligible Veterans and their family members with reasonable access to VA interment options. However, analysis of the No Action Alternative is required by CEQ regulations. It also provides a benchmark for comparing and analyzing the effects of the other alternatives.

## 2.3 Alternatives Eliminated from Further Consideration

Because the National Cemetery, which includes the proposed Phase 4 expansion area, was acquired for phased expansion of its facilities, the only alternatives to the Proposed Action would involve the same number and types of facilities as identified in the master plan for the cemetery. Only minor variations in the arrangement of the various facilities for each phase would be anticipated. The arrangements of various facilities would be similar and would result in impacts of similar significance as the Proposed Action; therefore, variations of VA's proposed Phase 4 Gravesite Development and Improvement Project were not analyzed.

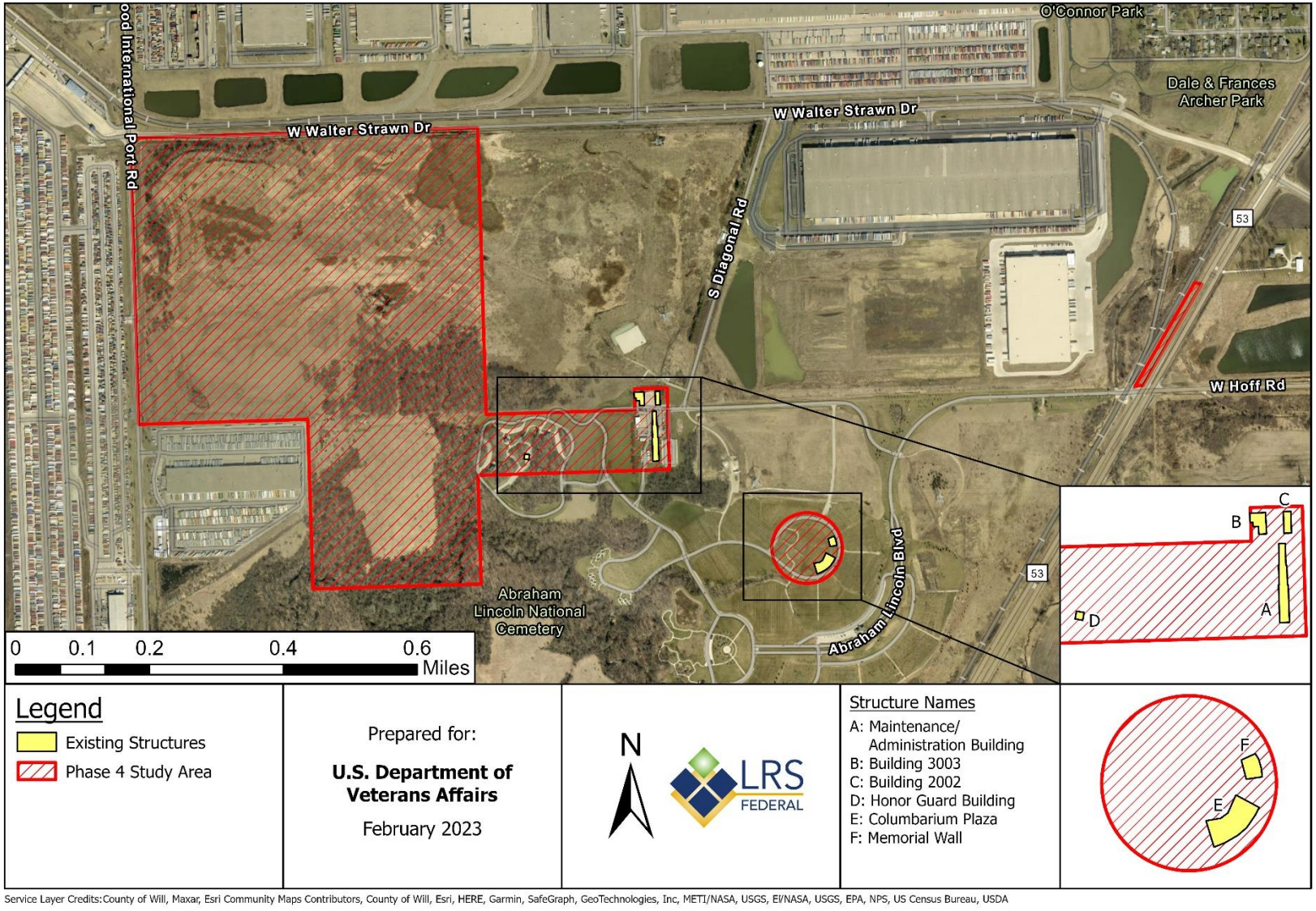



**Figure 2-1. Abraham Lincoln National Cemetery Phase 4 Expansion Study Area Map**

# 3.0 Affected Environment and Environmental Consequences

This section describes the baseline physical, environmental, cultural, and socioeconomic conditions at the proposed project site and the general vicinity, with emphasis on those resources potentially impacted.

CEQ guidelines and regulations encourage agencies to streamline environmental analyses in their EAs (CEQ, 2012) by focusing on significant issues and discussing insignificant issues only briefly, discussing impacts in proportion to their significance, and incorporating, by reference, other environmental analyses (40 CFR 1500.4(c), 1502.2(b), and 1502.21).

Impacts are identified as either significant or less than significant. The terms "effects" and "impacts" are synonymous in this EA. Where possible, impacts are identified as short-term, temporary, or long-term in relation to the length of the effect of the impact.

Resource areas considered in this EA are aesthetics; air quality; greenhouse gas emissions and climate change; cultural and historic resources; geology, topography, and soils; hydrology and water quality; wildlife and habitat; noise; land use; floodplains and wetlands; socioeconomics; community services, solid waste and hazardous materials; traffic and transportation; utilities; and environmental justice. This section also addresses the potential for generating substantial controversy and cumulative impacts.

## 3.1 Aesthetics

### 3.1.1 Affected Environment

The proposed cemetery expansion area, comprised of 197 acres, is bordered by Walter Strawn Drive to the north, South Elwood International Port Road to the west, and consists of undulating topography formed by glacial moraine ridges alternating with intermorainal creeks and valleys. The landscape is heavily modified due to historic use by the Joliet Army Ammunition Plant (JOAAP) and demolition of site structures, construction of electrical transmission lines, and land application of excess soil generated during construction for local highway projects. At around the time of demolition of site structures, earthen berms were created along the north boundary of the National Cemetery to screen the adjacent industrial views. Several intermodal and distribution facilities are located west and north of the project area.

### 3.1.2 Environmental Consequences

#### 3.1.2.1 Proposed Action

Under the Proposed Action approximately 173 acres of undeveloped land would be developed consistent with the existing aesthetics of the Abraham Lincoln National Cemetery.

Site construction and earthwork activities would temporarily convert existing vegetation to exposed soil during construction of the gravesites, columbaria, and funerary niches. Upon completion of earthwork, managed turf, landscaped features, and other planned improvements would be established and installed.

Construction activities temporarily affecting aesthetics may include parked construction equipment, excavation/grading, heavy equipment and contractor vehicles using the adjoining roads, and perimeter control/silt fences surrounding the project area. The presence of construction equipment during the construction of the cemetery expansion and improvements would have a minor adverse effect on the visual quality of the area for visitors to the cemetery. Construction activities would be conducted with consideration for interment services, and impacts would be temporary and minor. The location of the expansion site is likely far enough away from residential areas that it would have minimal to negligible effects on the visual quality of the area for nearby residents. Aesthetic changes to the expansion site likely

would be visible from the existing cemetery (north and west of the site) and I-215 (east of the site). The number of visual receptors are relatively small; therefore, the construction impacts would be considered short-term and minor.

Following construction into the operational phase, the appearance of the Phase 4 expansion area would improve dramatically and have long-term beneficial impacts to aesthetics. Construction equipment would be removed, construction contractor traffic would subside, and temporary effects experienced would be minimized. Exposed soil would be graded to the design standard, and the area would be planted with native vegetation to prevent erosion and reduce water consumption. Turf grass would be planted in the sections designated for casket plots, as well as the assembly areas surrounding the memorial walls, and where the columbarium would be located. Silt fences would be removed after final stabilization of vegetation.

#### 3.1.2.2 No Action Alternative

The No Action Alternative would have minor, adverse effects on aesthetics. Improvements to, and expansion of, the cemetery would not occur, resulting in no change from the baseline condition. Improvements to roadways and drainage systems on the existing cemetery would not occur, roads could eventually deteriorate, and standing water would intermittently collect at certain areas of the cemetery. The aesthetic benefits of developing the undeveloped site into a National Cemetery would not occur. These impacts on aesthetics would be considered less than significant.

## 3.2 Air Quality

Air quality refers to the degree of pollution in the air, often assessed by measuring concentrations of pollutants and comparing them to health-based limits set by the U.S. Environmental Protection Agency (USEPA) under the Clean Air Act (CAA) and its associated amendments. Air pollution can adversely affect communities located nearby to stationary and mobile combustion equipment, painting and solvent use areas, and construction/demolition activities that generate fugitive dust.

### 3.2.1 Affected Environment

The Illinois Environmental Protection Agency (IEPA) Bureau of Air is delegated CAA enforcement authority by USEPA for air emission sources operating in the State of Illinois.

The National Primary and Secondary Ambient Air Quality Standards (NAAQS) of the CAA are set by the USEPA to limit the concentration of air pollutants considered harmful to public health and the environment. Pollutants regulated under the NAAQS include ozone ($O_3$), particulate matter (PM), carbon monoxide (CO), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), and lead (Pb). $O_3$ is formed in the atmosphere as a product when nitric oxide (NOx), Volatile Organic Compounds (VOCs), and light react. As such, $O_3$ emission reductions are met by reducing emissions of its precursors, $NO_X$ and VOCs. The NAAQS limit PM levels according to particle diameter, with separate standards for coarse ($PM_{10}$) and fine ($PM_{2.5}$) particulate matter. An area's attainment status with the NAAQS is determined by measuring ambient air quality at the county level. An area can either be designated as an *attainment*, *non-attainment*, or *maintenance* area with the NAAQS.

The Abraham Lincoln National Cemetery is located in Will County, Illinois which is a non-attainment area for one ozone standard, as listed in the USEPA's Green Book (USEPA, 2023c). General Conformity Determinations are required for Federal projects that would meet or exceed the *de minimis* emission thresholds for non-attainment or maintenance areas. The applicable *de minimis* thresholds for Will County are shown in Table 3-1 below.

All new and existing sources of air pollution are subject to ambient air quality regulation.

**Table 3-1. Will County NAAQS Attainment Status and General Conformity Rule *De Minimis* Threshold**

| Criteria Pollutant | Will County Attainment Status | Pollutant or Precursor of Concern | *De Minimis* [a] Emission Rate (tons/year) |
|---|---|---|---|
| Ozone ($O_3$) | Nonattainment of the 8-hour 2015 standard (Moderate)<br>Maintenance for the 8-hour 2008 standard (Serious) | $NO_x$ | 100 |
| | Maintenance for the 8-hour 1997 standard[b]<br>Maintenance of the 1-hour 1979 standard[c] | VOC | 50 |
| Particulate Matter ≤ 2.5 microns ($PM_{2.5}$) | Maintenance for the 1997 standard[d] | $PM_{2.5}$ | 100 |
| | | $NO_x$ | 100 |
| | | $SO_2$ | 100 |
| | | Ammonia | 100 |

| Criteria Pollutant | Will County Attainment Status | Pollutant or Precursor of Concern | *De Minimis* [a] Emission Rate (tons/year) |
|---|---|---|---|
| Particulate Matter ≤ 10 microns ($PM_{10}$) | Attainment | $PM_{10}$ | N/A |
| Lead (Pb) | Attainment | Pb | N/A |
| Sulfur Dioxide ($SO_2$) | Attainment | $SO_2$ | N/A |
| Carbon Monoxide (CO) | Attainment | CO | N/A |
| Nitrogen Dioxide ($NO_2$) | Attainment | $NO_2$ | N/A |

[a] *De minimis* emission rates cannot be exceeded for Federal actions taking place in non-attainment and maintenance areas, without conducting a General Conformity Determination, as provided in 40 CFR 93.153(b).
[b] The 1997 8-hour ozone standard was revoked 4/6/2015.
[c] The 1979 8-hour ozone standard was revoked 6/5/2005.
[d] The 1997 annual $PM_{2.5}$ standard was revoked in nonattainment and maintenance areas for that NAAQS. For additional information see the PM-2.5 NAAQS State Implementation Plan Requirements Final Rule, effective October 24, 2016 (81 FR 58009).
Sources: (USEPA, 2023c); 40 CFR 93.153

## 3.2.2 Environmental Consequences

### 3.2.2.1 Proposed Action

Implementation of the Proposed Action would result in temporary impacts to air quality from fugitive dust associated with land clearing, grading, and construction activities. New stationary air emission sources constructed as a result of the Proposed Action may include an emergency backup generator that will be purchased, installed, and operated in accordance with the Reciprocating Internal Combustion Engine National Emission Standards for Hazardous Air Pollutants (NESHAP) requirements contained in 40 CFR 63 Subpart ZZZZ, as well as the applicable New Source Performance Standards (NSPS) of 40 CFR 60.

Emissions from heavy equipment and on-road vehicles were estimated using the USEPA's third version of the Motor Vehicle Emission Simulator (MOVES) model. MOVES is USEPA's official regulatory model for on-road mobile emissions. The maximum annual projected criteria emissions from construction activities and the methodologies used to calculate these emissions are included in Appendix C and are summarized in Table 3-2 below.

**Table 3-2. Projected Criteria Pollutant Emissions from the Proposed Action**

| Activity | VOC Emissions (tpy) | NOx Emissions (tpy) | $SO_2$ Emissions (tpy) | CO Emissions (tpy) | $PM_{10}$ Emissions (tpy) | $PM_{2.5}$ Emissions (tpy) |
|---|---|---|---|---|---|---|
| Land Clearing | - | - | - | - | 0.680 | 0.236 |
| Grading | - | - | - | - | 0.452 | 0.248 |
| Debris Loading | - | - | - | - | 0.163 | 0.0247 |
| Debris Unloading | - | - | - | - | 0.163 | 0.0247 |
| Non-Road Exhaust | 0.087 | 0.768 | 0.002 | 0.445 | 0.075 | 0.073 |
| On-Road Vehicle Exhaust | 0.040 | 0.332 | - | 0.294 | 0.018 | 0.056 |
| *De Minimis Threshold* | *50* | *100* | *100* | *100* | *N/A* | *100* |
| **Total** | **0.126** | **1.100** | **0.0779** | **0.739** | **1.55** | **0.662** |

Based on the results shown in Table 3-2, a General Conformity Determination is not anticipated to be required, nor is Prevention of Significant Deterioration (PSD) permitting for pollutants Will County is in attainment for.

Illinois EPA administers a vehicle emissions inspection program promulgated under the Illinois Vehicle Emissions Inspection Law of 2005 to reduce air pollution from motor vehicles and work towards achieving attainment with the ozone NAAQS. As such, any on-road passenger vehicles associated with the construction and/or operation of the Proposed Action are expected to be in compliance with the IEPA vehicle emission testing requirements to reduce ozone pollution.

#### 3.2.2.2 No Action Alternative

Under the No Action Alternative, construction of the Phase 4 Abraham Lincoln National Cemetery gravesite development and cemetery improvements would not occur. No impacts to air quality would occur as a result of VA's actions.

## 3.3 Greenhouse Gas Emissions and Climate Change

Greenhouse gas (GhG) emissions contribute to climate change and include, but are not limited to, carbon dioxide ($CO_2$), methane ($CH_4$), and nitrous oxide ($N_2O$).

This section was prepared in accordance with the CEQ's interim guidance issued on January 9, 2023: *NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*.

### 3.3.1 Affected Environment

The CEQ's interim guidance issued on January 9, 2023: *NEPA Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*, requires analysis of reasonably foreseeable direct and indirect GhG emissions and reductions of the Proposed Action and alternatives related to climate action commitments and goals (CEQ, 2023).

Under Executive Order (EO) 14057, *Catalyzing Clean Energy Industries and Jobs through Federal Sustainability*, the Federal government is required to reduce its Scope 1 and Scope 2 GhG emissions by 65 percent (compared to a 2008 baseline) by 2030. Scope 1 GhG emissions are directly emitted by a facility, whereas Scope 2 GhG emissions are indirect emissions associated with the purchase of electricity, steam, heat, or cooling.

The primary source of Scope 1 GhG emissions at the Abraham Lincoln National Cemetery is a natural gas-powered emergency generator near the Administration/Maintenance Building.

The National Cemetery does not emit more than 25,000 metric tons of $CO_2$ equivalent (MTCO2e) annually and, as such, is not currently required to report their annual GhG emissions to USEPA under the Federal Greenhouse Gas Reporting Program.

Regarding potential future climate change impacts, Illinois is expected to experience increased flooding, increased rainfall intensity, and more frequent droughts as a result of climate change (Illinois State Climatologist Office, 2021).

### 3.3.2 Environmental Consequences

In this section, impacts from a changing climate to the Proposed Action and No Action Alternative will be analyzed. Additionally, the direct and indirect effects of the Proposed Action and No Action Alternative on climate change will be analyzed. Analysis of the Proposed Action and No Action Alternative will cover (1) GhG emissions, (2) the action's effects on climate change, and (3) climate change effects to the action.

#### 3.3.2.1 Proposed Action

**Greenhouse Gas Emissions**

GhG emissions associated with the Proposed Action include emissions from construction equipment, new stationary equipment, and mobile vehicles. Estimated GhG emissions for the Proposed Action were calculated using MOVES, the USEPA's Compilation of Air Emissions Factors (AP-42), and the California Emissions Estimation Model (CalEEMod). Detailed calculation descriptions are provided in Appendix C. A summary of the results is also provided in Table 3-3 below.

**Table 3-3. Greenhouse Gas Emissions from the Proposed Action**

| Activity | Emissions | | |
|---|---|---|---|
| | $CH_4$ (MT)[1] | $CO_2$ (MT) | Total ($MTCO_2e$) |
| Non-Road Exhaust | 0.004 | 704.2 | 704.3 |
| On-Road Vehicle Exhaust | - | 196.0 | 196.0 |
| Total | 0.004 | 900.2 | 900.3 |
| [1] Methane has a global warming potential of 25 compared to $CO_2$ | | | |

Best management practices that VA will consider implementing under the Proposed Action include using lower-GHG-emitting technologies, procuring construction materials with lower amounts of embodied

carbon, and utilizing local contractors and shared transportation where feasible to minimize mileage traveled by workers to and from the site.

**Effects on Climate Change**

The GhG emissions associated with the Proposed Action are minimal and not expected to exacerbate any of the current climate change effects that could be experienced in Will County.

**Climate Change Effects on the Action**

Extreme heat events due to climate change could cause work stoppages and delays to keep employees safe from heat illness, as regulated by the Occupational Safety and Health Administration (OSHA). Extreme wind events could cause increased fugitive dust (particulate matter) emissions that may require curtailment of construction and demolition activities to prevent impacts to air quality. Increased precipitation events could exacerbate erosion and inundate sediment controls deployed for the project. Erosion and sediment control strategies may require adjustments based on extreme weather events.

#### 3.3.2.2 No Action Alternative

**Greenhouse Gas Emissions**

The No Action Alternative involves leaving the northwestern extent of the National Cemetery undeveloped and would not include any of the ancillary facility upgrades proposed or construction of a new maintenance facility.

**Effects on Climate Change**

There are no climate change effects anticipated as a result of the No Action Alternative.

**Climate Change Effects on the Action**

Under the No Action Alternative, improvements to site stormwater conveyance systems would not occur. Increases in precipitation intensity and frequency of flooding events could inundate existing stormwater infrastructure at the National Cemetery.

## 3.4 Cultural and Historic Resources

Historic properties are defined by the National Historic Preservation Act (NHPA) as properties including prehistoric and historic sites, structures, buildings, objects, districts, or any other physical evidence of human activity associated with important historic events, with persons important in history, representing the work of a master or exemplary as a type, or with the potential to yield information important to history or prehistory. Cultural resources are protected through several Federal laws and associated regulations, including the NHPA of 1966, the Archaeological and Historic Preservation Act of 1974, the American Indian Religious Freedom Act of 1978, the Archaeological Resources Protection Act of 1979, and the Native American Graves Protection and Repatriation Act of 1990.

Section 106 of the NHPA and its implementing regulations, 36 CFR Part 800, requires an assessment of the potential impact of an undertaking on historic properties that are within the proposed project's area of potential effects (APE), which is defined as the geographic area "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist."

Analysis of potential effects on cultural resources considers both direct and indirect effects. Direct effects may be the result of physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the importance of the resource; introducing visual, atmospheric, or audible elements that are out of character for the period the resource represents (thereby altering the setting); or neglecting the resource to the extent that it deteriorates or is

destroyed. An adverse effect according to NHPA Section 106 Criteria for Adverse Effect (36 CFR 800.5) is if an undertaking (action) diminishes any of the characteristics that qualify a property for inclusion in the National Register of Historic Places (NRHP). These effects are analyzed according to the integrity of the property's location, design, setting, materials, workmanship, feeling, and association.

### 3.4.1 Affected Environment

Pursuant to the NHPA and its implementing regulations, VA has determined that the APE for the undertaking consists of approximately 197 acres of land, which includes 23.75 acres of the existing National Cemetery, 173 acres of undeveloped land northwest of the National Cemetery, and 0.62 acres along Illinois Route 53 between West Hoff Road and Walter Strawn Drive/IRA Morgan Street (Figure 3-1). The Phase 4 APE is bordered by West Walter Strawn Drive to the north and by Illinois Route 53 to the west. The APE for the undertaking is depicted in Figure 3-1.

The Abraham Lincoln National Cemetery is a historic district eligible for the NRHP, inclusive of tracts of land recently acquired but not yet developed for cemetery purposes. Despite the National Cemetery having been established in 2000, according to the National Park Service's (NPS) *National Register Eligibility of National Cemeteries – A Clarification of Policy (9/8/2011)*, "all national cemeteries are considered exceptionally significant as a result of their Congressional designation as nationally significant places of burial and commemoration. This means they meet the special requirements set forth in the National Register Criterion Considerations for cemeteries, graves, commemorative properties, and resources less than 50 years of age." The following elements involved in the undertaking were determined to be contributing resources within the historic district:

- Columbarium #1
- Columbarium #2
- Columbarium #3
- Columbarium #4
- Storage Outbuilding 3003
- Curb & Gutter, Roads, and Irrigation Systems

Provided the level of disturbance that has occurred within the APE from construction of the JOAAP ordnance plants in the 1940s and from remediation and conservation efforts in the 1990s, VA concluded that there was a low to moderate chance of identifying intact buried cultural resources during the proposed undertaking, and there are no archaeological sites that are historic properties within the APE.

While conducting a geoarchaeological assessment within the APE, which included monitoring the mechanical excavation of 35 geotechnical bores and placing six shovel tests within the previously recorded locations of archaeological sites 11WI1304, 11WI1307, 11WI1308, 11WI1309, and 11WI1310, all soils observed showed evidence of significant disturbances. Shovel tests displayed truncated soil profiles, heavily disturbed soils, or fill. No cultural materials were observed in the shovel tests. For this reason, VA determined that the undertaking would have no adverse effect on historic properties, as the previously recorded archaeological sites were not identifiable in the field. As such, VA found that there is only one historic property present within the APE, the Abraham Lincoln National Cemetery, and it would not be adversely affected by the undertaking.

Therefore, in accordance with 36 CFR 800.5(b), VA concluded that the undertaking would result in no adverse effect to historic properties (SWCA, 2023b). Consultation with the Illinois State Historic Preservation Office (SHPO) was initiated by VA on September 5, 2023. The Illinois SHPO had no objection to the undertaking of the Proposed Action, as provided in the concurrence letter dated October 12, 2023 (Appendix B). Further, Illinois SHPO concurred that no historic archaeological properties are

known to exist within the APE and that the Proposed Action meets the Secretary of the Interior's Standards for Rehabilitation and will not adversely affect any historic resources. Illinois SHPO requested to be notified of any inadvertent archaeological discoveries during construction. The Will County Land Use Department, Historic Preservation Commission also responded with a letter deferring to the Illinois SHPO for their final assessment of resources within the APE.

During the development of this EA, VA consulted with several Federally-recognized Native American Tribes that have possible interest in the project area. As part of the public outreach effort, letters were disseminated to the Tribes listed in Section 5.2. One comment was received by the Forest County Potawatomi Community (FCPC) Tribal Historic Preservation Office (THPO) who responded with a letter of concurrence and requested that the FCPC and SHPO be contacted in the event of an inadvertent discovery of human remains or archaeologically significant material during the project. Additionally, comments were received from the Miami Tribe of Oklahoma during the public outreach effort who requested further information on the archaeological survey completed and protection measures for archaeological sites. Copies of all correspondence, including any comments and responses received, can be found in Appendix B.


**Figure 3-1. Map Depicting the Abraham Lincoln National Cemetery Phase 4 Development Project's Area of Potential Effects**

### 3.4.2 Environmental Consequences

#### 3.4.2.1 Proposed Action

Although Storage Outbuilding 3003, several columbaria, and other infrastructure involved in the undertaking were identified as contributing resources to the Abraham Lincoln National Cemetery historic district, the Illinois SHPO determined, because this undertaking proposes to appropriately repair these existing facilities, that the Proposed Action meets the Secretary of the Interior's Standards for Rehabilitation and would not adversely affect any historic resources. The Illinois SHPO concurred that the proposed work to the unimproved areas is not an adverse effect because, according to the 2011 NPS clarification, "Unimproved acreage within the cemetery boundaries that is being held for future use is considered noncontributing."

If the Proposed Action's scope of work changes from that which was submitted to and approved by the Illinois SHPO, VA will notify the Illinois SHPO of the changes for review and comment.

Construction and demolition activities would adhere to all Federal cultural preservation regulations. In the event human remains or other cultural items, as defined by the Native American Graves Protection and Repatriation Act, are found during construction or operation of the National Cemetery, work would be halted in the area and the appropriate authorities and Tribes would be contacted.

As such, the Proposed Action is not expected to have an adverse effect on cultural or historic resources.

#### 3.4.2.2 No Action Alternative

Selection of the No Action Alternative would not result in any adverse effects to any documented or future undocumented cultural resources.

## 3.5 Geology, Topography, and Soils

### 3.5.1 Affected Environment

The geology of an area is characterized by the existing rocks and sediment present. Geologic materials interact with overlying soils by providing minerals and nutrients through weathering. The physical characteristics of soils and underlying bedrock can affect the suitability of a site for development and dictate the types of precautionary measures that should be implemented during earth disturbance activities.

Radon is an invisible, radioactive gas generated during the breakdown of uranium in rocks and soils and tends to accumulate in below-grade areas of buildings, where the air circulation is restricted (USEPA, 2023b). Will County is designated as a Zone 2 area for radon, meaning predicted average indoor screening levels are at or below the USEPA's 4.0 pico-Curies per liter action level.

According to the National Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO), the predominant soil association found within the vicinity of the project area is the Ozaukee silt loam association, with six to twelve percent slopes, as depicted in Figure 3-2.

Topography indicates the relative position and elevation of natural and man-made features within an area. Changes to the topography of an area can affect surface and subsurface water pathways, potentially increasing sedimentation, impacting stormwater runoff, and ultimately affecting water quality in nearby waterways and wetlands. Impacts to water resources are analyzed in Section 3.6.

Elevation in the study area ranges from nearly 577 feet above mid sea level (amsl) to 646 feet amsl. The general topography has mild slopes throughout the study area. A total of 12.1 acres of the study area possesses slopes above 12% (Jacobs & LRS, 2023; USDA, 2023). Soils data obtained from the NRCS

SSURGO and topographic data obtained from the Will County GIS Department were utilized for the existing topographic map, depicted in Figure 3-3 below.

Federal agencies are required to evaluate impacts to prime or unique farmlands defined in the Farmland Protection Policy Act using U.S. Department of Agriculture (USDA) scoring criteria for identifying effects of conversion. During the Phase 3 Expansion Project, farmlands within the Phase 3 area were rated with preliminary farmland scores using USDA scoring criteria. The site was rated below the threshold for further consideration and protection (Anderson Engineering of Minnesota, LLC, 2019). Based on the similarities and proximity of the Phase 3 and Phase 4 project areas, and the results of the preliminary screening of farmlands for the Phase 3 expansion, the conversion of undeveloped land under the Proposed Action is expected to result in a negligible impact to farmland resources.

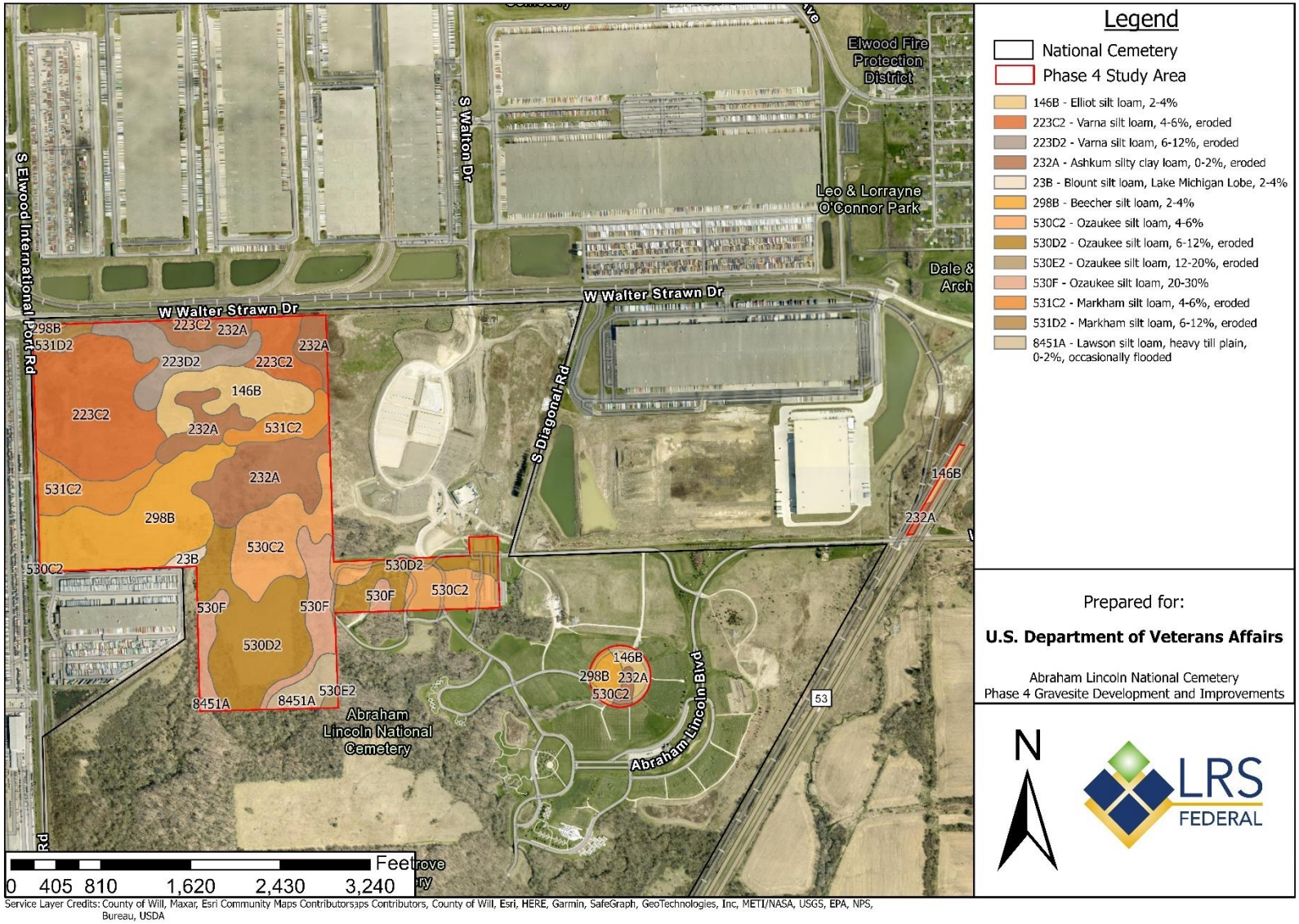



**Figure 3-2. Abraham Lincoln National Cemetery Phase 4 Existing Soils**

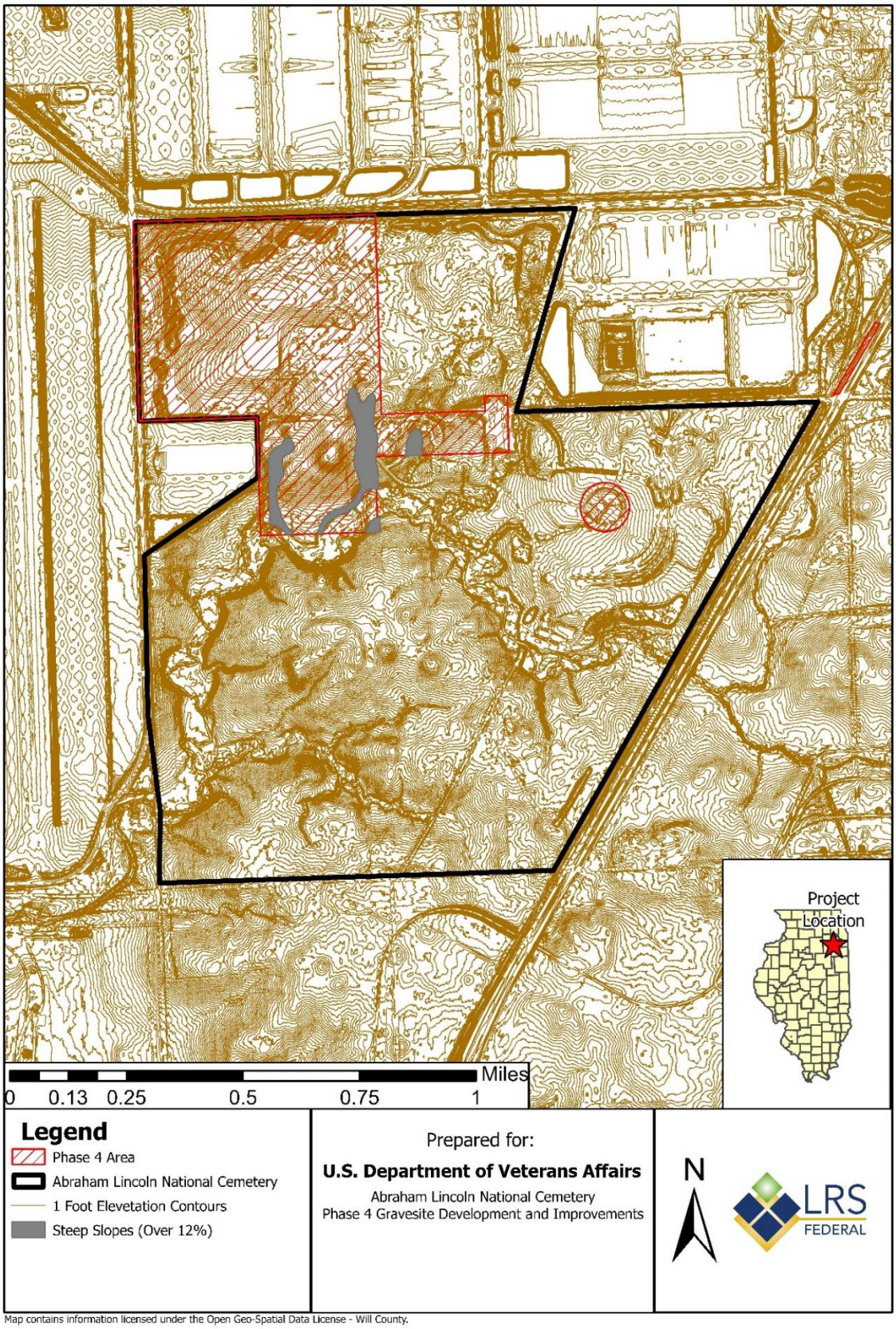



**Figure 3-3. Abraham Lincoln National Cemetery Topography**

### 3.5.2 Environmental Consequences

#### 3.5.2.1 Proposed Action

Excavation and leveling activities would change the topographic features of the study area, influencing drainage patterns. However, final site grades are anticipated to follow or approximately match the existing site topography.

Short term soil erosion and sedimentation effects could occur as the proposed facilities are constructed under the Proposed Action. Grading would strip current vegetation, disrupt the surface and soil profiles, and cause soil compaction.

Construction and demolition debris that cannot be recycled or salvaged, would be disposed of offsite in accordance with Federal, State, and local waste management laws. Fill would be reutilized onsite for grading and suitable fill material would be imported as needed to level the site and achieve standards following excavation.

As such, impacts to topography, geology, and soils are expected to be less than significant.

#### 3.5.2.2 No Action Alternative

Under the No Action Alternative, the Phase 4 expansion would not occur. As such, there would be no impacts to geology, topography, or soils at the site as a result of the No Action Alternative.

## 3.6 Hydrology and Water Quality

### 3.6.1 Affected Environment

Federal regulations related to stormwater include the Clean Water Act of 1972, amended in 1987, which established the National Pollutant Discharge Elimination System (NPDES) and Safe Drinking Water Act of 1974. Permits associated with these programs are issued through the IEPA.

Construction activities in Illinois that disturb one or more acres of land are subject to the conditions of the IEPA General Storm Water Permit for Construction Site Activities (renewed September 22, 2023). The general permit requires development of a Stormwater Pollution Prevention Plan (SWPPP), including details or drawings that show proper installation of controls and best management practices (BMPs). The Illinois Urban Manual or other similar documents are required to be used for developing the appropriate management practices, controls, or revisions of the plan.

Any site which discharges directly to an impaired water identified on the IEPA website for 303(d) listing for suspended solids, turbidity, or siltation requires the SWPPP to be designed for a storm event equal to or greater than a 25-year-24-hour rainfall event.

Additionally, stormwater discharges from construction activities within 50 feet of a Water of the United States are required to provide a 50-foot undisturbed natural buffer between the construction activity and the Waters of the United States or provide additional erosion and sediment controls within that area.

As directed by the Illinois Groundwater Protection Act, the IEPA in partnership with the Illinois Department of Natural Resources regulates wellhead protection areas, which are drinking water source areas for the public water supply. The study area is not located in a wellhead protection area and therefore, is not subject to additional groundwater protections. Before a design is finalized, it is recommended that geotechnical investigations of the sites in consideration be performed to ensure adequate depth-to-groundwater separation and in situ infiltration rates.

According to the Illinois Groundwater Protection Program Biennial Report, the study area is not located within a Class III: Special Resource Groundwater Area. However, Will County is included in the

Northeastern Region, which is an IEPA-established priority regional groundwater protection planning region.

## 3.6.2 Environmental Consequences

### 3.6.2.1 Proposed Action

The Proposed Action would necessitate construction and post-construction BMPs to address erosion and sedimentation control during construction, as well as stormwater mitigation throughout the design life. The onsite stormwater facilities would adhere to specific operations and maintenance procedures to ensure proper, long-term functionality.

The cumulative actions of the Proposed Action projects would convert 7.6 acres of pervious cover (overall) to impervious cover (hard surface). Currently, Phase 4 is anticipated to trigger stormwater requirements applicable to development, resulting in the need to manage site runoff with detention storage.

The detention storage volume is calculated as the volume necessary to detain the post-development 100-year, 24-hour runoff and to discharge the runoff at a rate of 0.15 cubic feet per second per acre of development in accordance with local regulations. Based on the calculations provided in the 2023 Hydrology and Stormwater Report, 54.9 acre-feet of detention storage is estimated to be required as part of the Proposed Action (Jacobs & LRS, 2023).

The runoff from the Proposed Action is not anticipated to directly discharge to an impaired water. Instead, the runoff will be conveyed through local storm sewers and culverts to Grant Creek, a tributary to the Des Plaines River.

The site topography and available land within the study area accommodate above-grade facilities (ponds, basins, and swales) as feasible and cost-effective stormwater management options.

Additionally, as necessary, and as appropriate, VA would implement the following minimization, avoidance, and management measures to reduce potential adverse effects to surface water resources to acceptable, less-than-significant levels. These measures are fully developed as part of this EA, concurrent with the site design efforts. VA has considered the following State and local policies and would incorporate them in the final design as follows:

- Implement all pertinent Federal, State, and local regulatory requirements and use environmentally sensitive site design, stormwater pollution prevention controls, good engineering practices, and construction BMPs.
- Implement appropriate groundwater engineering controls and dewatering practices should groundwater be encountered during construction.
- Locate machinery servicing and refueling areas away from streambeds and washes to reduce the possibility and minimize the impacts of accidental spills or discharges.

The listed minimization measures and BMPs would ensure construction and operation of the Proposed Action would result in short-term and less-than-significant adverse impacts to surface water and groundwater.

### 3.6.2.2 No Action Alternative

Under the No Action Alternative, no additional construction by VA would occur and there would be no effects to water resources beyond the current usage at the National Cemetery.

# 3.7 Wildlife and Habitat

Biological resources include living, native, or naturalized plant and animal species and the habitats within which they occur. Plant associations are referred to generally as vegetation, and animal species are referred to generally as wildlife. Habitat can be defined as the resources and conditions present in an area that support a plant or animal. This EA analyzes threatened, endangered, and otherwise protected species that have potential to occur near the Phase 4 Development and Improvements area. For purposes of this EA, biological resources are divided into four major categories: (1) Federal- and State-listed protected species, (2) migratory birds of conservation concern (BCC), (3) bald and golden eagles, and (4) vegetation.

## 3.7.1 Affected Environment

### 3.7.1.1 Federal and State Listed Species

Under the Endangered Species Act of 1973 (ESA), Federal agencies must ensure that any action they carry out or authorize is not likely to jeopardize the continued existence of any listed species or destroy or adversely modify its critical habitat.

The USFWS Information for Planning and Consultation (IPaC) system data, the USFWS Critical Habitat Portal, and the Illinois Department of Natural Resources Ecological Compliance Assessment Tool (EcoCAT) were all utilized to identify critical habitat and/or special-status species with potential to occur in the project area. Additionally, SWCA Environmental Consultants (SWCA) conducted a field reconnaissance of the project area on March 10, 2023, to evaluate the absence or likely presence of potentially suitable habitat for listed or protected species identified as potentially occurring within the project area (Appendix D). The USFWS IPaC report indicated four Federally threatened, two Federally endangered, and one candidate species with potential to occur in the project area. The EcoCAT report did not identify any known occurrences of State-listed species in the project area; however, several of the Federally-listed species included in the USFWS IPaC report are also State-listed species, as depicted in Table 3-4 (SWCA, 2023a).

In summary, the following Federally- and/or State-listed species have potential to occur within the project area (Table 3-4).

- Eastern massasauga rattlesnake (Federally threatened, State endangered)
- Northern long-eared bat (Federally and State endangered)
- Black-billed cuckoo (State threatened, BCC)

One Federal candidate species, the monarch butterfly, has potential to occur in the project area. Monarch butterflies are designated as a Federal candidate species. Candidate species do not receive statutory protection under the ESA, and neither ESA Section 7 nor its implementing regulations contain requirements for Federal agencies regarding candidate species.

### 3.7.1.2 Migratory Birds of Conservation Concern

The USFWS IPaC report indicated 14 BCCs with potential to occur in the project area (Table 3-4). All 14 species are protected under the Migratory Bird Treaty Act (MBTA). Birds of Conservation Concern are species that are priorities for conservation action associated with ecological Bird Conservation Regions. Designation as a BCC, in itself, does not carry with it regulatory protections. However, BCC species are protected under the MBTA. Under the MBTA, unless permitted by regulations, it is unlawful to 1) pursue, hunt, take, capture, or kill; 2) attempt to take, capture, or kill; and 3) possess, offer to sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. USFWS regulations broadly define “take”

under the MBTA to mean "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." Under the MBTA, "take" does not include habitat loss or alteration.

The USFWS IPaC identified bald eagles as having potential to occur in the project area. Bald eagles are protected under both the MBTA and the Bald and Golden Eagle Protection Act (BGEPA). The BGEPA prohibits the take, possession, and transportation of bald and golden eagles or their parts, eggs, or nests without authorization (16 USC 668–688(d)). The USFWS may issue permits to take bald or golden eagles or their nests for certain activities, provided the taking is compatible with the preservation of these species (50 CFR Part 22).

The following BCC species, which are afforded protection under the MBTA, have potential to occur within the project area (Table 3-4).

- Bald eagle (also protected by the BGEPA)
- Bobolink
- Chimney swift
- Red-headed woodpecker
- Wood thrush

#### 3.7.1.3 Vegetation

Vegetation provides habitat for wildlife species and helps maintain the water quality of nearby waterways by filtering and reducing the flow of runoff. Vegetation also helps prevent erosion.

Three general vegetative communities exist within the project area: upland deciduous forest (37.7 acres); emergent and woody wetlands (< 1 acre); and open grassland (54.3 acres). The remainder of the project area comprises open pasture, cultivated crops, and developed land cover. The upland deciduous forest is dominated by oak (*Quercus spp*.) and hickory (*Carya spp*.) with a thin and open understory. The wetland areas are dominated by common reed (*Phragmites australis*) and reed canary grass (*Phalaris arundinacea*) while the open grassland is heavily disturbed with species such as goldenrod (*Solidago altissima*), smooth brome (*Bromus inermis*), common reed, and locust (*Robinia sp*.).

**Table 3-4. Evaluation of Special-Status Species with Potential to Occur within the Abraham Lincoln National Cemetery**

| **Common Name (*Scientific Name*)** | **Status*** | **Range or Habitat Requirements** | **Potential For Occurrence in Project Area** |
|---|---|---|---|
| **Plants** | | | |
| Eastern prairie fringed orchid (*Platanthera leucophaea*) | FT, SE | This species occurs in mesic prairies to wetlands including sedge meadows, marsh edges, and bogs. This orchid species requires full sun and open wetland habitat. | Unlikely to occur. |
| Lakeside daisy (*Hymenoxys herbacea*) | FT, SE | This species thrives in alvar habitat, which includes sparsely vegetated rock barrens with shallow soils. | Unlikely to occur. |
| Leafy prairie-clover (*Dalea foliosa*) | FE, SE | This species is restricted to thin-soiled (< 4.5 decimeters), wet or moist, open dolomite prairies on river terraces in the northeastern part of Illinois. | Unlikely to occur. |
| **Invertebrates** | | | |
| Hine's emerald dragonfly (*Somatochlora hineana*) | FE, SE | This species occurs in spring-fed wetlands, wet meadows, and marshes. | Unlikely to occur. |
| Monarch butterfly (*Danaus plexippus*) | FC | This species is a seasonal resident occurring in all counties in Illinois. The butterfly prefers open fields, meadows, weedy areas, marshes, and roadsides with nectar resources for foraging and milkweed (*Asclepias sp.*) for breeding. The species' migration route is influenced by the presence of milkweed. | May occur. Suitable habitat was observed in the open grassland portions of the project area. |
| **Reptiles** | | | |
| Eastern massasauga (*Sistrurus catenatus*) | FT, SE | This species lives in wet areas including wet prairies, marshes, fens, sedge meadows, peatlands, and low areas along rivers and lakes. Massasaugas also use adjacent uplands (e.g., shrubland, open woodlands, prairie) during part of the year. The species often hibernates in crayfish burrows but may also be found under logs and tree roots or in small mammal burrows. | May occur. Suitable habitat was observed in the forested area located in the southern portion of the project area. |

| | | | |
|---|---|---|---|
| **Mammals** | | | |
| Northern long-eared bat (*Myotis septentrionalis*) | FE, SE | In the summer, this species roosts underneath bark, in cavities or in crevices of both live trees and snags, or in structures (e.g., barns). Northern long-eared bats use forested areas for roosting, foraging, and traveling between summer and winter habitat. Winter habitat consists of caves and mines. | May occur in the spring, summer, and fall. Potential habitat was observed in the forested areas of the project area. Unlikely to occur in the winter due to absence of winter hibernacula. |
| **Birds** | | | |
| American golden plover (*Pluvialis dominica*) | BCC | This species feeds in lagoons and estuaries. During migration from their artic breeding grounds, flocks gather in native prairie, pastures, sod farms, farmland, mudflats, and shorelines, both on major coastlines and in the interior. | Unlikely to occur. |
| Bald eagle (*Haliaeetus leucocephalus*) | BCC | The species generally nests in large deciduous or coniferous trees or cliffs near aquatic sites (e.g., perennial rivers or lakes) containing fish. The species roosts in the winter in large deciduous or coniferous trees located near aquatic foraging sites. | May occur. Potentially suitable habitat for nesting and foraging was observed in the forested areas of the project area. |
| Black-billed cuckoo (*Coccyzus erythropthalmus*) | BCC, ST | This species breeds in dense woodlands and thickets with deciduous and evergreen trees, often near water. During migration they forage in thickets, woodlands, orchards, gardens, and scrublands. | May occur during migration. Potentially suitable habitat was observed in the forested areas of the project area. |
| Bobolink (*Dolichonyx oryzivorus*) | BCC | This species breeds in open areas across the northern United States and southern Canada, preferring large fields with a mixture of grasses and broad-leaved plants like legumes and dandelions. The species formerly nested in tallgrass and mixed prairie, but now also nests in hayfields and meadows. | May occur. Potentially suitable habitat was observed in the open grassland areas of the project area. |
| Chimney swift (*Chaetura pelagica*) | BCC | This species nests in hollow trees, tree cavities, or caves. Chimney swifts forage mostly over open terrain but also over forests, ponds, and residential areas. | May occur. Potentially suitable habitat was observed in the open grassland and forested areas of the project area. |
| Henslow's sparrow (*Ammodramus henslowii*) | BCC | This species breeds in wet meadows, weedy pastures, and lowland prairie. Historically, the species bred in Atlantic coastal marshes. They now use reclaimed surfaces in the Ohio River basin and seem disposed to use large fields of tall, dense grass away from trees or other woody vegetation. | Unlikely to occur. |

| | | | |
|---|---|---|---|
| King rail (*Rallus elegans*) | BCC, SE | This species breeds and forages in both freshwater and brackish marshes. Specific marsh plants associated with king rail, both for nesting and wintering, include cattails (*Typha sp.*) and introduced common reed. | Unlikely to occur. |
| Lesser yellowlegs (*Tringa flavipes*) | BCC | This species uses a wide variety of fresh and brackish wetlands, including mudflats, marshes, lake and pond edges, wet meadows, sewage ponds, and flooded agricultural fields such as rice paddies. | Unlikely to occur. |
| Prothonotary warbler (*Protonotaria citrea*) | BCC | This species breeds in flooded bottomland forests, wooded swamps, and forests near lakes and streams. They tend to avoid forest patches smaller than approximately 250 acres and forest borders less than 100 feet wide. | Unlikely to occur. |
| Red-headed woodpecker (*Melanerpes erythrocephalus*) | BCC | This species breeds in deciduous woodlands with oak or beech, groves of dead or dying trees, river bottoms, burned areas, recent clearings, beaver swamps, orchards, parks, farmland, grasslands with scattered trees, forest edges, and roadsides. Wherever they breed, trees for nest cavities are an important part of habitat. | May occur. Potentially suitable habitat was observed in the open grassland field areas and forested areas of the project area. |
| Rusty blackbird (*Euphagus carolinus*) | BCC | This species breeds in wet forests, including areas with fens, bogs, muskeg, and beaver ponds. The species relies on water for foraging in shallows and damp ground. | Unlikely to occur. |
| Short-billed dowitcher (*Limnodromus griseus*) | BCC | This species is opportunistic in choice of habitat, turning up in human-made environments such as impoundments, sewage ponds, and flooded farm fields as well as in muddy margins of rivers, lakes, and bays. | Unlikely to occur. |
| Upland sandpiper (*Bartramia longicauda*) | BCC, SE | This species nests in grasslands, pastures, agricultural fields, especially fallow fields, but sometimes hay or other crop fields. Occasionally this species is known to nest in road edges. Minimal woody vegetation and minimal bare ground are prominent features of these grassland habitats. During migration, this species frequents airfields, agricultural fields, and pastures, but migrants can also turn up in unusual places such as on beaches or ballfields, especially when grounded by foul weather. | Unlikely to occur. |

| | | | |
|---|---|---|---|
| Wood thrush (*Hylocichla mustelina*) | BCC | This species breeds throughout mature deciduous and mixed forests in eastern North America, most commonly those with American beech (*Fagus grandifolia*), sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), eastern hemlock (*Tsuga canadensis*), flowering dogwood (*Cronus florida*), American hornbeam (*Ostrya virginiana*), oaks (*Quercus sp.*), or pines (*Pinus sp.*). They nest somewhat less successfully in fragmented forests and even suburban parks where there are enough large trees for a territory. Ideal habitat includes trees over 50 feet tall, a moderate understory of saplings and shrubs, an open floor with moist soil and decaying leaf litter, and water nearby. | May occur. Potentially suitable habitat was observed in the forested areas of the project area. |
| Whooping crane (*Grus americana*) | Nonessential experimental population | Whooping cranes use a variety of habitats during migration, including croplands for feeding and wetlands for roosting (Lingle et al. 1991). The USFWS designated a nonessential experimental population of whooping cranes in the eastern United States with a geographic boundary that includes Illinois (66 FR 33903–33917 [June 26, 2001]). | Unlikely to occur. |

Sources: (SWCA, 2023a)

* Status: FE = Endangered, FT = Threatened, FC = Candidate, BCC = Bird of Conservation Concern; Illinois State status: SE = Endangered, ST = Threatened.

## 3.7.2 Environmental Consequences

### 3.7.2.1 Proposed Action

Eastern massasauga rattlesnakes could potentially occur in the project area. However, potentially suitable habitat is limited to the southern portion of the project area, and implementation of the Proposed Action, including BMPs, is expected to result in no effect to the species, if present.

Northern long-eared bats could potentially occur in the project area; however, implementation of the Proposed Action, including BMPs as described in Section 4.0, is expected to result in no effect to the species, if present. Approximately 4.2 acres of deciduous forest would be cleared within the southern extent of the project area. As detailed in Section 4.0, clearing of trees will occur only during the USFWS-designated winter clearing window for the northern long-eared bat (October 1 through March 31). No tree removal or impacts to areas designated as deciduous forest would occur outside of the USFWS-designated winter clearing window for northern long-eared bats.

Incidental mortality or displacement of individual birds protected under the MBTA may occur due to construction disturbance (e.g., vegetation removal, noise). However, mobile individuals (e.g., adults) would be expected to move to adjacent habitats in response to habitat loss or disturbance. To avoid impacts to immobile young and eggs, VA will implement the BMPs described in Section 4.0. Further, no major, long-term, or population-level effects on migratory birds are anticipated to result from implementation of the Proposed Action due to implementation of the BMPs discussed in Section 4.0. VA is committed to ensure clearing of vegetation, including trees, only occurs during the USFWS-designated winter clearing window for the northern long-eared bat, which would avoid impacts to nesting migratory birds.

The project area contains limited suitable habitat for nesting and foraging bald eagles. Adult eagles would not likely be directly harmed by the Proposed Action because adults are mobile and expected to avoid areas of human disturbance. Although bald eagles could occur in the project area, no bald eagle nests were identified within the project area during the field reconnaissance and as such, no direct or indirect impacts to the species are anticipated for the project (SWCA, 2023a).

Table 3-5 provides effect determinations for all special-status species evaluated for the potential to occur within the project area.

### 3.7.2.2 No Action Alternative

Under the No Action Alternative, construction and operation of the Phase 4 Gravesite Development and Improvements would not occur. Therefore, no additional impacts to wildlife or habitat over existing conditions would occur as a result of VA’s continued actions.

**Table 3-5. Effect Determinations for Special Status Species**

| **Common Name (*Scientific Name*)** | **Status*** | **Effect Determination** |
|---|---|---|
| Eastern prairie fringed orchid (*Platanthera leucophaea*) | FT, SE | No effect. |
| Lakeside daisy (*Hymenoxys herbacea*) | FT, SE | No effect. |
| Leafy prairie-clover (*Dalea foliosa*) | FE, SE | No effect. |
| Hine's emerald dragonfly (*Somatochlora hineana*) | FE, SE | No effect. |
| Monarch butterfly (*Danaus plexippus*) | FC | No effect. |
| Eastern massasauga (*Sistrurus catenatus*) | FT, SE | No effect. |
| Northern long-eared bat (*Myotis septentrionalis*) | FE, SE | No effect. |
| American golden plover (*Pluvialis dominica*) | BCC | No effect. |
| Bald eagle (*Haliaeetus leucocephalus*) | BCC | No effect. |
| Black-billed cuckoo (*Coccyzus erythropthalmus*) | BCC, ST | No effect. |
| Bobolink (*Dolichonyx oryzivorus*) | BCC | No effect. |
| Chimney swift (*Chaetura pelagica*) | BCC | No effect. |
| Henslow’s sparrow (*Ammodramus henslowii*) | BCC | No effect. |
| King rail (*Rallus elegans*) | BCC, SE | No effect. |
| Lesser yellowlegs (*Tringa flavipes*) | BCC | No effect. |
| Prothonotary warbler (*Protonotaria citrea*) | BCC | No effect. |
| Red-headed woodpecker (*Melanerpes erythrocephalus*) | BCC | No effect. |
| Rusty blackbird (*Euphagus carolinus*) | BCC | No effect. |
| Short-billed dowitcher (*Limnodromus griseus*) | BCC | No effect. |
| Upland sandpiper (*Bartramia longicauda*) | BCC, SE | No effect. |
| Wood thrush (*Hylocichla mustelina*) | BCC | No effect. |

| | | |
|---|---|---|
| Whooping crane (*Grus americana*) | Nonessential experimental population | No effect. |

Sources: (SWCA, 2023a)

* Status: FE = Endangered, FT = Threatened, FC = Candidate, BCC = Bird of Conservation Concern; Illinois State status: SE = Endangered, ST = Threatened.

## 3.8 Noise

High noise levels that occur over a long duration can impact the health of exposed populations and be a nuisance to the surrounding community. This EA analyzes noise from potential construction and demolition activities using the A-weighted decibel scale (dBA), which is a logarithmic scale generally used to measure noise levels because it can account for the sensitivity of the human ear across the frequency spectrum.

### 3.8.1 Affected Environment

The primary noise sources in the vicinity of the Abraham Lincoln National Cemetery are traffic and intermodal industrial activity associated with the adjacent rail yard. At the existing National Cemetery site, routine maintenance, including the use of lawnmowers and leaf blowers and periodic construction activities can create noise. During committals, ceremonial rifle salutes create short bursts of noise that are audible in the immediate surroundings. These salutes occur only during weekday business hours.

The Noise Control Act of 1972, with its subsequent amendments (Quiet Communities Act of 1978, 42 USC § 4901−4918), delegates to the States the authority to regulate environmental noise and directs government agencies to comply with local community noise statues and regulations.

Sensitive noise receptors in the vicinity of the Proposed Action are primarily located within the Village of Elwood and include the following:

- Recreation – Midewin Iron Bridge Trail Head, the Midewin National Tallgrass Prairie, Archer Park Disc Golf Course, and the Des Plaines Dolomite Prairies Land And Water Reserve
- Schools – Elwood School
- Churches – Elwood Community Church
- Parks – O'Connor Park and Tyler Park
- Residential – Village of Elwood

### 3.8.2 Environmental Consequences

#### 3.8.2.1 Proposed Action

The Proposed Action would be expected to have minor, short-term and negligible, long-term, adverse effects on sensitive noise receptors, specifically the existing Abraham Lincoln National Cemetery.

Construction activities associated with the Proposed Action would result in minor, short-term, adverse effects. Construction-related noise would vary throughout the construction process and depend on the quantity and type of equipment and tools being used, as well as operating schedules. Construction activities would be typical of construction projects of this scale and would include transport, site preparation, excavation, placement of foundations, and paving. The greatest source of noise would be

construction equipment utilizing internal combustion engines, including, but not limited to, excavators, front-end loaders, bulldozers, dump trucks, utility trucks, and forklifts.

Long-term operational noise within the area of the Proposed Action would be consistent with the existing cemetery operations associated with maintenance activities and ceremonial rifle salutes.

Peak noise levels can vary at a given location from the line of sight, topography, vegetation, and atmospheric conditions. Additionally, peak noise levels would be variable and intermittent because each piece of equipment would only be operated when needed. However, peak construction noise levels would be considerably higher than existing noise levels. Relatively high peak noise levels in the range of 93 to 108 dBA would occur on the active construction site, decreasing with distance from the construction areas. At 0.25 miles, construction noise levels would generally be low enough to be considered insignificant, although transient noise levels may be noticeable at times. Table 3-6 presents peak noise levels that could be expected from a range of construction equipment during proposed construction activities.

Table 3-7 shows the "worst-case" combined peak noise level that could be expected if several noise-emitting equipment were operated simultaneously. These conditions are expected to be rare during the course of the construction activities. However, they could create temporary peak noise levels exceeding 90 dBA up to 200 feet from the construction area, depending on the specific pieces of equipment being operated. There are currently no sensitive off-site noise receptors located within 200 feet of the proposed construction activity. The intermittent and infrequent nature of "worst-case" circumstances would be unlikely to create more than a temporary nuisance for those in the vicinity.

**Table 3-6. Peak Noise Levels Expected from Typical Construction Equipment, as Measured from the Source in dBA**

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

Source: (Tipler, P.A., 1976)

**Table 3-7. Worst-Case Combined Peak Noise Level (Bulldozer, Jackhammer, and Scraper) as Measured from the Source in dBA**

| Distance from the Source | 50 feet | 100 feet | 200 feet | 1/4 mile | 1/2 mile |
|---|---|---|---|---|---|
| **Combined Peak Noise Level (dBA)** | 103 | 97 | 91 | 74 | 68 |

Source: (Tipler, P.A., 1976)

#### 3.8.2.2 No Action Alternative

Under the No Action Alternative, the noise levels to surrounding properties would not change from current cemetery operations. No adverse noise effects presently occur. The noise environment of the site would not be altered by VA's actions.

## 3.9 Land Use

### 3.9.1 Affected Environment

The project area occurs within one USEPA Level IV ecoregion, Illinois/Indiana Prairies. The Illinois/Indiana Prairies ecoregion is covered in loamy, calcium-rich glacial till, lake sediment, and mixed glacial drift. This area is heavily utilized for agriculture. Lands have been drained by tiling and ditching, draining them through the existing natural drainage channels, and eliminating most marshes and pothole lakes. The project area is dominated by herbaceous, deciduous forest, hay/pasture, and developed areas (SWCA, 2023).

The project area was formerly associated with the Army's JOAAP prior to being transferred to VA and designated for cemetery use. Approximately 173 acres of the 197-acre project area are currently undeveloped, open, and unmaintained land. The adjacent land to the south is developed cemetery. The National Cemetery is bound by county roads and intermodal and distribution facilities. The existing use of land surrounding the project area is unmaintained vegetation. The current zoning map was obtained from the Village of Elwood and overlayed by the National Cemetery boundary in Figure 3-4.

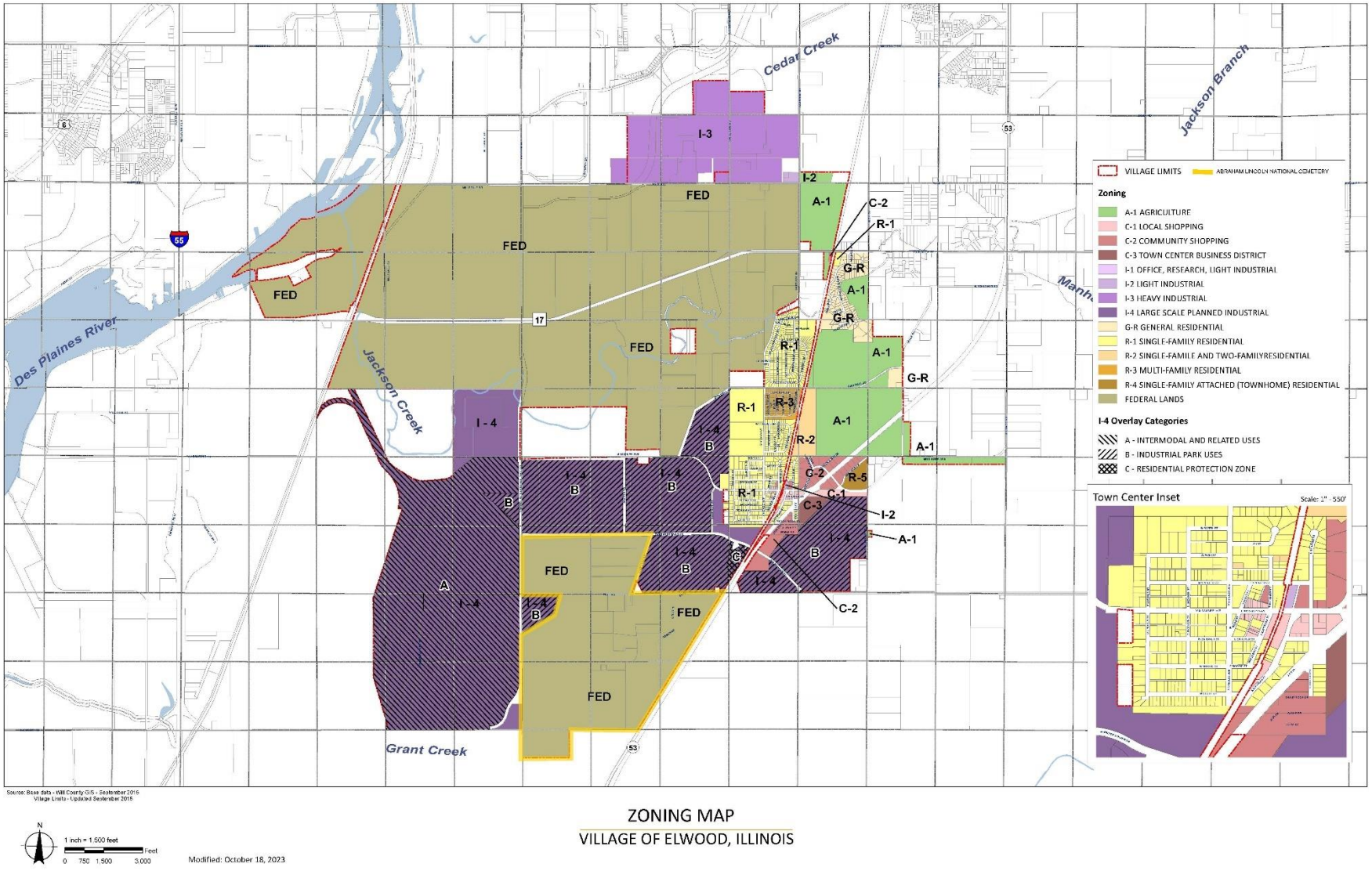



**Figure 3-4. Zoning Map for the Village of Elwood**

### 3.9.2 Environmental Consequences

#### 3.9.2.1 Proposed Action

Construction of the Proposed Action would have no impact on land use. According to the Village of Elwood, the entire site is zoned as Federal lands. Although VA makes all reasonable attempts to integrate its activities with local zoning, VA, as a Federal agency operating within Federal lands, is not subject to local zoning regulations.

Areas north of the cemetery are zoned large-scale planned industrial and much of the surrounding area remains in industrial use. No adverse impact to land use is anticipated under the Proposed Action.

#### 3.9.2.2 No Action Alternative

Under the No Action Alternative, no land use effects would occur. The project area would remain unmaintained and be clear to be developed in accordance with its designation as Federal lands.

## 3.10 Floodplains and Wetlands

### 3.10.1 Affected Environment

#### 3.10.1.1 Floodplains

The study area contains a Special Flood Hazard Area (SFHA) designated as Zone A. Zone A areas do not have designated base flood elevations (BFEs) or floodways; therefore, the Federal Emergency Management Agency (FEMA) requirements associated with the preparation and submittal of a Conditional Letter of Map Revision (CLOMR) do not apply. The community does have the discretion to request a CLOMR review as part of its permitting process for high-risk projects. These usually involve increases to the BFE or SFHA that would affect an insured property, which is not the case with the Proposed Action.

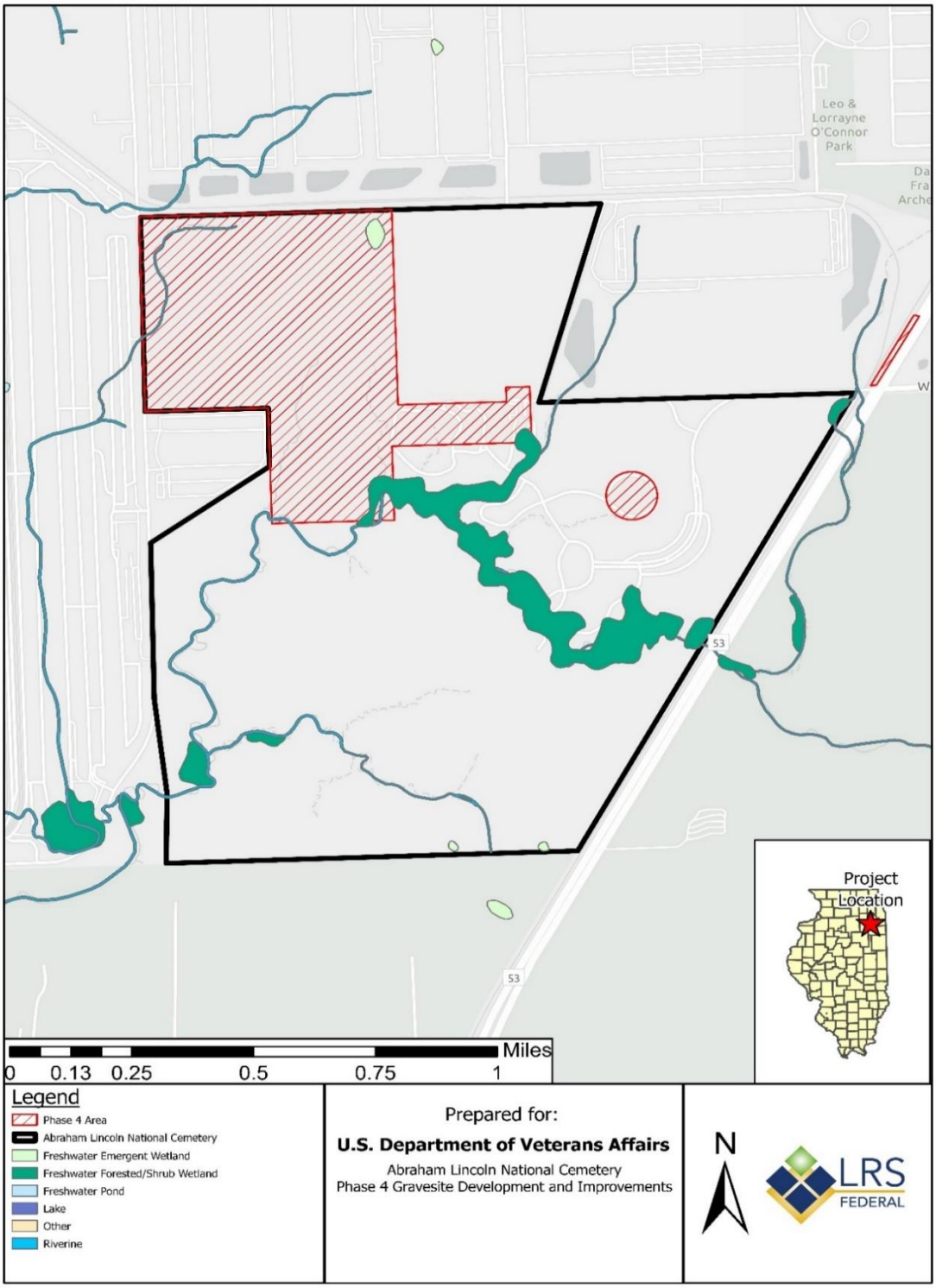
#### 3.10.1.2 Wetlands and Other Water Resources

Jurisdictional Waters of the United States, including streams and wetlands, are defined by 33 CFR 328.3 and are protected by Section 404 of the Clean Water Act (33 USC 1344), which is administered and enforced by the U.S. Army Corps of Engineers (USACE).

As provided by the USFWS National Wetlands Inventory database, two wetlands and one stream are present within the study area as depicted in Figure 3-5. Runoff from this riverine habitat in the northwestern corner of the study area discharges to the Village of Elwood's local stormwater system, is conveyed through an adjacent intermodal railyard, and discharges to Grant Creek, a tributary of the Des Plaines River.

A Wetland Investigation Report was completed to support the Phase 3 Expansion in September 2018, which included the project area for the Proposed Action for this EA area (Appendix E, Anderson 2019). The report identified ten resources within future anticipated expansion areas; however, only one wetland was identified outside, but immediately adjacent, to the project. Figure 3-6 depicts the wetland and waterway boundaries delineated in 2018.

Based on Village of Elwood ordinances, a minimum setback distance of 25 feet is required from the identified adjacent wetland. Development activity would not occur within the minimum setback distance.




Source Data: U.S. Fish and Wildlife Service, National Wetlands Inventory.

**Figure 3-5. Existing Water Resources in the Vicinity of the Abraham Lincoln National Cemetery**

## 3.10.2 Environmental Consequences

### 3.10.2.1 Proposed Action

No impacts to regulated water resources are anticipated under the Proposed Action as depicted within Figure 3-6. Additionally, construction activities would comply, to the extent possible, with local agencies' requirements to minimize adverse effects to Waters of the United States. As such, no impacts within the Village of Elwood's minimum setback distance of 25-feet are proposed under the Phase 4 cemetery expansion. The final design would maintain a buffer of undisturbed land around identified wetlands/Waters of the United States, where possible. General construction practice BMPs would also be implemented to prevent any potential spills from construction vehicles from reaching regulated surface water resources.

To minimize potential adverse effects to Waters of the United States including wetlands, the project design has considered the following:

- Avoid floodplains and Waters of the United States.
- Maintain a minimum 25-foot buffer of undisturbed land around the adjacent wetland.
- Inspect and maintain construction vehicles in good working order and maintain a spill kit.
- Implement stormwater BMPs.

Implementation of these minimization measures and BMPs would ensure potential effects from construction to wetlands and surface waters are maintained at less-than-significant levels.

Final vegetative stabilization of the construction area would render potential impacts from erosion to less-than-significant long-term levels. Measures described in Section 4.0 will minimize any short- and long-term impacts resulting from spills.

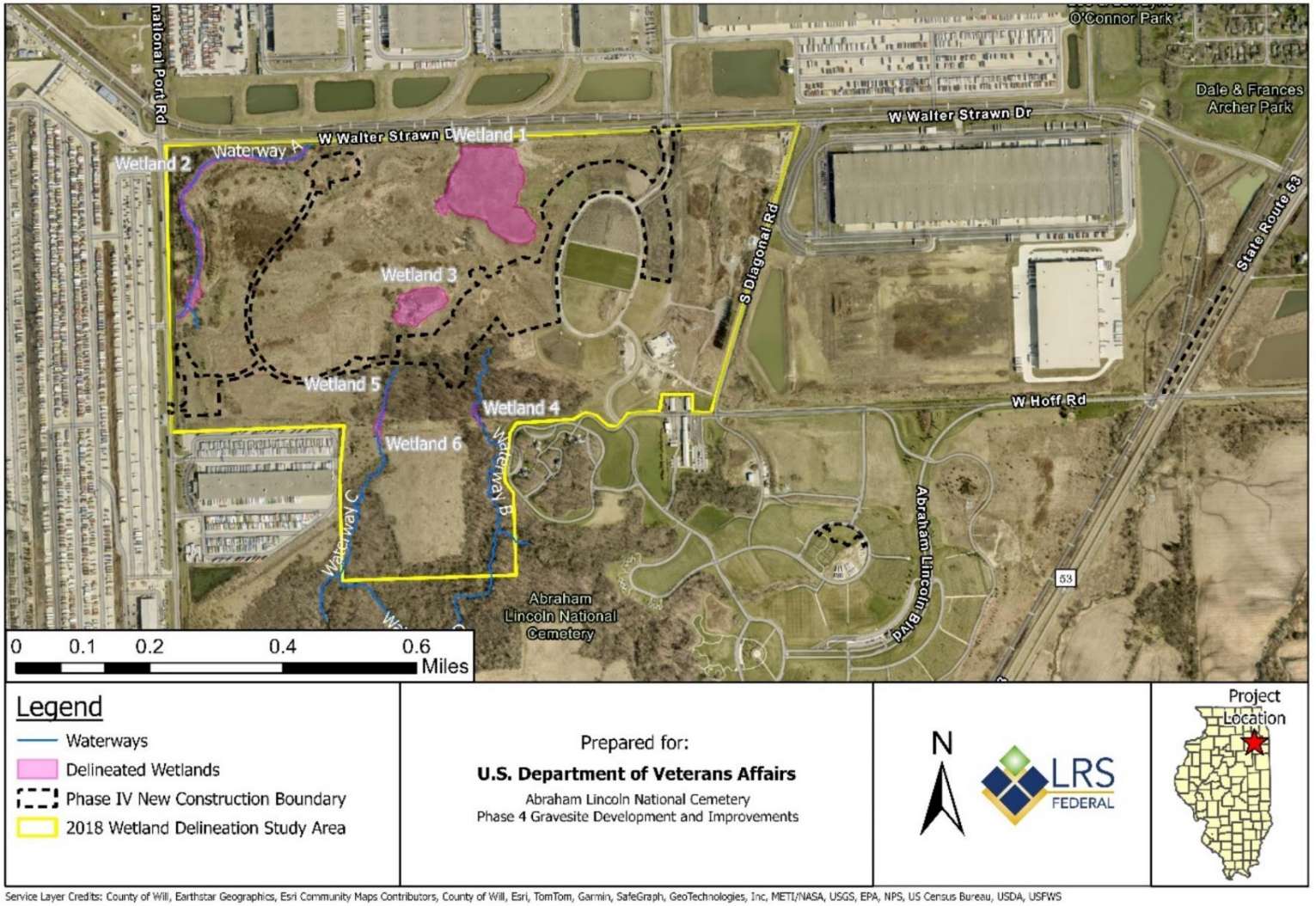



**Figure 3-6. December 2018 Wetland Delineation Boundaries (Anderson Engineering of Minnesota, LLC, 2019)**

#### 3.10.2.2 No Action Alternative

Under the No Action Alternative, construction of the Proposed Action projects would not occur. No impacts to floodplains or wetlands would occur as a result of VA's actions.

## 3.11 Socioeconomics

### 3.11.1 Affected Environment

Socioeconomics can be characterized as the demographics, employment, and income of a region. U.S. Census Bureau data from the 2020 Decennial Census and the 2021 and 2022 American Community Survey 1-year estimates were used (U.S. Census Bureau, 2023). Data for several key demographic indicators for the State of Illinois, Will County, and the Village of Elwood were compared to better understand the demographics of the project site location within the broader context of the region.

The Village of Elwood has a lower minority and Hispanic population and higher Veteran population than Will County and the State of Illinois (Table 3-8).

**Table 3-8. Population and Veteran Status**

| Geographic Area | Population | Population Under 18 Years | Population 65 Years and Over | Minority[1] | Hispanic | Veterans |
|---|---|---|---|---|---|---|
| Illinois | 12,812,508 | 21.6% | 17.2% | 24.5% | 18.3% | 4.8% |
| Will County | 696,355 | 23.4% | 14.7% | 23.2% | 19.5% | 5% |
| Elwood | 2,229 | 20.2% | 13.3% | 2.6% | 7.3% | 7.9% |

The median household income in the Village of Elwood is comparable to that in the State of Illinois but lower than the median household income in Will County (Table 3-9). The unemployment rates are comparable for the State, county, and village (U.S. Census Bureau, 2023).

**Table 3-9. Income, Poverty, and Employment**

| Geographic Area | Number of Households | Median Household Income | Percent Below Poverty Level | Unemployment Rate |
|---|---|---|---|---|
| Illinois | 5,056,360 | $76,708 | 11.9% | 4.8% |
| Will County | 244,188 | $96,668 | 6.9% | 3.6% |
| Elwood | 951 | $76,339 | 9.8% | 4.6% |

There are no grade schools within 0.5 miles of the Abraham Lincoln National Cemetery. There is one school, Elwood School, within 1 mile of the cemetery.

### 3.11.2 Environmental Consequences

#### 3.11.2.1 Proposed Action

Construction associated with the Proposed Action would likely result in short-term, direct, and beneficial impacts to local employment and personal income. Construction would provide temporary construction jobs and could have short-term socioeconomic benefits to the immediate area and local economy. Long-

[1] For the purpose of this document, minority refers to the following racial and ethnic groups: African Americans, American Indians and Alaska Natives, Asians, and Native Hawaiian and other Pacific Islanders.

term beneficial impacts associated with the proposed projects include providing Veteran families in the region with reasonable access to VA interment options and providing the public with upgraded infrastructure and facilities at the cemetery. The additional development at the cemetery, requiring maintenance and upkeep, could also provide long-term employment benefits to the area.

Based on similar projects, there would not likely be impacts to child populations. The construction sites would be secured to prevent unauthorized access by children and others. BMPs would be implemented during construction to minimize and control construction noise and fugitive dust, which would minimize adverse impacts to child populations.

#### 3.11.2.2 No Action Alternative

Under the No Action Alternative, the western extent of the National Cemetery would remain undeveloped. There would be no impacts related to socioeconomics associated with the No Action Alternative.

## 3.12 Community Services

### 3.12.1 Affected Environment

The Abraham Lincoln National Cemetery is located within the Elwood Community Consolidated School District 203. The nearest grade school is the Elwood School, located approximately 1 mile north and east of the cemetery.

The Elwood Police Department and Elwood Fire Protection District serve the Village of Elwood.

There are no hospitals located in the Village of Elwood. Some of the nearby hospitals serving the Elwood community include Silver Cross Hospital located in New Lenox, Provena Saint Joseph Medical Center located in Joliet, and Will County Health Department located in Joliet.

There are several small-scale parks located in the Village of Elwood, including Dale and Francis Archer Park, Leo and Lorrayne O'Connor Park, and Tyler Park. Additionally, the Midewin National Tall Grass Prairie borders the Village of Elwood to the south and west.

Public transportation in the area is served by Pace Suburban Bus Service, the Metra Southwest Service, and Rock Island District Rail Lines.

### 3.12.2 Environmental Consequences

#### 3.12.2.1 Proposed Action

The Proposed Action is not expected to place additional substantial demands on police, fire protection, or other emergency services in the area. The Proposed Action is not anticipated to have a significant impact on transportation service demands. Any short-term road closures would be coordinated with the local emergency and transportation services in the area. Parks near the Abraham Lincoln National Cemetery will not be impacted by the Proposed Action.

#### 3.12.2.2 No Action Alternative

Under the No Action Alternative, the western extent of the National Cemetery would remain undeveloped. There would be no impacts related to community services associated with the No Action Alternative.

## 3.13 Solid Waste and Hazardous Materials

The Resource Conservation and Recovery Act (RCRA) defines solid waste as, "any material that is discarded or disposed." Solid wastes become hazardous wastes when they exhibit a characteristic of ignitability, corrosivity, reactivity, or toxicity, or are otherwise listed specifically as a hazardous waste. Hazardous materials typically found in the built environment include, but are not limited to, materials containing asbestos, polychlorinated biphenyls (PCBs), lead, crystalline silica, and mercury. These materials often do not pose a hazard to human health or the environment under their intended uses but can have detrimental impacts when they are removed or disturbed.

### 3.13.1 Affected Environment

The National Cemetery is within the former JOAAP Manufacturing Area and is adjacent to the former JOAAP Load-Assemble-Package Area to the east, separated by Illinois Route 53. The former JOAAP has been addressed under Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as two National Priority List (NPL) sites, the Manufacturing Area and the Load-Assemble-Package Area. The Manufacturing and Load-Assemble-Package Areas were listed on the NPL on July 21, 1987, and March 31, 1989, respectively.

Congress required, through the Illinois Land Conservation Act of 1995, Public Law 104-106, Division B, Title 2901-2932, 10 February 1996 (PL 104-106), the Army to transfer JOAAP land to various Federal, State, and local jurisdictions. The Army included Institutional Controls (ICs) in all land transfer documents where soil or groundwater contamination was present. Due to the procedure for transfer of land from one Federal agency to another, formal deeds were not recorded for property that was transferred from the Army to the VA. Through this transfer, there were no land use restrictions established for the VA. The VA parcels only have an IC for continued Army access for environmental reasons, as stated in the *2018 Site Wide Deed Restriction Implementation Report* (USACE, 2018).

A Phase I Environmental Site Assessment was conducted by ECS Midwest LLC (ECS) in January 2023. Several Recognized Environmental Conditions (RECs) and one Historical Recognized Environmental Condition (HREC) were identified and are listed below:

- Based on the site and surrounding area being used as the former Joliet Army Arsenal/Ammunitions Plant between the 1940s and 1990s, soil and groundwater in the vicinity of the former plant is known to be impacted with metals, PCBs, and VOCs. Potential, known and unknown, petroleum and hazardous substance releases could likely impact the property and represent a REC to the site.
- Based on a parent parcel of the site being used as the Uniroyal Chemical Company and a release of gasoline and waste oil associated with the facility reported to the State in 1990, this land use and known release represents a REC to the site.
- A rail yard that adjoined the subject property to the west in the 2000s, and its potential for unknown or unreported releases, could have likely impacted the property and represents a REC to the site.
- Based on database information reviewed, a release of approximately 100 gallons of diesel from a fuel dispenser tube on the property, reported to the State in 2012, represents an HREC to the site (ECS, 2023).

A Phase II Environmental Site Assessment was conducted by LRS in September 2023 to further evaluate the RECs and HRECs identified during the Phase I ESA. Based on field sampling and laboratory analyses performed, no analytical results indicated the presence of chemicals of concern at or above the Illinois Tiered Approach to Corrective Action Objectives (IL TACO) Tier 1 Residential, Industrial, or Construction Worker Remediation Objectives (ROs).

Analytical results for soil samples in the former JOAAP Manufacturing Area indicated iron was present at concentrations above the Maximum Allowable Concentrations for Chemical Constituents in Uncontaminated Soils (MAC) for clean soil reuse, as provided in Illinois Administrative Code Title 35, Part 1100, Subpart F. However, it is noted that the MAC is not a risk-based standard and could apply only if this material would be reused elsewhere onsite. The soil sampled met IL TACO Tier I ROs and could be managed in place. Additional sampling of metals in soils from the former JOAAP area is recommended if soil is planned to be used as fill outside the project area (LRS, 2023b).

In December 2022, a Hazardous Materials Survey was completed by ECS for the Administrative/Maintenance Office and Storage Building, Maintenance Outbuilding, Storage Outbuildings, and Honor Guard Building. Asbestos containing materials were not detected within materials sampled for the survey. However, several surveyed materials containing lead at concentrations that meet the Illinois Department of Public Health's definition of a Lead Bearing Substance were identified in the Administrative/Maintenance Office Building Break Room.

A Spill Prevention, Control, and Countermeasures (SPCC) Plan currently addresses the VA's intent to prevent the discharge of chemicals and petroleum-based products into navigable waters and follows the guidelines described in 40 CFR 112 Final Rule for Oil Pollution Prevention and Response: Non-Transportation-Related Onshore and Offshore Facilities July 17, 2002, and related amendments to 40 CFR 112.

## 3.13.2 Environmental Consequences

### 3.13.2.1 Proposed Action

During construction, the presence and use of petroleum and hazardous substances could increase the potential for accidental release or spill of oil, diesel, gasoline, and antifreeze. Standard construction BMPs would be implemented to mitigate and minimize potential impacts, including proper storage and appropriate labeling of petroleum products and hazardous materials in approved containers; storage of containers on a level and impervious surface; and use of secondary containment systems around fuel storage containers during refueling activities. Should a spill or release occur, any impacted soil would be properly handled per Federal and State laws and regulations.

All soil is expected to be reutilized onsite as fill. However, as identified in the Phase II Environmental Site Assessment, any soil from the Former JOAAP Area of the National Cemetery that is not managed onsite during excavation and grading will need to be sampled for metals to determine if it meets the MAC for clean soil reuse.

There would not be a long-term or significant increase in the amount of hazardous waste generated by the National Cemetery. Waste generated after construction and during operation of the National Cemetery would be managed in compliance with Federal and State laws and regulations. Further, the applicable SPCC Plan must be reviewed and amended to reflect the proposed changes in facility design, construction, operation, and maintenance.

Lead Bearing Substances were present in the Administration/Maintenance Building Break Room, which would need to be abated and managed in accordance with the applicable Federal and State regulations during renovation of the building.

The Proposed Action is not anticipated to adversely impact the effectiveness of the ongoing cleanups taking place under CERCLA for the Former JOAAP Manufacturing Area or Load-Assemble-Package Area, as the parcels transferred from the Army to VA did not have any land use restrictions.

Based on the enforcement of BMPs during construction activities and the absence of long-term increases in hazardous waste at the site, the Proposed Action is anticipated to result in less than significant impacts from solid waste and hazardous materials to the National Cemetery and surrounding areas.

#### 3.13.2.2 No Action Alternative

Under the No Action Alternative, construction of the Proposed Action projects would not occur. No impacts from solid waste or hazardous materials would occur as a result of VA's actions.

## 3.14 Traffic and Transportation

Transportation systems include the vehicles and infrastructure necessary to convey people and goods from one location to another. This section focuses on traffic congestion for local roads and highways, which can affect the quality of life of employees and neighboring residents.

Transportation vehicles can emit GhGs and regulated air pollutants such as CO, $NO_2$, and particulate matter. Additionally, traffic congestion and idling on roads and highways can cause increased air pollution. Section 3.2discusses the air quality impacts associated with mobile vehicle use.

### 3.14.1 Affected Environment

A Traffic Impact Study was completed in November 2022 that analyzed the impacts of the Phase 4 expansion of the Abraham Lincoln National Cemetery near Elwood, Illinois (LRS, 2022). The study collected vehicular turning movement counts at six major study intersections; projected background traffic growth; calculated vehicular trips produced by the Phase 4 expansion; distributed those generated trips across the study network; and analyzed the traffic operations at each of the study intersections for the three study periods.

Major roads and roadways in the vicinity of the National Cemetery include:

- Illinois State Route 53
- Hoff Road
- Walter Strawn Drive
- Mississippi Avenue
- Elwood International Port Road

Traffic operation performance at intersections is measured using several factors: average vehicle delay, volume to capacity ratio (v/c), and level of service (LOS). LOS is a categorization of the performance, ranging from A to F, which is related to the average vehicle delay, where LOS A represents minimal vehicle delay, LOS E represents an intersection operating at full capacity, and LOS F represents failing conditions with excessive delay. Illinois Department of Transportation (IDOT) has different minimum LOS requirements depending on the roadway functional classification and the level of work being done at the intersections. For Rehabilitation, Resurfacing, Restoration (3R) projects, which is most similar to VA's Proposed Action, IDOT requires that "design capacities, at a minimum, should be adequate for current traffic at a level of service D" (LRS, 2022).

The current LOS is shown for each major intersection in the vicinity of the Abraham Lincoln National Cemetery (Table 3-10). Currently, there are no intersections that have a failing LOS and all intersections have an LOS rating of C or higher.

**Table 3-10. Existing Level of Service at Major Intersections**

| Intersection | 2022 Existing | | |
|---|---|---|---|
| | LOSs[a] | Delay[b] | Max. v/c[c] |
| 1: IL-53 and W Hoff Road S | A<br>(B) | 9<br>(11) | 0.50<br>(0.43) |
| 2: IL-53 and IRA Morgan Street S | A<br>(A) | 1<br>(5) | 0.50<br>(0.96) |
| 3: Walter Strawn Drive and Deer Run Road TWS | A – SB<br>(B – SB) | 9<br>(10) | 0.03<br>(0.08) |
| 4: Walter Strawn Drive and Walton Drive TWS | B – SB<br>(B – SB) | 10<br>(11) | 0.02<br>(0.01) |
| 5: Walter Strawn Drive and Elwood International Port Road AWS | B<br>(C) | 14<br>(18) | 0.47<br>(0.70) |
| 6: IL-53 and Mississippi Avenue TWS | C – WB<br>(C – EB) | 16<br>(18) | 0.11<br>(0.26) |

[a] Vehicle movement LOS–worst-performing approach direction indicated for two-way stop-controlled intersections
[b] Movement delay in seconds
[c] Maximum v/c (volume/capacity) ratio for the movement/intersection
AM (PM) = AM Peak Period (PM Peak Period) values
LOS = level of service
AWS = All-way stop-controlled intersection
TWS = Two-way stop-controlled intersection
S = Signalized intersection
EB = Eastbound
WB = Westbound
NB = Northbound
SB = Southbound

## 3.14.2 Environmental Consequences

### 3.14.2.1 Proposed Action

Based on the findings of the November 2022 Traffic Impact Study, all intersections exceed the minimum traffic operations standards under both a full-build and no-build scenario (LRS, 2022). Therefore, the Proposed Action does not require traffic mitigations. No intersections operate below the minimum IDOT acceptable LOS in any of the examined scenarios, including after full buildout of the Proposed Action in 2026.

During Proposed Action construction activities, there would be an increase in construction vehicles that would likely contribute to a temporary increase in traffic volumes, minor congestion, and possibly detours. Impacts to traffic during construction would be temporary and localized.

The anticipated LOS at major intersections in the vicinity of the site under the Proposed Action in 2026 is shown in Table 3-11. The Proposed Action does not contribute to intersection LOS failures or decreases in LOS.

**Table 3-11. 2026 Build and 2026No-Build Intersection Performance Summary**

| Intersection | 2026 Build | | | 2026 No-Build | | |
|---|---|---|---|---|---|---|
| | LOS[a] | Delay[b] | Max. v/c[c] | LOS[a] | Delay[b] | Max. v/c[c] |
| 1: IL-53 and W Hoff Road [S] | A<br>(B) | 9<br>(13) | 0.43<br>(0.56) | A<br>(B) | 9<br>(12) | 0.50<br>(0.44) |
| 2: IL-53 and IRA Morgan Street [S] | A<br>(A) | 1<br>(5) | 0.49<br>(0.96) | A<br>(A) | 1<br>(5) | 0.49<br>(0.96) |
| 3: Walter Strawn Drive and Deer Run Road [TWS] | A – SB<br>(B – SB) | 10<br>(12) | 0.04<br>(0.11) | A – SB<br>(B – SB) | 10<br>(12) | 0.04<br>(0.11) |
| 4: Walter Strawn Drive and Walton Drive [TWS] | B – SB<br>(B – SB) | 11<br>(12) | 0.03<br>(0.02) | B – SB<br>(B – SB) | 11<br>(12) | 0.03<br>(0.02) |
| 5: Walter Strawn Drive and Elwood International Port Road [AWS] | B<br>(C) | 15<br>(24) | 0.51<br>(0.83) | B<br>(C) | 15<br>(24) | 0.51<br>(0.83) |
| 6: IL-53 and Mississippi Avenue [TWS] | C – WB<br>(C – EB) | 17<br>(22) | 0.12<br>(0.32) | C – WB<br>(C – EB) | 17<br>(21) | 0.12<br>(0.29) |

The VA threshold for significant traffic impacts is defined in 38 CFR 26(2)(ii) as “an increase in average annual daily traffic volume (AADT) of at least 20 percent on access roads to the site or the major roadway network.” As a result of the proposed cemetery expansion, the AADT increase to the roadway network that surrounds the cemetery is 2.1 percent, which is below VA’s standard threshold for significance of 20 percent. AADT growth at Hoff Road, which is a privately owned driveway for the Abraham Lincoln National Cemetery, is expected to increase from 335 in the no-build scenario to 870 in the full-build scenario. The absolute change in AADT is 535 vehicles per day, and this section of Hoff Road effectively serves as a driveway for the cemetery. No outside traffic is affected by this increase. Therefore, impacts to local traffic are anticipated to be less than significant.

### 3.14.2.2 No Action Alternative

Under the No Action Alternative, the proposed phased cemetery expansion would not occur. No impacts to traffic, transportation, or parking would occur as a result of VA’s actions. The proposed Phase 4 Gravesite Development and Improvement Project Area would remain primarily undeveloped.

# 3.15 Utilities

## 3.15.1 Affected Environment

A Utilities Identification and Capacity Report was completed in March 2023 for the Abraham Lincoln National Cemetery (LRS, 2023a). A description of the availability of utilities, including electric, natural gas, potable water, irrigation, stormwater, wastewater, and telecommunications services, to the cemetery is summarized below.

- Commonwealth Edison Company (ComEd) holds an easement for a 765-kilovolt electrical transmission line that transects the National Cemetery from Illinois State Highway 53 (SR-53) westward, then northward to Walter Strawn Drive. Electricity is provided to the National Cemetery via overhead power lines. Additionally, Committal Service Shelter D has a photovoltaic system made up of six 210-Watt solar panels that were designed to meet a daily demand of 2,760 Watt-hours.
- A 3-inch gas main pipe runs along the south side of Hoff Road within the Northern Illinois Gas Company (Nicor Gas) Easement (Document Number R72-30719). The gas main services the Public Information Building, Administration/Maintenance Building, Maintenance Outbuilding, Storage Outbuilding No. 1, and the Pump Room at the Storage Outbuilding No. 2. The estimated pipe length between the Administration/Maintenance Building and the Nicor distribution line that runs parallel to SR-53 is approximately 3,000 feet.
- Domestic water is supplied to the National Cemetery via an on-site well located adjacent to Storage Outbuilding #2 (Building 3003), where the pump station is housed. Water is pumped from the well via an 8-inch pipe to a 100,000-gallon water tank located in Building 3003. Domestic water is treated and transported from the pump station to the domestic water system via two pumps, each with flow rates of 50 gallons per minute, to a 3-inch domestic water main.
- The Village of Elwood Public Works Department (PWD) additionally provides potable water services within municipal limits. A small network of presumably abandoned water mains exists within the Phase 4 site area. Potable water from the Village of Elwood is available in the utility trench running along Diagonal Road, east of the Phase 3 development area.
- During the Phase 3 Development Project a new irrigation well was installed east of the ComEd easement to supply water to an irrigation pond located southwest of the Walter Strawn Drive and South Diagonal Road intersection. As designed the irrigation pond has a storage capacity of 1.374 million gallons per day. Estimated peak irrigation water demand for Phase 3 and future planned expansions at the cemetery is 0.46 million gallons per day. Irrigation water is distributed throughout the developed portions of the cemetery via main lines that range from 1.5 to 6 inches in diameter.
- Three stormwater ponds, totaling approximately 1.25 acres, constructed during the Phase 3 expansion are used to manage stormwater at the National Cemetery. Storm sewer pipes convey stormwater from parking lots, roads, and other impervious surfaces within the cemetery to the retention ponds. An additional 54.9 acre-feet of stormwater detention capacity is expected to be required for the Phase 4 development area (Jacobs & LRS, 2023).
- Wastewater is discharged from the National Cemetery to several septic tanks and a lift station operated by the Village of Elwood PWD. Wastewater generated by the Administration/Maintenance Building and nearby outbuildings discharges via 2-inch sanitary sewer force mains to two on-site septic tanks with a 20,000 square foot drain field located west of the Administration/Maintenance Building. The septic tank capacities are 1,500 gallons and 1,000 gallons for a total of 2,500 gallons. The Public Information (Visitor) Center discharges

wastewater via 2-inch sanitary sewer force main to a 1,500-gallon septic tank with a 10,000 square foot drain field. As a part of the Phase 3 expansion, a new Public Restroom (Restroom Building J) was constructed along George Washington Avenue and discharges to the existing Village of Elwood PWD lift station to the east of South Diagonal Road. Several presumably abandoned sanitary sewer pipes additionally exist in the Phase 4 site area where structures previously existed, as shown in the Phase I Environmental Site Assessment aerial photographs, until demolished in the early 2000s.

### 3.15.2 Environmental Consequences

#### 3.15.2.1 Proposed Action

The Proposed Action would increase the consumption of utilities, including electricity, natural gas, potable and irrigation water, and stormwater/sanitary sewer discharges. These major utilities are already provided to the Abraham Lincoln National Cemetery and would likely have the capacity to meet forecasted demands; however, each utility provider would be required to review final designs and plans to determine if anticipated demands for utilities can be met. Additionally, the Proposed Action accounts for the anticipated need for additional stormwater detention capacity within the Phase 4 site development area. There are no significant impacts to utilities anticipated as a result of the proposed projects.

#### 3.15.2.2 No Action Alternative

Under the No Action Alternative, the western extent of the National Cemetery would remain undeveloped. There would be no impacts related to utilities associated with the No Action Alternative.

## 3.16 Environmental Justice

Environmental justice is 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.

This section analyzes the presence of minority and low-income populations and existing pollution exposure for the community surrounding the Abraham Lincoln National Cemetery. The 2016 *Promising Practices for EJ Methodologies in NEPA Reviews* report by the Federal Interagency Working Group on Environmental Justice and NEPA Committee was used to guide the development of this section.

### 3.16.1 Affected Environment

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and EO 14008, *Tackling the Climate Crisis at Home and Abroad*, require Federal agencies to, "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

The USEPA-developed Environmental Justice Screening and Mapping Tool, EJSCREEN, was used to identify and compare minority and low-income populations. These populations in the vicinity of the sites were compared to statewide data. A one-mile buffer was applied around the approximate centroid of the Phase 4 Gravesite Development and Improvements project area of the Abraham Lincoln National Cemetery for this screening-level analysis. The community surrounding the Proposed Action area does not have a disproportionately high minority or low-income population when compared to the State of Illinois. A summary of the socioeconomic indicators for the Proposed Action surrounding community is provided in Table 3-12.

**Table 3-12. Socioeconomic Indicators within One Mile of the Proposed Action**

| Socioeconomic Indicator | Value (%) | State Average (%) | Percent Difference (%) |
|---|---|---|---|
| Demographic Index | 15 | 34 | -19 |
| Supplemental Demographic Index | 10 | 14 | -4 |
| People of Color | 10 | 39 | -29 |
| Low Income | 21 | 29 | -8 |
| Unemployment Rate | 5 | 7 | -2 |
| Limited English-Speaking Households | 2 | 4 | -2 |
| Less Than High School Education | 5 | 11 | -6 |
| Under Age 5 | 5 | 6 | -1 |
| Over Age 64 | 13 | 17 | -3 |
| Low Life Expectancy | 20 | 20 | 0 |
| Source: (USEPA, 2023a) | | | |

EJSCREEN was also used to determine relative pollution exposure and proximity to potential sources of environmental pollution within the one-mile buffer of the Abraham Lincoln National Cemetery. The National Cemetery and its surrounding community are exposed to more fine particulate matter, air toxics (hazardous air pollutants), toxic releases to air, and Superfund sites than is considered average for the State of Illinois. These results are summarized in Table 3-13.

**Table 3-13. Pollution and Sources within One Mile of the Proposed Action**

| Pollution Exposure or Source | Value | State Average | Percent Difference (%) |
|---|---|---|---|
| Particulate Matter 2.5 (µg/m$^3$) | 9.69 | 9.44 | + 2.6 |
| Ozone (ppb) | 62.5 | 63.6 | - 1.7 |
| Diesel Particulate Matter (µg/m$^3$) | 0.257 | 0.358 | - 32.8 |
| Air Toxics Risk (lifetime risk per million) | 30 | 28 | + 6.9 |
| Air Toxics Respiratory Hazard Index | 0.3 | 0.29 | + 3.9 |
| Toxic Releases to Air | 8,600 | 6,000 | + 35.6 |
| Traffic Proximity (daily traffic count/distance to road) | 9.8 | 200 | -181.3 |
| Lead Paint (% pre-1960 housing) | 0.29 | 0.44 | - 41.1 |
| Superfund Proximity (site count/km distance) | 0.2 | 0.095 | + 71.2 |
| RMP Facility Proximity (facility count/km distance) | 0.19 | 0.72 | - 116.5 |
| Hazardous Waste Proximity (facility count/km distance) | 0.38 | 1.7 | - 126.9 |
| Underground Storage Tanks (count/km$^2$) | 0.48 | 8.6 | - 178.8 |
| Wastewater Discharge (toxicity-weighted concentration/m distance) | 0.00026 | 38 | - 200.0 |

Percent difference is calculated as:

$$PD = \frac{|Value - State\ Average|}{(Value + State\ Average) \div 2} \times 100$$

µg/m$^3$ = micrograms per cubic meter
ppb = parts per billion
km$^2$ = square kilometer

| Pollution Exposure or Source | Value | State Average | Percent Difference (%) |
|---|---|---|---|
| km = kilometer<br>m = meter<br>RMP = Risk Management Plan<br><br>Source: (USEPA, 2023a) | | | |

Inhalation of ambient air is the exposure pathway for fine particulate matter and air toxics. The impact analysis for air quality is discussed in Section 3.2. Abraham Lincoln National Cemetery was formerly part of the JOAAP Manufacturing Area and is adjacent to the former JOAAP Loading and Packaging area, both sites are actively being remediated under CERCLA.

### 3.16.2 Environmental Consequences

Direct and indirect effects of pollution sources and exposure pathways that are higher than average for the Proposed Action surrounding community, compared to the average for the State of Illinois, are discussed below.

#### 3.16.2.1 Proposed Action

There are no effects or exposure pathways that are higher than average for the Proposed Action surrounding community when compared to the State average. Air emissions of fine particulate matter and hazardous air pollutants from sources including vehicles and construction equipment as a result of the Proposed Action are discussed in Section 3.2 of the EA. Air emissions would be minimized through the use of air emission control devices and the BMPs discussed in Section 4.0.

The Proposed Action would not be expected to have disproportionately high or adverse impacts on low-income or minority populations within the affected area.

#### 3.16.2.2 No Action Alternative

Under the No Action Alternative, the western extent of the National Cemetery would remain undeveloped. There would be no impacts related to environmental justice associated with the No Action Alternative.

## 3.17 Cumulative Impacts

As defined by the CEQ Regulations in 40 CFR 1508.7, cumulative impacts are those which "result from the incremental impact of the proposed action when added to other past, present, and reasonably foreseeable future action, without regard to the agency (Federal or non-Federal) or individual who undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." Cumulative impact analysis captures the effects that result from the Proposed Action in combination with the effects of other actions taken during the duration of the Proposed Action in the same geographic area. Because of extensive influences of multiple forces, cumulative effects are the most difficult to analyze.

NEPA requires the analysis of cumulative environmental effects of a Proposed Action on resources that may often be manifested only at the cumulative level to the extent reasonable and practical. A review of current and upcoming Will County Department of Transportation and Village of Elwood construction projects did not reveal any potential overlap in construction timelines within the vicinity of the site.

The Midewin National Tallgrass Prairie, located east and south of the Abraham Lincoln National Cemetery, has two upcoming projects planned: (1) West Patrol Road Maintenance and Culvert Work and

(2) Visitor Vault Toilet and Parking Construction. The Decision Memos for the projects, published in September 2023, include information pertaining to the project scopes, which are summarized below in addition to any potential for cumulative impacts in conjunction with the Proposed Action.

The West Patrol Road Maintenance and Culvert Work project is expected to be implemented during the 2024 fiscal year and is anticipated to take approximately one week to complete. The project will replace a culvert at the northern end of Boathouse Road, located approximately 3.3 miles from the cemetery; remove and backfill a 50-foot culvert on West Patrol Road, located approximately 1.9 miles from the cemetery; clean one pair of existing corrugated metal pipes on West Patrol Road, located approximately 1.6 miles from the cemetery; and perform maintenance along West Patrol Road to restore its grade. This project is categorically excluded from further analysis and documentation in an EA or Environmental Impact Statement (EIS) since it is considered a routine activity included within 36 CFR 220.6(d)(4) and 220.6(e)(18). Additionally, the project will implement BMPs to reduce erosion and minimize sedimentation.

The Visitor Vault Toilet and Parking Construction project is also expected to be implemented during the 2024 fiscal year and is anticipated to take approximately one week to complete. The project will construct a vault riser toilet, gravel parking area, and connecting gravel walkways north of the existing Supervisor's Office driveway, located approximately 3 miles from the cemetery. This project is categorically excluded from further analysis and documentation in an EA or EIS since it is considered a routine activity included within 36 CFR 220.6(e)(21).

Due to the short duration of these projects, distances from the cemetery, BMPs to be implemented, and minimal anticipated environmental and community impacts, the West Patrol Road Maintenance and Culvert Work and the Visitor Vault Toilet and Parking Construction projects are not anticipated to result in any significant cumulative impacts.

There were no other projects identified in the surrounding area of the National Cemetery as potentially occurring at the same time as the Proposed Action. Therefore, there are no cumulative impacts identified for the Proposed Action.

## 3.18 Potential for Generating Substantial Controversy

VA solicited input from various Federal, State, and local government agencies regarding the Proposed Action. Several agencies provided input; none of which identified opposition to the Proposed Action.

See Section 5.0 and Appendix B for more information.

# 4.0 Protection and Compliance Measures

| Resource Area | Description | Type |
|---|---|---|
| Aesthetics | Design new structures to be architecturally and visually consistent with the current buildings located at the National Cemetery. | BMP |
| | Maintain landscaped areas, buildings, roadways, and signage. | BMP |
| | Incorporate existing topography and natural features into site design, wherever possible. | BMP |
| | Conduct construction activities with a sensitivity toward maintaining the dignity and solemnity of the National Cemetery environment during interment services. | BMP |
| Air Quality | Use appropriate fugitive dust suppression measures. | BMP |
| | Use newer construction equipment with emissions controls and maintain equipment. | BMP |
| | Reduce idling of construction equipment and vehicles to minimize exhaust emissions. | BMP |
| | Perform all demolition work under licensed contractors. | Regulatory requirement |
| | Use standard measures to control dust to reduce Lead Bearing Substances dust emissions during renovation. | BMP |
| | Implement site-specific SWPPP and erosion and sediment control plan to minimize and avoid fugitive dust as applicable. | Regulatory requirement |
| Greenhouse Gas Emissions and Climate Change | Use low-GHG-emitting technologies. | BMP |
| | Procure construction materials with lower amounts of embodied carbon. | BMP |
| | Utilize local contractors and shared transportation where feasible to minimize mileage traveled by workers to and from the site. | BMP |
| Cultural and Historic Resources | In the event human remains or other cultural items, as defined by the Native American Graves Protection and Repatriation Act , are found during construction or operation of the National Cemetery, work would be | Regulatory requirement |

| | | |
|---|---|---|
| | halted in the area and the appropriate authorities and Tribes would be contacted. | |
| | If the project's scope of work changes from that which has been submitted to and approved by the Illinois SHPO, changes must be emailed to SHPO.Review@Illinois.gov and to Anthony Rubano (Anthony.Rubano@Illinois.gov) for review and comment. Further, respective Tribes would be notified for consultation. | Regulatory requirement |
| Geology and Soils | Implement an erosion and sediment control plan to address soil disturbance during construction that includes the implementation of erosion and sediment control devices and stabilization practices. | Regulatory requirement |
| Hydrology and Water Quality | Use environmentally sensitive site design, stormwater pollution prevention controls, good engineering practices, and construction BMPs. | BMP |
| | Implement appropriate groundwater engineering controls and dewatering practices should groundwater be encountered during construction. | BMP |
| | Locate machinery servicing and refueling areas away from waterways to reduce the possibility and minimize the impacts of any accidental spills or discharges. | BMP |
| Wildlife and Habitat | Operate all vehicles traveling within and around the project area in accordance with posted speed limits. Vehicles should avoid snakes in the road. | BMP |
| | Restrict all vegetation removal and disturbance (e.g., burning, mowing, trimming) to months when the eastern massasauga rattlesnake species is likely to be hibernating (i.e., October to mid-March). | BMP |
| | Perform limited vegetation and tree clearing only during the USFWS-designated winter clearing window for the northern long-eared bat (October 1 through March 31). Limiting vegetation removal to occur only between October 1 through March 31 will avoid impacts to migratory birds. | |
| | Provide identification and awareness training regarding the potential presence of eastern massasauga rattlesnake to construction personnel. | BMP |

| | | |
|---|---|---|
| | Immediately stop construction if an eastern massasauga rattlesnake is observed. Cease activities until proper agency coordination is conducted. | BMP |
| | Limit vegetation removal within the area to the extent possible. | BMP |
| Noise | Limit construction-related noise near sensitive receptors and coordinate proposed construction activities in advance with any nearby sensitive receptors. | BMP |
| | Shut down noise-generating equipment when it is not needed and maintain equipment per manufacturer's recommendations to minimize noise generation. | BMP |
| | Utilize broadband, self-adjusting backup alarms in lieu of backup-beepers consistent with applicable safety requirements and encourage construction personnel to operate equipment in the quietest manner practicable. | BMP |
| | Locate stational operating equipment as far away from sensitive receptors as possible. | BMP |
| | Select material transportation routes as far away from sensitive receptors as possible. | BMP |
| | Maintain equipment per manufacturer's recommendations to minimize noise generation. | BMP |
| Land Use | As a Federal agency operating within Federal lands, VA is not subject to local zoning regulations. None required. | N/A |
| Floodplains, Wetlands, and Coastal Zone Management | Implement a SWPPP as part of the IEPA General Storm Water Permit for Construction Site Activities permit to address stormwater runoff into adjacent water resources during construction. | Regulatory requirement |
| | Clearly demarcate designated work areas. | BMP |
| | Avoid floodplains and Waters of the United States. | BMP |
| | Maintain a minimum 25-foot buffer of undisturbed land around the adjacent wetland. | BMP |

| | | |
|---|---|---|
| | Inspect and maintain construction vehicles in good working order and maintain a spill kit. | BMP |
| Socioeconomics | Secure the construction area to prevent unauthorized access to the property and to reduce the potential of health and safety risks. | Protection Measure |
| Community Services | Coordinate any short-term road closures with the local emergency and transportation services to prevent significant disruption to their services. | BMP |
| Solid Waste and Hazardous Materials | Store and appropriately label petroleum products and hazardous materials in approved containers. | BMP |
| | Store containers on a level and impervious surface. | BMP |
| | Use secondary containment systems around fuel storage containers during refueling activities. Should a spill or release occur, any impacted soil would be properly handled per Federal and State laws and regulations. | Regulatory requirement |
| Traffic, Transportation, and Parking | Coordinate with the Village of Elwood on any short-term road closures during construction. | BMP |
| | Sequence construction to the extent feasible to minimize impacts to traffic or transportation patterns. | BMP |
| Utilities | None required. | N/A |
| Environmental Justice | None required. | N/A |

# 5.0 Public Participation

VA invites public participation in decision-making on new proposals through the NEPA process. Public participation is guided by the VA NEPA regulations (38 CFR Part 26) and with additional guidance provided in VA's NEPA Interim Guidance for Projects. Agencies, organizations, and members of the public with a potential interest in the Proposed Action are encouraged to participate.

## 5.1 Agency Coordination

VA coordinated with agencies regarding the proposed construction projects at the Abraham Lincoln National Cemetery. In September 2023, VA distributed scoping letters to agencies, State, county, and municipal governments, including USACE, USDA, USFWS, U.S. Army, and IEPA. VA also initiated Section 106 consultation with Illinois SHPO in September 2023. Illinois SHPO provided concurrence on October 12, 2023, with VA's finding that no historic archaeological properties are known to exist within the APE; however, the Abraham Lincoln National Cemetery is a historic district eligible for the NRHP. The Illinois SHPO stated that because the undertaking proposes to appropriately repair contributing resources to the historic district, the project meets the Secretary of the Interior's Standards for Rehabilitation and will not adversely affect any historic resources.

In addition to the regulatory framework of NEPA, the CEQ Regulations Implementing the Procedural Provisions of NEPA, VA's NEPA regulations (38 CFR Part 26), and VA's NEPA Interim Guidance for Projects, various Federal, State, and/or local environmental permits and approvals are required as part of the Proposed Action. This list may not be exhaustive and additional compliance requirements and/or permits may be necessary. Appendix A provides information from the Regulatory Requirements Report for the Proposed Action.

## 5.2 Native American Consultation

VA coordinated with Federally-recognized Native American Tribes in the vicinity of the National Cemetery, including Citizen Potawatomi Nation, Oklahoma; Forest County Potawatomi Community of Wisconsin; Hannahville Indian Community Band of Potawatomi, Michigan; Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas; Kickapoo Tribe of Oklahoma; Little Traverse Bay Bands of Odawa Indians; Menominee Indian Tribe of Wisconsin; Miami Tribe of Oklahoma; Peoria Tribe of Indians of Oklahoma; and Prairie Band Potawatomi Nation. Section 106 consultation letters were also sent to the Tribes.

During the Section 106 consultation process, the Miami Tribe stated concerns with the project's proximity to several multi-component archaeological sites. VA's response discussed the results of the geoarchaeological assessment conducted between October 26 and November 2, 2022, which found no cultural materials in the shovel tests performed. VA also pointed to the Illinois SHPO's concurrence with VA on October 12, 2023, that no historic archaeological properties are known to exist within the APE. Still, VA is committed to protecting archeological sites and will continue to consult with Tribes should the scope of the project change or archaeological resources be discovered.

The Forest County Potawatomi Community of Wisconsin concurred with VA's finding that no historic properties would be affected by the Proposed Action and requested to remain as a consulting party for the project. There has been no additional correspondence with Native American Tribes.

## 5.3 Scoping

VA provided federal, state, and local agencies; the public; and potentially affected parties with an opportunity to participate in scoping. Scoping is a tool for identifying the issues that should be addressed during the NEPA and NHPA compliance processes. Scoping allows the agencies, public, and

stakeholders to help define priorities and express stakeholder and community issues to the agency through oral and written comments.

VA published a notice of scoping on September 29 and 30, 2023 in The Herald-News and a statewide public notice website. The notice described the Proposed Action and solicited public comments with a deadline of 30 days after the publishing date, or October 30, 2023.

VA mailed letters to federal, state, and local agencies; public officials; Federally-recognized Tribes; and any identified special interest groups. Similar to the notices published in the newspaper, the letters included information on the Proposed Action, comment period, and instruction on submitting comments.

Scoping responses regarding the Proposed Action have included a request for continued consultation and a statement of no objection from the Miami Tribe of Oklahoma as well as guidance from the U.S. Army Corps of Engineers – Chicago Regulatory District regarding aquatic resource investigations and permitting processes.

## 5.4 Public Review

VA published and distributed the Draft EA for a 30-day public comment period as announced by a NOA published in The Herald-News on October 17 and 18, 2023. Review copies of the Draft EA were made available online at https://www.cfm.va.gov/environmental/index.asp and at the Joliet Public Library located at 150 North Ottawa Street, Joliet, Illinois 60432. VA received comments from USACE, USFWS, the Miami Tribe of Oklahoma, and the Forest County Potawatomi Community of Wisconsin, all of which have been addressed in this Final EA. Table 5-1 below provides a brief summary of the comments received on the Draft EA and the location within the EA where the comment has been addressed, where applicable. For further information regarding public correspondence on the Draft EA, see Appendix B.

**Table 5-1. Summary of Public Comments Received on the Draft EA**

| Agency/Tribe/Stakeholder | Comment | Section in EA |
|---|---|---|
| USACE, Chicago District – Regulatory Branch | Clarified the relevance of the "letter of no objection" received for the Phase 3 Study Area and requested removal of reference to the letter.<br>Requested that Figure 3-5 be revised to include the 2018 wetland delineation report boundaries.<br>Requested that the total number of wetlands and streams identified in the 2018 report be included and the report be included as an Appendix in the Final EA. | Section 3.10 and Appendix E |
| USFWS | Requested that effects determinations for all Federally-listed species be included in the Final EA.<br>Requested that all project records generated by IPaC be included in the Final EA.<br>Requested that the Final EA identify the acreage of trees to be | Section 3.7 and Appendix D |

| | | |
|---|---|---|
| | cleared and suitability as roost trees to support effect determination for the Northern long-eared bat.<br>Requested a “no effect” determination for the eastern massasauga rattlesnake. | |
| Miami Tribe of Oklahoma | Offered no objection to the Proposed Action but requested to be consulted should any human remains, cultural items, or archaeological evidence be discovered. | N/A |
| Forest County Potawatomi Community of Wisconsin | Requested to be consulted in the event of an inadvertent discovery. | N/A |

# 6.0 Agencies and Persons Consulted

| Affiliation | Contact | Address | Email and Phone Number |
|---|---|---|---|
| **Federal Agencies** | | | |
| U.S. Army Corps of Engineers, Chicago District | Soren Hall, Senior Project Manager / Team Leader | 231 South LaSalle Street, #1500 Chicago, IL 60604 | Soren.G.Hall@usace.army.mil<br>312-846-5532 |
| U.S. Department of Agriculture - Bourbonnais Service Center | Trenton Rader, District Conservationist | 685 Larry Power Road Bourbonnais, IL 60914 | trenton.rader@usda.gov |
| U.S. Fish and Wildlife Service Chicago Field Office | Kristopher Lah, Endangered Species Coordinator | 230 South Dearborn Street, Suite 2938 Chicago, IL 60604 | Kristopher_Lah@fws.gov<br>847-366-2347 |
| U.S. Army Environmental Command | COL Matthew F. Kelly, Commander | 2455 Reynolds Road, Bldg. 2266 JBSA Fort Sam Houston, TX 78234-7588 | usarmy.jbsa.imcom-aec.mbx.public-mailbox@army.mil<br>210-466-1590 |
| **State Agencies** | | | |
| Illinois Department of Natural Resources State Historic Preservation Office | CJ Wallace, Cultural Resources Coordinator | 1 Natural Resources Way Springfield, IL 62702 | SHPO.Review@Illinois.gov<br>217-785-5027 |
| Illinois Department of Natural Resources, Office of Water Resources | Loren Wobig, Director | 1 Natural Resources Way Springfield, IL 62702 | loren.wobig@illinois.gov<br>217-782-9130 |
| Illinois Department of Natural Resources, Office of Planning | Amy Madigan, Greenways and Trails Manager | 1 Natural Resources Way Springfield, IL 62702 | amy.madigan@illinois.gov |
| Illinois Department of Natural Resources, Division of | Nathan Grider, Division Manager | 1 Natural Resources Way Springfield, IL 62702 | nathan.grider@illinois.gov |

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|---|---|---|---|
| Ecosystems and Environment | | | |
| Illinois Department of Military Affairs | Maj. Gen. (ret.) William Cobetto, Chief of Staff | 1301 North MacArthur Boulevard Springfield, IL 62702 | ng.il.ilarng.mbx.state-personnel@mail.mil |
| Illinois Environmental Protection Agency | | 1021 North Grand Avenue East P.O. Box 19276 Springfield, IL 62794-9276 | EPA.ContactUs@illinois.gov 217-782-3397 |
| Illinois Department of Agriculture, BLWR, Will-South Cook Soil and Water Conservation District | Rob Ogalia, Chairman | 1201 S. Gougar Road New Lenox, IL 60451 | 815-462-3106 (Ext. 3) |
| **Local Agencies** | | | |
| Will County, Land Use Department | Development Services Division | 58 East Clinton Street, Suite 100 Joliet, IL 60423 | building@willcountylanduse.com hpc@willcountyillinois.com luengineering@willcountyillinois.com zoning@willcountyillinois.com 815-740-8140 |
| Village of Elwood | Greg Hickey, Chairman of Planning & Zoning Commission | 401 East Mississippi Avenue Elwood, IL 60421 | greg.hickey@villageofelwood.com 815-423-5011 |
| Midewin National Tallgrass Prairie | Christina Henderson, Prairie Supervisor's Office and Welcome Center | 30239 South State Route 53 Wilmington, IL 60481 | mailroom_r9_midewin_national_tallgrass_prairie@usda.gov 815-423-6370 |
| Village of Elwood | Doug Jenco, Village President | 401 East Mississippi Avenue Elwood, IL 60421 | doug.jenco@villageofelwood.com 815-423-5011 |
| **Elected Officials** | | | |

| | | | |
|---|---|---|---|
| U.S. Senate | Tammy Duckworth, Senator | 524 Hart Senate Office Building Washington, DC 20510 | Dan_McManus@duckworth.senate.gov<br>202-224-2854 |
| U.S. Senate | Dick Durbin, Senator | 711 Hart Senate Building Washington, D.C. 20510 | 202-224-2152 |
| U.S. House of Representatives | Lauren Underwood, Representative | 1410 Longworth House Office Building Washington, DC 20515 | 202-225-2976 |
| State of Illinois | JB Pritzker, Governor | 401 S. Spring St. Springfield, IL 62704 | 217-782-6830 or 217-782-6831 |
| Illinois House District 86 | Lawrence Walsh, Jr., State Representative | 200-9S Stratton Office Building Springfield, IL 62706 | statereplarrywalshjr@gmail.com<br>217-782-8090 |
| Illinois Senate District 43 | Rachel Ventura, State Senator | 119B Capitol Building Springfield, IL 62706 | 217-782-8800 |
| **Tribes** | | | |
| Citizen Potawatomi Nation, Oklahoma | John Barrett, Chairman | 1899 S. Gordon Cooper Drive Shawnee, OK 74801 | jbarrett@potawatomi.org<br>405-878-5830 |
| Menominee Indian Tribe of Wisconsin | David Grignon, Director of THPO | PO Box 910 Keshena, WI 54135-0910 | chairman@mitw.org<br>715-799-5258 |
| Hannahville Indian Community, Michigan | Kenneth Meshigaud, Chairperson | N14911 Hannahville B1 Road Wilson, MI 49896 | tyderyien@hannahville.org<br>906-466-9933 |
| Miami Tribe of Oklahoma | Chief Lankford, Chief | PO Box 1326 Miami, OK 74355 | THPO@miamination.com<br>918-541-8966 |
| Little Traverse Bay Bands of Odawa Indians, Michigan | Melissa Wiatrolik, THPO | 7500 Odawa Circle Harbor Springs, MI 49740 | tribalchair@ltbbodawa-nsn.gov<br>242-1408 (Ext. 1408) |

| | | | |
|---|---|---|---|
| Prairie Band Potawatomi Nation | Joseph "Zeke" Rupnick, Chair Person | 16281 Q Road<br>Mayetta, KS 66509 | josephrupnick@pbpnation.org<br>785-966-4008 |
| Peoria Tribe of Indians of Oklahoma | Craig Harper, Chief | 118 S. Eight Tribes Trail<br>Miami, Oklahoma 74354 | chiefharper@peoriatribe.com<br>918-540-2535 (Ext. 2702) |
| Kickapoo Tribe of Oklahoma | Darwin Kaskaske, Chairman | PO Box 70<br>McLoud, OK 74851 | darwin.kaskaske@okkt.net<br>405-964-4227 |
| Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas | Johanna Thomas, Vice Chair | 1107 Goldfinch Road<br>Horton, KS 66439 | johannathomas83@yahoo.com<br>785-486-2601 (Ext. 103) |
| Forest County Potawatomi Community of Wisconsin | Ben Rhodd, MS, RPA, THPO, Chief of Historic and Cultural Preservation Board | P.O. Box 340<br>Crandon, WI 54520 | benjamin.rhodd@fcp-nsn.gov<br>715-478-7200 |
| Inter-Tribal Environmental Council | April Hathcoat, Environmental Programs Director | P.O. Box 948<br>Tahlequah, OK 74464 | April-Hathcoat@Cherokee.org<br>918-453-5098 |
| **Local Community** | | | |
| CenterPoint Intermodal Center - Joliet/Elwood | Brian McKiernan, Senior Vice President of Development | 1808 Swift Drive, Suite A<br>Oak Brook, IL 60523 | bmckiernan@centerpoint.com<br>630-586-8113 |
| BNSF Logistics Park Chicago | Michael R. Smythers Jr., Vice President of Federal Government Affairs | 26664 Baseline Road<br>Elwood, IL 60421 | 202-347-8662 |
| NFI Industries | | TRIAD1828 Centre<br>2 Cooper Street<br>Camden, NJ 08102 | 877-634-3777 |
| TTX Company FMO - BNLP | | 101 N. Wacker Drive<br>Chicago, IL 60606 | 312-853-3223 |

| | | | |
|---|---|---|---|
| Partners Warehouse | Craig Sesemann, President | 26634 S. CenterPoint Drive<br>Elwood, IL 60421 | 815-423-9100 |

# 7.0 List of Preparers

## 7.1 Department of Veterans Affairs Staff

Mr. Fernando Fernandez
Environmental Engineer
Construction & Facilities Management
U.S. Department of Veterans Affairs

## 7.2 LRS Federal, LLC

| Name and Title | Years of Experience |
|---|---|
| Jesse Byrd, Project Manager | 18 |
| Kelsey Hall, P.E., Environmental Engineer | 9 |
| Sara Schulkowski, Environmental Engineer | 5 |

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# 9.0 Glossary

**Aesthetics—**Pertaining to the quality of human perception of natural beauty.

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

**Ambient Air Quality Standards—**Those standards established according to the Clean Air Act to protect health and welfare.

**Aquifer—**An underground geological formation containing usable amounts of groundwater that can supply wells and springs.

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

**Best management practices (BMPs)—**Methods, measures, or practices to prevent or reduce environmental impacts.

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

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

**Cultural resources—**The physical evidence of our Nation's heritage. Includes archaeological sites; historic buildings, structures, and districts; and localities with social significance to the human community.

**Decibel (dB)—**A unit of measurement of sound pressure level.

**Direct impact—**A direct impact is caused by a proposed action and occurs at the same time and place.

**Emission—**A release of a pollutant.

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

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

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

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

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

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

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

**Hazardous materials—**Defined within several laws and regulations to have certain meanings. For this document, a hazardous material is any one of the following:

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

**Indirect impact—**An indirect impact occurs later in time or farther removed in distance from the action causing it, but is still reasonably foreseeable. Indirect impacts may include induced changes in the pattern of land use, population density or growth rate, and related effects on air, water, and other natural and social systems.

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

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

**Mitigation—**Measures taken to reduce adverse impacts on the environment.

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

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

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

**Particulates or particulate matter—**Fine liquid or solid particles such as dust, smoke, mist, fumes, or smog found in air.

**Physiographic region—**A portion of the Earth's surface with a basically common topography and common morphology.

**Remediation—**An action that reduces or eliminates a threat to the environment; often used to refer to "clean up" of chemical contamination in soil or water.

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

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

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

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

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

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

**Topography—**The relief features or surface configuration of an area.

**Waters of the United States—**Include the following: territorial seas and traditional navigable waters; tributaries; lakes, ponds, and impoundments of jurisdictional waters; and adjacent wetlands.

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

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

**Wildlife habitat—**Set of living communities in which a wildlife population lives.

# A Appendix A: Permits

In addition to the regulatory framework of NEPA, the CEQ Regulations Implementing the Procedural Provisions of NEPA, VA's NEPA regulations (38 CFR Part 26), and VA's NEPA Interim Guidance for Projects, the following federal, state, and/or local environmental permits are required as part of the proposed action. While the federal government applies only for federal permits and authorizations, VA will demonstrate consistency with State and local regulations, even if not applying for these permits. This list may not be exhaustive and additional permits and authorizations may be necessary following final design.

- National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP)
    - The CGP is required for land disturbances[2] of 1 acre or more (including borrow and materials storage areas) that have the potential to discharge stormwater to waters of the U.S. or a storm sewer.
    - This permit is issued by the Illinois Environmental Protection Agency and would require the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP).
    - Additional information about this permit is available at: https://www2.illinois.gov/epa/topics/forms/water-permits/storm-water/Pages/construction.aspx
- Erosion Control Permit
    - This permit is required by the Elwood, Illinois Code of Ordinances, Chapter 157: Soil Erosion and Sediment Control, and applies to any land disturbing activity that will affect an area in excess of 5,000 square feet; any land disturbing activity that will affect an area in excess of 500 square feet if the activity is within 25 feet of a lake, pond, stream, or wetland; or excavation, fill, or any combination thereof that will exceed 100 cubic yards.
    - Additional information about this permit is available at: https://codelibrary.amlegal.com/codes/elwood/latest/elwood_il/0-0-0-21137
- Permit to Construct, Modify or Abandon a Water Well (if applicable)
    - Per the Illinois Administrative Code, Part 920.130, the Department of Public Health requires a permit to construct, deepen, modify, or seal a water well prior to start of work.
    - Additional information about this permit is available at: http://ilrules.elaws.us/iac/t77_pt920_sec.920.130
- Illinois Environmental Protection Agency Bureau of Air Title V Permit
    - The National Cemetery is under the jurisdiction of the Illinois Environmental Protection Agency Bureau of Air. The Air Quality Control Region containing the cemetery is Will County. The county is currently in non-attainment for ozone and in full attainment for all other criteria pollutants.
    - VA does not have, and is not required to have, a Title V operating permit based on current and proposed conditions.
    - In accordance with EO 13045 on children's health, EPA recommends operators and workers using diesel-powered equipment pay particular attention to worksite proximity to

[2] Land Disturbance means exposed soil due to clearing of vegetation, grading, or excavation activities.

where children may learn, play, or live and to impose diesel emission reduction measures near these locations. Possible sensitive air quality receptors adjacent to the National Cemetery include the Village of Elwood.

- Clean Water Act (CWA) Section 404 Permit and Section 401 Certification
    - There were five areas meeting wetland criteria and two areas meeting waterway criteria identified and delineated within the Phase 4 project vicinity in 2018 (Anderson Engineering of Minnesota, LLC, 2019).
    - Impacts to wetlands and/or waterways are not anticipated. For impact to wetlands or waterways, VA would need to request a CWA Section 404 Permit Authorization from the U.S. Army Corps of Engineers, Chicago District, and a CWA Section 401 Water Quality Certification from the Illinois Department of Natural Resources, Office of Water Resources, Region II.
    - Additional information about the CWA Section 404 Permit is available at:

      https://www.usace.army.mil/missions/civil-works/Regulatory-Program-and-permits/Obtain-a-Permit/
    - Additional information about the CWA Section 401 Certification is available at:

      https://www2.illinois.gov/epa/topics/forms/water-permits/401-water-quality-certification/Pages/default.aspx

# B Appendix B: Agency Correspondence

B.1 Scoping Notice, Proof of Publication of Scoping Notice and Correspondence

Scoping Notice

**U.S. DEPARTMENT OF VETERANS AFFAIRS**
**Office of Construction & Facilities Management**
**Washington DC 20420**

September 21, 2023

*Sent via email*

**SUBJECT: Scoping Notice for the Proposed Abraham Lincoln National Cemetery Major Expansion Draft Environmental Assessment Located in Elwood, Will County, Illinois**

Dear Valued Stakeholder:

The U.S. Department of Veterans Affairs (VA) is preparing a Draft Environmental Assessment (EA) to analyze the potential environmental impacts associated with the Proposed Action to implement a phased expansion of the Abraham Lincoln National Cemetery (National Cemetery) located at 20953 West Hoff Road in Elwood, Will County, Illinois. VA's proposed Phase 4 Gravesite Development and Improvement Project (Proposed Action) encompasses approximately 197 acres, including previously developed portions of the National Cemetery. The location of the National Cemetery and proposed Phase 4 expansion is shown in Figures 1 and 2.

The purpose of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois. The Proposed Action is needed to meet the National Cemetery Administration's (NCA's) goal of providing eligible veterans and their family members with reasonable access to VA interment options.

This scoping notice is being published concurrently in the *Herald-News*, a local newspaper in Joliet, Illinois, and on the VA website at https://www.cfm.va.gov/environmental to inform and solicit input from the public.

VA will prepare the Draft EA according to the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code 4321-4370h), the Council on Environmental Quality Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and VA Implementing Regulations (38 CFR Part 26). VA recognizes that you, as an identified stakeholder, may have comments on the scope of issues for analysis or information relevant to the Proposed Action for consideration in the Draft EA. Please submit your comments/information via email within 30 days following receipt of this notice to vacoenvironment@va.gov with the subject line, "Abraham Lincoln National Cemetery EA Scoping."

Through this notice, VA is also seeking public comment and input for effects on historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, (54 USC § 306108), and its implementing regulations (36 CFR Part 800 – Protection of Historic Properties). VA is using its procedures for public involvement under NEPA in lieu of public involvement requirements in Subpart B of the Section 106 regulations per 36 CFR

800.2(d)(3). This notice does not serve as an invitation to consult under Section 106, it is solely to seek and consider the views of the public. VA will initiate its Section 106 review and send invitations to consulting parties separately. Please submit your NHPA related comments/information via email within 30 days following receipt of this notice to vacoenvironment@va.gov with the subject line, "Abraham Lincoln National Cemetery EA Scoping."

For additional information or questions, please contact Mr. Fernando Fernandez at Fernando.Fernandez@va.gov with the subject line, "Abraham Lincoln National Cemetery EA Scoping."

Respectfully,

KATHRYN DOMM

Digitally signed by KATHRYN DOMM
Date: 2023.09.21 14:11:29 -05'00'

Kathryn Domm
Director, Environmental Program Office
Office of Construction and Facilities Management

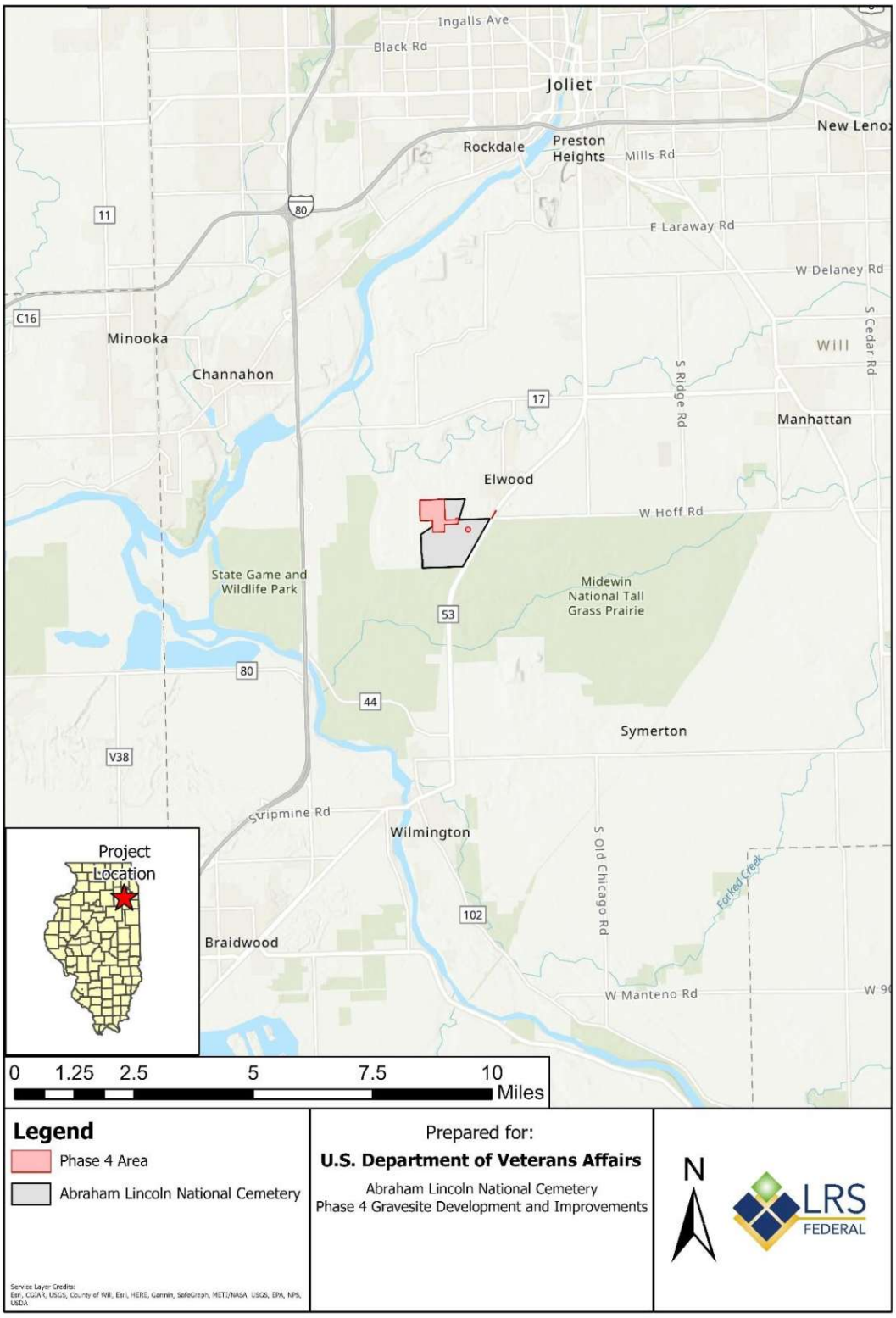


**Figure 1. Site Vicinity Map**

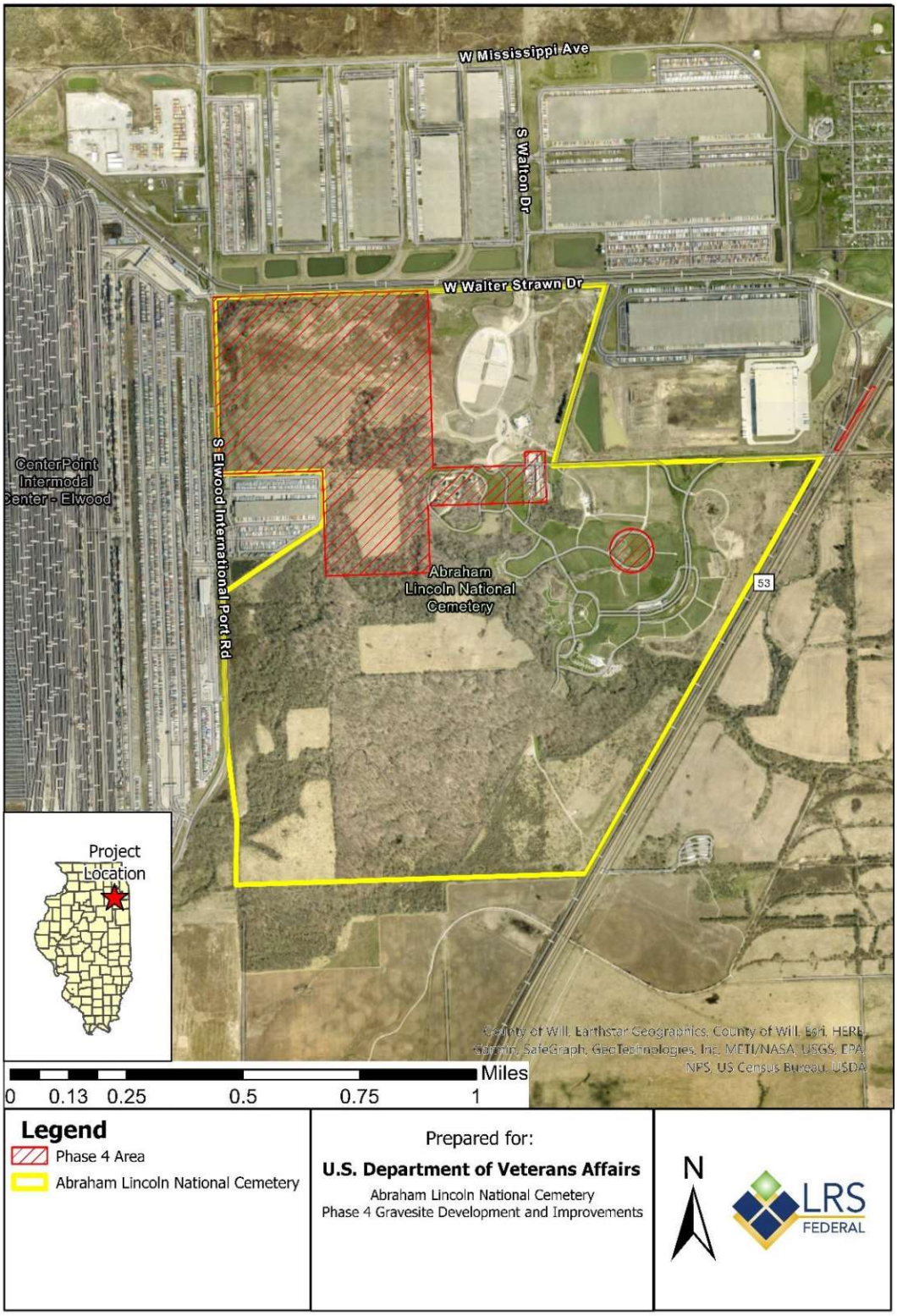


**Figure 2. Project Location Aerial Map**

Proof of Publication for Scoping Notice

Certificate of the Publisher

The Herald-News

Description:SCOPING NOTICE
2112333

HERALD-NEWS PREPAID LEGALS
MUST PRE-PAY
JOLIET IL 60436-0000

Shaw Media certifies that it is the publisher of The Herald-News. The Herald-News is a secular newspaper, has been continuously published daily for more than fifty (50) weeks prior to the first publication of the attached notice, is published in the City of Joliet, County of Will, State of Illinois, is of general circulation throughout that county and surrounding area, and is a newspaper as defined by 715 ILCS 5/5.

A notice, a true copy of which is attached, was published 2 time(s) in The Herald-News, namely one time per week for two successive week(s). Publication of the notice was made in the newspaper, dated and published on
09/29/2023 09/30/2023

This notice was also placed on a statewide public notice website as required by 5 ILCS 5/2.1.
In witness, Shaw Media has signed this certificate by J. Tom Shaw, its Publisher, at Joliet, Illinois, on
30th day of September, A.D. 2023

Shaw Media By:

J. Tom Shaw, Publisher

Account Number 10086146 Amount $457.46

**PUBLIC NOTICE**

**U.S. DEPARTMENT OF VETERANS AFFAIRS OFFICE OF CONSTRUCTION AND FACILITIES MANAGEMENT NOTICE OF SCOPING AND PUBLIC INVOLVEMENT UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT FOR THE PROPOSED MAJOR EXPANSION AT THE ABRAHAM LINCOLN NATIONAL CEMETERY IN ELWOOD, ILLINOIS**

The U.S. Department of Veterans Affairs (VA) is preparing a Draft Environmental Assessment (EA) to analyze the potential environmental impacts associated with the Proposed Action to implement a phased expansion of the Abraham Lincoln National Cemetery (National Cemetery) located at 20953 West Hoff Road in Elwood, Will County, Illinois. VA's proposed Phase 4 Gravesite Development and Improvement Project (Proposed Action) encompasses approximately 197 acres, including previously developed portions of the National Cemetery.

The purpose of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois. The Proposed Action is needed to meet the National Cemetery Administration's (NCA's) goal of providing eligible veterans and their family members with reasonable access to VA interment options.

This scoping notice is also available on the VA website at https://www.cfm.va.gov/environmental, to inform and solicit input from the public.

VA will prepare the Draft EA according to the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code 4321-4370h), the Council on Environmental Quality Regulations implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and VA implementing Regulations (38 CFR Part 26). VA recognizes that you, as an identified stakeholder, may have comments on the scope of issues for analysis or information relevant to the Proposed Action for consideration in the Draft EA. Please submit comments/information via email within 30 days following receipt of this notice to vacoenvironment@va.gov with the subject line "Abraham Lincoln National Cemetery EA Scoping".

*Through this notice, VA is also providing the public with information about the undertaking and seeking public comment and input about the undertaking's effects on historic properties pursuant to Section 106 of* the National Historic Preservation Act (NHPA) of 1966, as amended, (54 USC §306108), and its implementing regulations (36 CFR Part 800 - Protection of Historic Properties). VA is using its procedures for public involvement under NEPA in lieu of public involvement requirements in Subpart B of the Section 106 regulations per 36 CFR 800.2(d)(3). This notice does not serve as an invitation to consult under Section 106, if it is solely to seek and consider the views of the public. VA will initiate its Section 106 review and send invitations to consulting parties separately.

For additional information or questions, please contact Mr. Fernando Fernandez at Fernando.Fernandez@va.gov with the subject line, "Abraham Lincoln National Cemetery EA Scoping."

(Published in Herald-News on September 29, 30, 2023) 2112333

Scoping Correspondence

# Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com


Via email: vacoenvironment@va.gov

October 24, 2023

Mr. Fernando Fernandez
U.S. Department of Veterans Affairs
810 Vermont Avenue NW (003C)
Washington, DC 20420

Re: Abraham Lincoln National Cemetery Phase 4 Expansion - Scoping Notice for Draft Environmental Assessment – Comments of the Miami Tribe of Oklahoma

Dear Mr. Fernandez:

Aya, kweehsitoolaanki – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding Abraham Lincoln National Cemetery EA Scoping.

The Miami Tribe offers no objection to the above-referenced project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Illinois, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case please contact me at 918-541-7885 or by email at THPO@miamination.com to initiate consultation.

The Miami Tribe requests to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer, I am the point of contact for all Section 106 consultation.

Respectfully,

*Logan York*

Logan York
Tribal Historic Preservation Officer

## Jesse Byrd

**From:** Hall, Soren G CIV USARMY CELRC (USA) <Soren.G.Hall@usace.army.mil>
**Sent:** Wednesday, November 1, 2023 1:09 PM
**To:** VACOEnvironment@va.gov
**Cc:** Fernandez, Fernando L. (CFM); Jesse Byrd
**Subject:** LRC-2018-707 - Scoping Comments Request - Abraham Lincoln National Cemetery Phase 4 Expansion

Good Afternoon,

Thank you for providing our agency with an opportunity to providing scoping comments on the Phase 4 Expansion of the Abraham Lincoln National Cemetary. Previous records indicate that this area contains several wetlands and waterways that may be regulated by this office. The field work associated with the aquatic resource investigation were conducted in September of 2018. A revised assessment of the Phase 4 area would be required if a permit is sought from this office. Information regarding current aquatic resrouce assessment methods can be found on our website: https://www.lrc.usace.army.mil/Missions/Regulatory/Delineation-Standards/.

Options are available for applying for jurisdictional determinations or permits. In most instances, there is not requirement to obtain a jurisdictional determination when submitting a permit application. These options are summarized below:

1. Approved JDs: Request an approved jurisdictional determination (AJD) based upon the currently applicable WOTUS definition (i.e., the WOTUS 2023 Rule) either with or without a wetland/waters boundary concurrence. The Corps will make an official determination that there are, or are not, jurisdictional aquatic resources present on a parcel and/or within the review area and will identify the geographical limits of jurisdiction if requested. This can only be made by means of an AJD. Please note that review of your permit application would not begin until after completion of the AJD. Only an Approved JD can be appealed.

2. Preliminary JD: This option provides documentation reflecting that all resources are assumed to be jurisdictional; however, this determination is “preliminary” and therefore not binding, hence you may subsequently request completion of an AJD.
For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a PJD will treat all aquatic resources that would be affected in any way by the permitted activity on the parcel as jurisdictional. Please note that review of your permit application would not begin until after completion of the PJD.

3. There is also an option for no JD whatsoever, meaning you choose to proceed with the application process under the presumption that all potentially impacted resources are under Corps jurisdiction without completing an AJD or PJD. If you believe all resources would be considered jurisdictional under the currently applicable WOTUS definition and do not require documentation of geographic jurisdiction, option 3 would allow review of your permit application to begin immediately. Also, if a project does not propose any impacts to potentially jurisdictional resources, preparation of a "no permit required" letter may be appropriate, and no JD is required. Please note that there is no requirement to request a no permit required letter if there will be no impacts to potentially jurisdictional resources, it is simply an option. In addition, you may request a boundary concurrence under this option if needed, as well as to verify that there will be no impacts to the on-site wetlands/waters.

If you have further questions, please contact our office for a pre-application meeting and reference project number LRC-2023-XXX.

Sincerely,

Soren G. Hall
Team Leader
U.S. Army Corps of Engineers
Chicago District – Regulatory Branch
231 South LaSalle Street, 15th Floor
Chicago, Illinois 60604
Mobile: (312) 730-8839
https://www.lrc.usace.army.mil/Missions/Regulatory/

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**From:** VACO Environment < >
**Sent:** Thursday, September 28, 2023 3:47 PM
**To:** Fernandez, Fernando L. (CFM) < >
**Cc:** Jesse Byrd < >
**Subject:** [Non-DoD Source] Abraham Lincoln National Cemetery Phase 4 Expansion - Scoping Notice for Draft Environmental Assessment

**U.S. DEPARTMENT OF VETERANS AFFAIRS Office of Construction & Facilities Management**

**Washington DC 20420**

September 21, 2023

*Sent via email*

**SUBJECT: Scoping Notice for the Proposed Abraham Lincoln National Cemetery Major Expansion Draft Environmental Assessment Located in Elwood, Will County, Illinois**

Dear Valued Stakeholder:

The U.S. Department of Veterans Affairs (VA) is preparing a Draft Environmental Assessment (EA) to analyze the potential environmental impacts associated with the Proposed Action to implement a phased expansion of the Abraham Lincoln National Cemetery (National Cemetery) located at 20953 West Hoff Road in Elwood, Will County, Illinois. VA's proposed Phase 4 Gravesite Development and Improvement Project (Proposed Action) encompasses approximately 197 acres, including previously developed portions of the National Cemetery. The location of the National Cemetery and proposed Phase 4 expansion is shown in Figures 1 and 2.

The purpose of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois. The Proposed Action is needed to meet the National Cemetery Administration's (NCA's) goal of providing eligible veterans and their family members with reasonable access to VA interment options.

This scoping notice is being published concurrently in the *Herald-News*, a local newspaper in Joliet, Illinois, and on the VA website at https://www.cfm.va.gov/environmental to inform and solicit input from the public.

VA will prepare the Draft EA according to the National Environmental Policy Act (NEPA) of

1969 (42 U.S. Code 4321-4370h), the Council on Environmental Quality Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and VA Implementing Regulations (38 CFR Part 26). VA recognizes that you, as an identified stakeholder, may have comments on the scope of issues for analysis or information relevant to the Proposed Action for consideration in the Draft EA. Please submit your comments/information via email within 30 days following receipt of this notice to vacoenvironment@va.gov with the subject line, "Abraham Lincoln National Cemetery EA Scoping."

Through this notice, VA is also seeking public comment and input for effects on historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, (54 USC § 306108), and its implementing regulations (36 CFR Part 800 – Protection of Historic Properties). VA is using its procedures for public involvement under NEPA in lieu of public involvement requirements in Subpart B of the Section 106 regulations per 36 CFR 800.2(d)(3). This notice does not serve as an invitation to consult under Section 106, it is solely to seek and consider the views of the public. VA will initiate its Section 106 review and send invitations to consulting parties separately. Please submit your NHPA related comments/information via email within 30 days following receipt of this notice to vacoenvironment@va.gov with the subject line, "Abraham Lincoln National Cemetery EA Scoping."

For additional information or questions, please contact Mr. Fernando Fernandez at Fernando.Fernandez@va.gov with the subject line, "Abraham Lincoln National Cemetery EA Scoping."

Respectfully,

Kathryn Domm
Director, Environmental Program Office
Office of Construction and Facilities Management

B.2 Illinois Historic Preservation Office and Tribal Affliliate Correspondence

NHPA Section 106 Consultation Initiation Letter

**U.S. DEPARTMENT OF VETERANS AFFAIRS**
**Office of Construction & Facilities Management**
**Washington DC 20420**

Date: September 1, 2023

Jefferey Kruchten
Principal Archaeologist
Illinois State Historical Preservation Office
IDNR – One Natural Resources Way
Springfield, Illinois 62702-1271

*Sent via email*

**SUBJECT: Initiation of NHPA Section 106 Consultation for the Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project – Will County, Illinois**

Dear Mr. Kruchten,

Pursuant to Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended (54 USC 306108), the U.S. Department of Veterans Affairs (VA) National Cemetery Administration (NCA) is initiating Section 106 consultation for the proposed Phase 4 Gravesite Development and Improvement Project (Undertaking) at the Abraham Lincoln National Cemetery (National Cemetery) in Elwood, Will County, Illinois.

## Undertaking

The proposed Undertaking is Phase 4 of an eight-phase Master Plan for the expansion of the existing National Cemetery including the development of additional gravesites and cemetery improvements. Proposed improvements include stormwater management ponds and conveyances, construction of a new maintenance facility, installation of paved access roads, ancillary upgrades to Building 2002, Building 3003, the Administrative Building, and the Columbarium Plaza; and intersection improvements along Illinois Route 53 between West Hoff Road and Walter Strawn Drive/IRA Morgan Street. The VA intends to improve the National Cemetery to provide 15 years of additional interment capacity with 47 acres of additional gravesites and columbaria, including 22,800 square feet of funerary niches. The construction period for the Phase 4 expansion is two years with an estimated completion date of May 2026.

## Area of Potential Effect

Pursuant to the NHPA and its implementing regulations (36 CFR 800), an area of potential effects (APE) is defined as a geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist (36 CFR 800.16(d)). Therefore, VA has determined that the APE for the undertaking consists of approximately 197 acres of land, which includes 23.75 acres of the existing National Cemetery, 173 acres of undeveloped land northwest of the National Cemetery, and 0.62 acres along Illinois Route 53 between West Hoff Road and Walter Strawn Drive/IRA Morgan Street. The Phase 4 APE is bordered by West Walter Strawn Drive to the north and by Illinois Route 53 to the west. Figure 1 depicts the APE for the Undertaking.

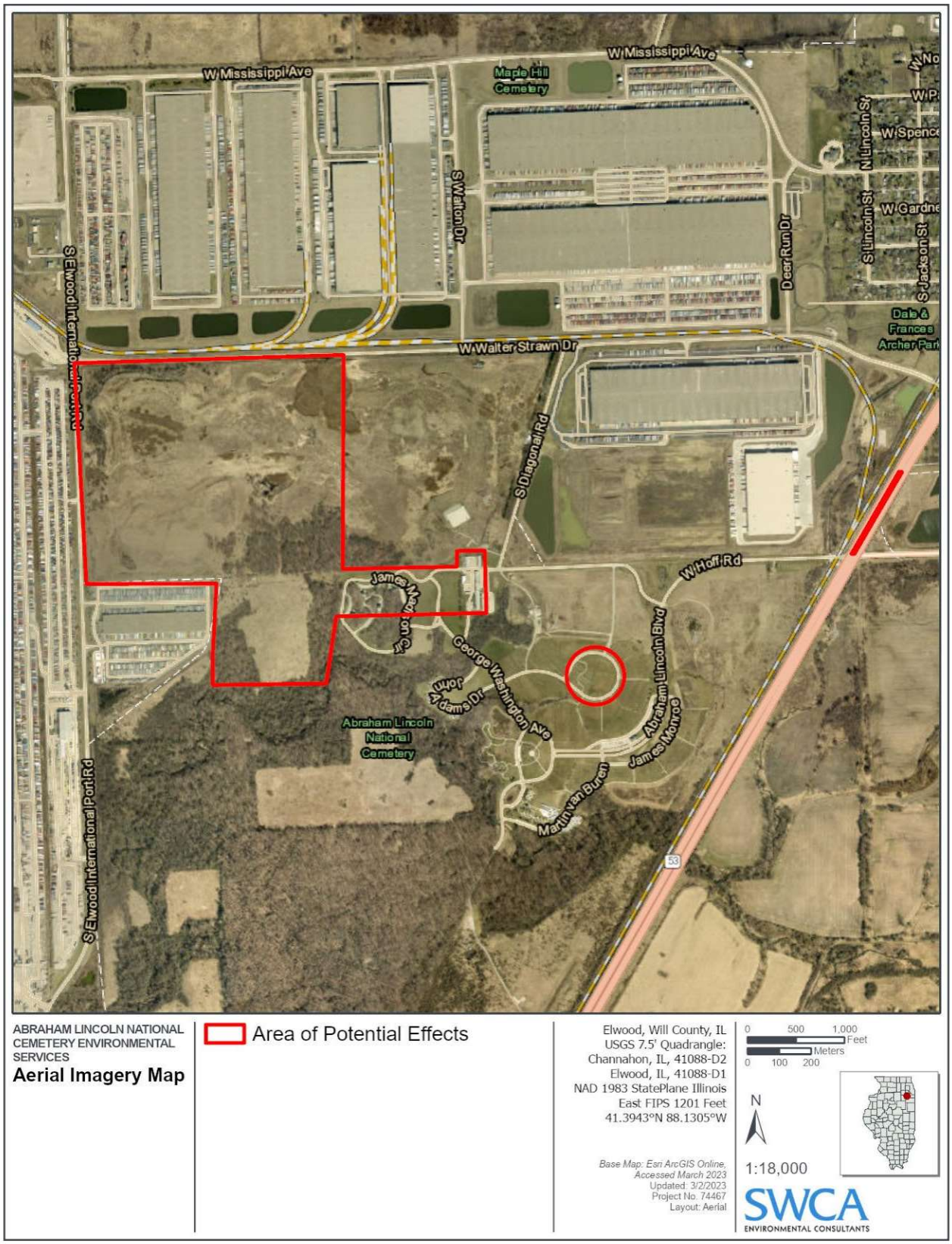


**Figure 1. Area of Potential Effects**

**Identification of Historic Properties**

The VA contracted SWCA Environmental Consultants (SWCA) to conduct background research within the APE for the Undertaking. To conduct the background research, a SWCA archaeologist reviewed the Illinois Inventory of Archaeological Sites (IIAS) viewer maintained by the Illinois State Museum (ISM) and the Illinois Department of Natural Resources (IDNR); archaeological investigative reports on file at the Illinois State Archaeological Survey; the Historic and Architectural Resource Geographic Information System (HARGIS), and the National Register of Historic Places (NRHP).

*Archaeological Resources*

SWCA reviewed sources for information on previously conducted cultural resources surveys and previously recorded archaeological sites. Research indicates that 11 cultural resources surveys have been conducted within the APE between 1988 and 2018 (Attachment A: Previous Cultural Resources Surveys within the APE). From these surveys, 19 sites were recorded within the APE (Figure 2). Of these sites, 14 are Precontact in age, and five are multicomponent, containing both Precontact and post-contact cultural materials. Details on each site and their NRHP eligibility are included in Attachment B: Archaeological Sites within the APE.

*Historical Architectural Resources and Cemeteries*

A review of HARGIS did not indicate that any previously recorded architectural resources listed or eligible for listing on the NRHP are within the APE. However, a review of the IIAS database identified one National Cemetery within the APE, which is Abraham Lincoln National Cemetery Due to the NRHP Eligibility of National Cemeteries – A Clarification of Policy (9/8/2022) issued by the National Park Service (NPS) in 2011, all national cemeteries are considered exceptionally significant because of their Congressional designation as nationally significant places of burial and commemoration. This means they meet the special requirements set forth in the NRHP Criterion Considerations for cemeteries, graves, commemorative properties, and resources less than 50 years of age. It also means that facilities and sections developed within the past 50 years are considered significant and are eligible for NRHP listing as contributing resources. Consequently, all National Cemetery buildings, structures, and objects are designated as historic, despite being constructed in 2000.

Additionally, although Abraham Lincoln National Cemetery does not currently meet the 50-year threshold for a historic property to achieve significance under the NHPA, national cemeteries are evaluated under Criterion G as possessing inherently exceptional significance due to their association with notable events in American history. As such, Abraham Lincoln National Cemetery is eligible for the NRHP, inclusive of tracts of land recently acquired but not yet developed for cemetery purposes.

*Traditional Cultural Properties*

Any places of importance to the continuance of cultural traditions among indigenous communities with ancestral claims within the APE remain unevaluated for NRHP eligibility as TCPs may require additional evaluation of adverse effect if identified during consultation between VA and interested tribal governments To this end, VA will contact the Tribal Historic Preservation Officer and Chairperson of tribal nations with ancestral ties to Will County (Attachment C: Tribal Affiliates and Potential Consulting Parties).

*Land Use History*

To understand the historic land use of the APE and predict possible post-contact period site locations, SWCA reviewed historic maps, aerial imagery, and various other sources discussing the land use history for the APE from the late nineteenth century to the modern day.

SWCA reviewed historic plat maps of Will County from 1873, 1893, 1902, 1909, 1940, 1948, 1953, and 1957 available through the IIAS database, as well as a historic orthophoto from 1939 to evaluate the historic land use of

the APE. From 1873 to 1939, the land surrounding the APE was sparsely populated, with only a few residences recorded on historic maps. The APE was used for agriculture until 1940, when the federal government purchased over 36,000 acres (14,569 ha) of land, which included the APE and surrounding land, for construction of the Kankakee Ordnance Plant and the Elwood Ordnance/Joliet Army Ammunition Plant in response to the country's entry into World War II. Production at both facilities continued until 1978, and the main buildings and associated infrastructure were decommissioned in 1993. Following the decommission, the U.S. Army Corps of Engineers, the U.S. Environmental Protection Agency, and the Illinois Environmental Protection Agency initiated the process of bioremediation for land impacted by the ordnance plants. Approximately 15,080 acres (6,103 ha) were granted to the U.S. Forest Service for development of the Midewin Tallgrass Prairie in the early 1990s, followed by the dedication of land for construction of the Abraham Lincoln National Cemetery in 1999 by VA NCA.

**Determination and Findings of Effect**

Given the level of disturbance that has occurred within the APE from construction of the ordnance plants in the 1940s and from remediation and conservation efforts in the 1990s, SWCA concluded that there was a low to moderate chance of identifying intact buried cultural resources during the proposed undertaking and there are no archaeological sites that are historic properties within the APE. SWCA archaeologists monitored the mechanical excavation of 35 geotechnical bores and placed six shovel tests within the previously recorded locations of archaeological sites 11WI1304, 11WI1307, 11WI1308, 11WI1309, and 11WI1310. All soils observed during excavation showed evidence of significant disturbances within the APE. Shovel tests displayed truncated soil profiles, heavily disturbed soils, or fill. No cultural materials were observed in the shovel tests. For this reason, it was determined that the Undertaking will have no adverse effect on historic properties as the previously recorded archaeological sites were not identifiable in the field.

Based on these results, VA finds that there is only one historic property present within the APE, the Abraham Lincoln National Cemetery, and it will not be adversely affected by the Undertaking. Therefore, in accordance with 36 CFR 800.5(b), VA finds the Undertaking will result in no adverse effect to historic properties.

VA is also contacting federally recognized Native American Tribes and other interested parties, as listed in Attachment C: Tribal Affiliates and Potential Consulting Parties, to determine if any organizations have additional information about potential historic properties that may be affected by the undertaking.

We look forward to your input. VA requests a response to this letter within 30 days of receipt. Please address correspondence to Angela McArdle, VA Senior Historic Preservation Specialist, at angela.mcardle@va.gov with the subject line "Abraham Lincoln National Cemetery Section 106." Thank you for your assistance with this undertaking.

Sincerely,

WILLIAM E. HOOKER 911259

Digitally signed by WILLIAM E. HOOKER 911259
Date: 2023.09.01 14:08:46 -04'00'

W. Edward Hooker, III (Ed)
Historic Architect and Cultural Resources Manager
Department of Veterans Affairs
National Cemetery Administration

CC: Héctor M. Abreu Cintrón, VA Deputy Federal Preservation Officer

# Attachment A: Previous Cultural Resources Surveys within the APE

| Survey ID | Year | Institute | Report Title | Author(s) |
|---|---|---|---|---|
| 2596 | 1988 | Midwest Archaeological Research Services, Inc. | An Archaeological Survey of a Proposed RDX Facility Site at the Joliet Army Ammunition Plant, Will County, Illinois | Jeske et al. |
| 2596 | 1989 | Midwest Archaeological Research Services, Inc. | Phase II Archaeological Testing of Sixteen Sites on the Joliet Army Ammunition Plant for the RDX Expansion Project | Lurie et al. |
| 2596 | 1990 | Midwest Archaeological Research Services, Inc. | Results of the 1990 Phase II Archaeological Testing Season on the Joliet Army Ammunition Plant for the RDX Expansion Project | Lurie et al. |
| 99999 | 1996 | Midwest Archaeological Research Services, Inc. | Phase I Archaeological Survey of the 240 Acres Part of the Proposed Illinois National Cemetery at the Joliet Army Ammunition Plant, Will County, Illinois | Atchison and Lurie |
| 11231 | 2000 | Midwest Archaeological Research Services, Inc. | Phase I Archaeological Survey of the Proposed Deer Run Industrial Park/CenterPointe Properties Development in Jackson Township, Will County, Illinois | Bird et al. |
| 11825 | 2001 | Illinois Transportation Archaeological Program | East Access Road Baseline Road to IL 53 | Studenmund 2001 |
| 21202 | 2014 | Illinois State Archaeological Survey | Railroad: Union Pacific RR HSR Joliet to Dwight | Smith and Adams |
| 21020 | 2015 | Illinois State Archaeological Survey | Hoff Road HSR Grade Crossing (Addendum C to ISAS Log No. 15058 and Log No. 15149) | Smith |
| ISAS2998 | 2017 | Illinois State Archaeological Survey | FAP 846A/IL 53/Chicago Street Safety and Operations Improvements | Lawrence et al. |
| 22902 | 2018 | Illinois State Archaeological Survey | UPRR-Joliet to Dwight High Speed Rail (HSR) Track Improvements from Elwood to Braidwood | Skadden and Adams |
| 22985 | 2018 | Civil & Environmental Consultants, Inc. | Disturbance Assessment for the Phase 3 Gravesite Expansion and Cemetery Improvements Project at Abraham Lincoln National Cemetery in Jackson Township, Will County, Illinois | Bays |

Sources: Atchison and Lurie (1996); Bays (2018); Bird et al. (2001); ISM and IDNR (2022); Jeske et al. (1988); Lawrence et al. (2017); Lurie et al. (1989); Lurie et al. (1990); Smith (2015); Smith and Adams (2014); Studenmund (2001)

# Attachment B: Archaeological Sites within the APE

| Site Number | Temporal Affiliation | Site Type | NRHP Status as Established through SHPO Consultation | Notes |
|---|---|---|---|---|
| 11WI294 | Multicomponent | Post-contact School, Unknown Precontact | Determined Not Eligible; Destroyed | Maintenance/Administrative Building located at site location. |
| 11WI295 | Multicomponent | Unknown | Determined Not Eligible | NRHP recommendation based on the results of Phase II Testing conducted by Lurie et al. 1990. SHPO recommended no further work. |
| 11WI296 | Precontact | Unknown | Determined Not Eligible | NRHP recommendation based on the results of Phase II Testing conducted by Lurie et al. 1990. SHPO recommended no further work |
| 11WI350 | Precontact | Habitation | Determined Not Eligible | NRHP recommendation based on the results of Phase II Testing conducted by Lurie et al. 1990. SHPO recommended no further work. |
| 11WI1297 | Precontact | Habitation | Unevaluated; Destroyed | Could not be relocated by Bays (2018) |
| 11WI1298 | Multicomponent | Habitation | Unevaluated; Destroyed | Could not be relocated by Bays (2018) |
| 11WI1299 | Multicomponent | Habitation | Unevaluated; Destroyed | Could not be relocated by Bays (2018). |
| 11WI1303 | Multicomponent | Habitation | Unevaluated; Destroyed | Could not be relocated by Bays (2018). |
| 11WI1304 | Precontact | Habitation | Determined Potentially Eligible | SHPO recommended additional investigations. |
| 11WI1305 | Precontact | Habitation | Determined Not Eligible | SHPO recommended no further work. |
| 11WI1306 | Precontact | Habitation | Determined Not Eligible | SHPO recommended no further work. |
| 11WI1307 | Precontact | Habitation | Determined Potentially Eligible | SHPO recommended additional investigations. |
| 11WI1308 | Precontact | Habitation | Determined Potentially Eligible | SHPO recommended additional investigations. |
| 11WI1309 | Precontact | Habitation | Determined Potentially Eligible | SHPO recommended additional investigations. |
| 11WI1310 | Precontact | Habitation | Determined Potentially Eligible | SHPO recommended additional investigations. |
| 11WI1311 | Precontact | Habitation | Determined Not Eligible | SHPO recommended no further work. |
| 11WI1312 | Precontact | Habitation | Determined Not Eligible | SHPO recommended no further work. |
| 11WI2416 | Precontact | Habitation | Determined Not Eligible | SHPO recommended no further work. |
| 11WI2417 | Precontact | Habitation | Determined Not Eligible | SHPO recommended no further work. |

# Attachment C: Tribal Affiliates and Potential Consulting Parties

| Organization | Contact | Title | Phone Number | Email Address | Mailing Address |
|---|---|---|---|---|---|
| Forest County Potawatomi Community of Wisconsin | Benjamin Rhodd | Tribal Historic Preservation Officer | (715) 478-7225 | Benjamin.Rhodd@fcp-nsn.gov | P.O. Box 340, Crandon, WI 54520 |
| Forest County Potawatomi Community of Wisconsin | Ned Daniels, Jr. | Chairman | (715) 478-5280 | Ned.DanielsJr.@fcpotawatomi-nsn.org | P.O. Box 340, Crandon, WI 54520 |
| Citizen Potawatomi Nation, Oklahoma | Kelli Mosteller | Tribal Historic Preservation Officer | (405) 878-5830 | cpnthpo@potawatomi.org | 1601 South Gordon Cooper Drive, Shawnee, OK 74801 |
| Citizen Potawatomi Nation, Oklahoma | John Barrett | Chairman | (405) 275-0198 | jbarrett@potawatomi.org | 1601 South Gordon Cooper Drive, Shawnee, OK 74801 |
| Prairie Band Potawatomi Nation | Raphael Wahwassuck | Tribal Historic Preservation Officer | (785) 966-4048 | raphaelwahwassuck@pbpnation.org | 16281 Q Road, Mayetta, KS 66509 |
| Prairie Band Potawatomi Nation | Joseph Rupnick | Chairperson | (785) 966-4007 | josephrupnick@pbpnation.org | 16281 Q Road, Mayetta, KS 66509 |
| Miami Tribe of Oklahoma | Douglas Lankford | Chief | (918) 542-1445 | dlankford@miamination.com | P.O. Box 1326, Miami, OK 74355 |
| Miami Tribe of Oklahoma | Diane Hunter | Tribal Historic Preservation Officer | (260) 639-0600 | dhunter@miamination.com | P.O. Box 1326, Miami, OK 74355 |
| Menominee Indian Tribe of Wisconsin | David Grignon | Tribal Historic Preservation Officer | (715) 799-5258 | mitwadmin@mitw.org | P.O. Box 910, Keshena, WI 54135 |
| Menominee Indian Tribe of Wisconsin | Ron Corn, Sr. | Chairman | (715) 799-5100 | chairman@mitw.org | P.O. Box 910, Keshena, WI 54135 |
| Peoria Tribe of Indians of Oklahoma | Craig Harper | Chief | (918) 540-2535 | chiefharper@peoriatribe.com | P.O. Box 1527 Miami, OK 74355 |
| Kickapoo Tribe of Oklahoma | Kent Collier | Native American Graves Protection and Repatriation Act (NAGPRA) Officer | (405) 964-4227 | None listed | P.O. Box 70. McLoud, OK 74851 |
| Kickapoo Tribe of Oklahoma | Darwin Kaskaske | Chairman | (405) 964-7053 | darwin.kaskaske@okkt.net | P.O. Box 70. McLoud, OK 74851 |
| Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas | Lester Randall | Chairman | (785) 486-2131 | Lester.Randall@ktik-nsn.gov | 824 111th Drive, Horton, KS 66439 |
| Hannahville Indian Community Band of Potawatomi, Michigan | Kenneth Meshigaud | Chairperson | (906) 466-2932 | tyderyien@hannahville.org | N14911 Hannahville B1 Road, Wilson, MI 49896 |
| Little Traverse Bay Bands of Odawa Indians | Melissa Wiatrolik | Tribal Historic Preservation Officer | (231) 242-1408 | MWiatrolik@ltbbodawa-nsn.gov | 7500 Odawa Circle, Harbor Springs, MI 49740 |

| Organization | Contact | Title | Phone Number | Email Address | Mailing Address |
|---|---|---|---|---|---|
| Little Traverse Bay Bands of Odawa Indians | Regina Gasco-Bentley | Chairperson | (231) 242-1418 | tribalchair@ltbbodawa-nsn.gov | 7500 Odawa Circle, Harbor Springs, MI 49740 |
| Village of Elwood | Doug Jenco | Village President | (815) 423-5011 | Doug.jenco@villageofelwood.com | 401 E. Mississippi Ave, Elwood, IL 60421 |
| Will County Historical Museum and Research Center | Sandy Vasko | Executive Director and President | (815) 838-5080 | Contact form is available on the museum homepage: https://willhistory.org/ | 803 S. State Street, Lockport, IL 60441 |
| Will County Historic Preservation Commission | Colette Stafford | Chairwoman | (815) 774-7896 | HPC@willcountyillinois.com | 58 E. Clinton Street, Suite 100, Joliet, IL 60432 |
| Midewin National Tallgrass Prairie | Christina Henderson | Prairie Supervisor | (815) 423-6370 | Contact form is available on the park's webpage: https://www.fs.usda.gov/contactus/midewin/about-forest/contactus | 30239 S. State Route 53, Wilmington, IL 60481 |
| Joliet Area Historical Museum | Gregory Peerbolte | Executive Director | (815) 723-5201 ext. 7210 | Contact form specifically for Gregory Peerbolte is available on the museum staff webpage: https://www.jolietmuseum.org/user/14/contact | 204 Ottawa Street, Joliet, IL 60432 |
| American Legion Post #0191 | Ken Watt | Commander | (815) 458-7740 | None listed | 1059 Widows Rd, Wilmington, IL 60481-9387 |
| American Legion Post #0005 | John Morgan | Commander | (815) 725-4333 | hp5americanlegion@gmail.com | P.O. Box 3879, Joliet, IL 60434-3879 |
| American Legion Post #0241 | James Shaw | Commander | (815) 353-0522 | djkindjas@comcast.net | P.O. Box 2785, Joliet, IL 60434-2785 |
| American Legion Post #1080 | Thomas Horn | Commander | (815) 729-2254 | alegionpost1080@aol.com | 2625 Ingalls Ave, Joliet, IL 60435-3097 |
| Beecher AMVETS Post #67 | Unknown | Unknown | (708) 946-2440 | beecheramvets@aol.com | 532 Gould St, Beecher, IL 60401 |
| Cantigny VFW #367 | Unknown | Unknown | (815) 722-5398 | Contact form is available on the VFW office's webpage: https://vfw367.org/contact-us/ | 826 Horseshoe Drive, Joliet, IL 60435 |
| Stone City VFW #2199 | Unknown | Unknown | (815) 722-7122 | vfw2199postprograms@gmail.com | 124 Stone City Drive, Joliet, IL 60436 |

Illinois SHPO Response Letter

**Additional Gravesites & Cemetery Improvements, New Construction, Building Upgrades, Abraham Lincoln National Cemetery Phase 4**
**20953 W. Hoff Road, Area Bordered by Walter Strawn Dr. and IL Route 53, Elwood,**
**Ineligible Sites: 11WI295, 296, 350, 1304, 1307, 1308, 1309, 1310,**
**Abraham Lincoln National Cemetery, automatically eligible for NRHP, Elwood,**

**USDVA,**
**SHPO Log #011090523**

**October 12, 2023**

**Anastasia Gilmer**
**SWCA Environmental Consultants**
**200 W. 22nd St., Suite 220**
**Lombard, IL 60148**

**Dear Ms. Gilmer:**

**Thank you for your submission of Phase 4 Gravesite Development and Improvement Project for the Abraham Lincoln National Cemetery for, which we received on 9/5/23, and for the additional information we received on 10/12/23 (SHPO log # 011090523). Our comments are required by Section 106 of the National Historic Preservation Act of 1966, as amended, 54 U.S.C. § 306108, and its implementing regulations (36 CFR Part 800) (Act).**

**This office concurs that no historic archaeological properties are known to exist within the Area of Potential Effect. However, if any archaeological materials are encountered during construction, this office must be notified. This letter is not a clearance for purposes of the Illinois Human Remains Protection Act (20 ILCS 3440).**

**The Abraham Lincoln National Cemetery is a historic district eligible for the NRHP, inclusive of tracts of land recently acquired but not yet developed for cemetery purposes. Despite the Abraham Lincoln National Cemetery having been established in 2000, according to the National Park Service's (NPS) "National Register Eligibility of National Cemeteries – A Clarification of Policy (9/8/2011) ," "all national cemeteries are considered exceptionally significant as a result of their Congressional designation as nationally significant places of burial and commemoration. This means they meet the special requirements set forth in the National Register Criterion Considerations for cemeteries, graves, commemorative properties, and resources less-than-50 years of age."**

**Thee following elements involved in the undertaking are contributing resources within the historic district.**

- **Columbarium #1 (C1 in FCA Database)**
- **Columbarium #2 (C2 in FCA Database)**
- **Columbarium #3 (C3 in FCA Database)**

- **Columbarium #4 (C4 in FCA Database)**
- **Storage Outbuilding 3003 (Building S2 in FCA Database)**
- **Curb & Gutter, Roads, and Irrigation Systems**

**Because this undertaking proposes to appropriately repair these existing facilities, this project meets the Secretary of the Interior's Standards for Rehabilitation (Standards) and will not adversely affect any historic resources.**

**This office concurs that the proposed work to the unimproved areas is not an adverse effect because, according to the 2011 NPS clarification, "Unimproved acreage within the cemetery boundaries that is being held for future use is considered noncontributing."**

**If the project's scope of work changes from that which has been submitted to and approved by this office, you must email those changes to SHPO.Review@Illinois.gov and to Anthony Rubano (Anthony.Rubano@Illinois.gov) for review and comment. Failure to submit project changes for review and comment may result in an adverse effect determination. If the project's approved scope of work remains the same, no further consultation is required under the Act for this undertaking.**

**Sincerely,**

Carey L. Mayer

**Carey L. Mayer, AIA**
**Deputy State Historic Preservation Officer**

**c: W. Edward Hooker, U.S. Department of Veterans Affairs**
**Angela McArdle, U.S. Department of Veterans Affairs**

Will County Historic Preservation Commission Response Letter

**WILL COUNTY LAND USE DEPARTMENT**
58 E. Clinton Street, Suite 100 • Joliet, Illinois 60432
815/774-3321 • Fax: 815/727-8638

September 28, 2023

W. EDWARD HOOKER, III (ED)
HISTORIC ARCHITECT AND
CULTURAL RESOURCES MANAGER
DEPARTMENT OF VETERANS AFFAIRS
NATIONAL CEMETERY ADMINISTRATION

Re: Section 106 Consulting Party – Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project – Will County, Illinois

Dear Mr. Hooker,

Thank you for providing the Will County Land Use Department, Historic Preservation Commission with the opportunity to become a consulting party for the Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project in the Village of Elwood, IL. The Commission accepts the invitation and would like to contribute the following comment:

- The Will County Historic Preservation Commission completed a survey of historic resources within Jackson Township in 2009. That is the most recent survey in the County's records for Jackson Township. It appears that Reed's Grove Cemetery is located on PIN 10-11-31-300-002-0000 (in the northwest quarter of the southwest quarter of section 31) which is not impacted by the proposed APEs.
- The Will County Historic Preservation Commission completed a survey of historic resources within Channahon Township also in 2009. That is the most recent survey in the County's records. The Channahon Township Rural Survey identified four sites that were demolished in 1940 when the Joliet Arsenal was developed in section 36 which is within the Abraham Lincoln National Cemetery Phase 4 APE. The Commission defers to the Illinois State Historic Preservation Office for their final assessment of resources within the APE.

The Will County Land Use Department, Historic Preservation Commission appreciates the opportunity to comment on this project. Please do not hesitate to contact me with any questions.

Sincerely,

Marguerite Kenny

Marguerite Kenny, AICP
*Development Analyst II*
*Staff Liaison to the Will County Historic Preservation Commission*

Forest County Potawatomi Tribe Historic Preservation Officer Response

## Jesse Byrd

**From:** Benjamin Rhodd <Benjamin.Rhodd@fcp-nsn.gov>
**Sent:** Tuesday, September 12, 2023 5:36 PM
**To:** Jesse Byrd
**Subject:** RE: NHPA Section 106 Consultation for the Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project – Will County, Illinois

Mr. Byrd,

Pursuant to consultation under Section 106 of the National Historic Preservation Act (1966 as amended) the Forest County Potawatomi Community (FCPC), a Federally Recognized Native American Tribe, reserves the right to comment on Federal undertakings, as defined under the act.

The Tribal Historic Preservation Office (THPO) staff has reviewed the information you provided for this project. Upon review of site data and supplemental cultural history within our Office, the FCPC THPO is pleased to offer a finding of No Historic Properties affected of significance to the FCPC, however, we request to remain as a consulting party for this project.

As a standard caveat sent with each proposed project reviewed by the FCPC THPO, the following applies. In the event an Inadvertent Discovery (ID) occurs at any phase of a project or undertaking as defined, and human remains or archaeologically significant materials are exposed as a result of project activities, work should cease immediately. The Tribe(s) must be included with the SHPO in any consultation regarding treatment and disposition of an ID find.

Thank you for protecting cultural and historic properties and if you have any questions or concerns, please contact me at the email or number listed below.

Respectfully,

Ben Rhodd, MS, RPA, Tribal Historic Preservation Officer
Forest County Potawatomi
Historic Preservation Office
8130 Mish ko Swen Drive, P.O. Box 340, Crandon, Wisconsin 54520
P: 715-478-7354 C: 715-889-0202 Main: 715-478-7474
Email: Benjamin.Rhodd@fcp-nsn.gov
www.fcpotawatomi.com

---

**From:** Jesse Byrd <jbyrd@lrsfederal.com>
**Sent:** Friday, September 1, 2023 3:20 PM
**To:** Benjamin Rhodd <Benjamin.Rhodd@fcp-nsn.gov>
**Cc:** Jesse Byrd <jbyrd@lrsfederal.com>; Celester.Shuppler@fcp-nsn.gov
**Subject:** NHPA Section 106 Consultation for the Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project – Will County, Illinois

Dear Mr. Rhodd and Chairman,

On behalf of the U.S. Department of Veterans Affairs (VA), please find attached the Section 106 consultation letter for the referenced project. Please confirm receipt of this email or let us know if you wish to receive the submittal via alternate means. We look forward to receiving your response.

If you have questions or desire additional information, please address correspondence to Angela McArdle, VA Senior Historic Preservation Specialist, at angela.mcardle@va.gov with the subject line "Abraham Lincoln National Cemetery Section 106." Thank you for your assistance with this undertaking.

Best regards,

**JESSE BYRD, CPESC, QSP/QSD**
ENVIRONMENTAL PROGRAM MANAGER | LRS FEDERAL

565 Benfield Blvd | Suite 400
Severna Park, MD 21146
C. (443) 340-7954

**WWW.LRSFEDERAL.COM**
*A Service Disabled Veteran Owned Company*

Miami Tribe of Oklahoma Environmental Program Office Response

Miami Tribe of Oklahoma
3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com

Via email: jbyrd@lrsfederal.com

November 27, 2023

Jesse Byrd
Environmental Program
Manager
565 Benfield Blvd | Suite 400
Severna Park, MD 21146

Re: Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project – Will County, Illinois – Comments of the Miami Tribe of Oklahoma

Dear Ms. Byrd:

Aya, kweehsitoolaanki – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding the Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project.

The Miami Tribe is concerned with this project's proximity to several multi-component archaeological sites. Will there be any Archaeological survey done? What protections are in place for Archaeological sites in this area? We are very concerned with the very real possibility of burials in this area. Given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Illinois, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case, please contact me at 918-541-7885 or by email at THPO@miamination.com to initiate consultation.

The Miami Tribe accepts the invitation to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer I am the point of contact for all Section 106 consultation.

Respectfully,

*Logan York*

Logan York
Tribal Historic Preservation Officer

VA Response to Miami Tribe

**U.S. DEPARTMENT OF VETERANS AFFAIRS**
**Office of Construction & Facilities Management**
**Washington DC 20420**

Date: November 29, 2023

Logan York
Tribal Historic Preservation Officer
P.O. Box 1326
Miami, OK 74355

*Sent via email*

**SUBJECT: Response to Miami Tribe of Oklahoma NHPA Section 106 Consultation Comments for the Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project – Will County, Illinois**

Dear Mr. York,

Thank you for your interest and participation in the National Historic Preservation Act (NHPA) Section 106 consultation for the Abraham Lincoln National Cemetery Phase 4 Gravesite Development and Improvement Project. Your insights as a valued stakeholder are much appreciated and your concerns centered around the proximity of the proposed project to multi-component archaeological sites and the potential for burials in the area are understood by the U.S. Department of Veterans Affairs (VA). This response letter provides additional information to address the questions you asked, included below.

1. Will there be any Archeological survey done?
2. What protections are in place for Archeological sites in this area?

As stated in the Draft Environmental Assessment (EA) for the project, the VA has determined the area of potential effects (APE) to encompass approximately 197 acres of land, including 23.75 acres of existing National Cemetery. Archaeological surveys have been conducted in the area, and 19 previously recorded archaeological sites are located within the APE; however, only five were determined by the Illinois State Historic Preservation Office (SHPO) to be potentially eligible for the National Register of Historic Places (NRHP). Four sites were destroyed before they could be evaluated, and the remaining sites were either determined or recommended to be not eligible for the NRHP.

To fully evaluate archaeological sites that were determined by the Illinois SHPO to be potentially eligible for the NRHP, a geoarchaeological assessment was conducted within the APE between October 26 and November 2, 2022. The geoarchaeological assessment included monitoring of the mechanical excavation of 35 geotechnical bores along with placing six shovel tests within previously recorded locations of the five archeological sites. All soils observed showed evidence of significant disturbances and non-native material, and no cultural materials were observed in the shovel tests. VA determined that the undertaking would have no adverse effect on historic properties as the previously recorded archeological sites were not identifiable in the field. The Illinois SHPO concurred with VA on October 12, 2023, that no historic archaeological properties are known to exist within the APE (**Attachment 1**). The Geotechnical Boring Monitoring and Geoarchaeological Assessment (August 2023) is available upon request.

No ground disturbance or impacts outside of the APE for the proposed undertaking will occur. Although the VA does not anticipate the undertaking would have adverse effects on historic properties or archaeological sites, should human remains or other cultural items be encountered during construction or operation of the

National Cemetery, work would be halted in the area and the appropriate authorities and Tribes would be immediately contacted. Additionally, if the project's scope of work changes from that which has been submitted to and approved by the Illinois SHPO, the changes will be emailed to SHPO and tribal affiliates for review and comment.

Thank you again for your interest and participation in the NHPA Section 106 consultation process for this project.

Respectfully submitted,

W. Edward Hooker, III (Ed)
Historic Architect and Cultural Resources Manager
Department of Veterans Affairs
National Cemetery Administration

CC: Héctor M. Abreu Cintrón, VA Federal Historic Preservation Officer

**Attachment 1**: Illinois SHPO Concurrence Letter

## B.3 Draft Environmental Assessment Notice of Availability and Correspondence

Draft EA Notice of Availability

# U.S. DEPARTMENT OF VETERANS AFFAIRS
# OFFICE OF CONSTRUCTION AND FACILITIES MANAGEMENT

## NOTICE OF AVAILABILITY FOR PUBLIC COMMENT UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT FOR THE PROPOSED MAJOR EXPANSION AT THE ABRAHAM LINCOLN NATIONAL CEMETERY IN ELWOOD, ILLINOIS

The U.S. Department of Veterans Affairs (VA) is preparing a Draft Environmental Assessment (EA) to analyze the potential environmental impacts associated with the Proposed Action to implement a phased expansion of the Abraham Lincoln National Cemetery (National Cemetery) located at 20953 West Hoff Road in Elwood, Will County, Illinois. VA's proposed Phase 4 Gravesite Development and Improvement Project (Proposed Action) encompasses approximately 197 acres, including previously developed portions of the National Cemetery.

The purpose of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois. The Proposed Action is needed to meet the National Cemetery Administration's (NCA's) goal of providing eligible veterans and their family members with reasonable access to VA interment options.

This Notice of Availability (NOA) is available on the VA website at https://www.cfm.va.gov/environmental. The public can review the Draft EA on the VA website or at:

**Joliet Public Library**
150 North Ottawa Street
Joliet, Illinois 60432

VA prepared the Draft EA according to the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code 4321-4370h), the Council on Environmental Quality Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and VA Implementing Regulations (38 CFR Part 26). VA recognizes that you, as an identified stakeholder, may have comments on the content of the Draft EA. Please submit your comments/information via email within 30 days to vacoenvironment@va.gov with the subject line, "Abraham Lincoln National Cemetery Draft EA."

VA initiated Section 106 consultation with stakeholders, including the Illinois State Historic Preservation Office (SHPO) and tribal affiliates, in September 2023. The Illinois SHPO concurred with VA that no historic archaeological properties are known to exist within the Area of Potential Effect. For additional information or questions, please contact Mr. Fernando Fernandez at Fernando.Fernandez@va.gov with the subject line, "Abraham Lincoln National Cemetery Draft EA."

Proof of Publishing for Draft EA

Certificate of the Publisher

The Herald-News

Description:EXPANSION CEMETERY ELWOOD
2123987

HERALD-NEWS PREPAID LEGALS
MUST PRE-PAY
JOLIET IL 60436-0000

Shaw Media certifies that it is the publisher of The Herald-News.
The Herald-News is a secular newspaper, has been continuously published daily for more than fifty (50) weeks prior to the first publication of the attached notice, is published in the City of Joliet, County of Will, State of Illinois, is of general circulation throughout that county and surrounding area, and is a newspaper as defined by 715 ILCS 5/5.

A notice, a true copy of which is attached, was published 2 time(s) in The Herald-News, namely one time per week for two successive week(s). Publication of the notice was made in the newspaper, dated and published on
11/17/2023 11/18/2023

This notice was also placed on a statewide public notice website as required by 5 ILCS 5/2.1.
In witness, Shaw Media has signed this certificate by J. Tom Shaw, its Publisher, at Joliet, Illinois, on
18th day of November, A.D. 2023

Shaw Media By:

J. Tom Shaw, Publisher

Account Number 10086146

Amount $387.86

**PUBLIC NOTICE**
**U.S. DEPARTMENT OF VETERANS AFFAIRS OFFICE OF CONSTRUCTION AND FACILITIES MANAGEMENT NOTICE OF AVAILABILITY FOR PUBLIC COMMENT UNDER THE NATIONAL ENVIRONMENTAL POLICY ACT FOR THE PROPOSED MAJOR EXPANSION AT THE ABRAHAM LINCOLN NATIONAL CEMETERY IN ELWOOD, ILLINOIS**

The U.S. Department of Veterans Affairs (VA) is preparing a Draft Environmental Assessment (EA) to analyze the potential environmental impacts associated with the Proposed Action to implement a phased expansion of the Abraham Lincoln National Cemetery (National Cemetery) located at 20953 West Hoff Road in Elwood, Will County, Illinois. VA's proposed Phase 4 Gravesite Development and Improvement Project (Proposed Action) encompasses approximately 197 acres, including previously developed portions of the National Cemetery.

The purpose of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois. The Proposed Action is needed to meet the National Cemetery Administration's (NCA's) goal of providing eligible veterans and their family members with reasonable access to VA interment options.

This Notice of Availability (NOA) is available on the VA website at https://www.cfm.va.gov/environmental. The public can review the Draft EA on the VA website or at:

**Joliet Public Library**
150 North Ottawa Street
Joliet, Illinois 60432

VA prepared the Draft EA according to the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code 4321-4370h), the Council on Environmental Quality Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and VA Implementing Regulations (38 CFR Part 26). VA recognizes that you, as an identified stakeholder, may have comments on the content of the Draft EA. Please submit your comments/information via email within 30 days to vacoenvironment@va.gov with the subject line, "Abraham Lincoln National Cemetery Draft EA."

VA initiated Section 106 consultation with stakeholders, including the Illinois State Historic Preservation Office (SHPO) and tribal affiliates, in September 2023. The Illinois SHPO concurred with VA that no historic archaeological properties are known to exist within the Area of Potential Effect. For additional information or questions, please contact Mr. Fernando Fernandez at Fernando.Fernandez@va.gov with the subject line, "Abraham Lincoln National Cemetery Draft EA."

(Published in Herald-News on November 17, 18, 2023) 2123987

USACE Correspondence

## Jesse Byrd

**From:** Hall, Soren G CIV USARMY CELRC (USA) <Soren.G.Hall@usace.army.mil>
**Sent:** Monday, December 11, 2023 1:09 PM
**To:** Fernandez, Fernando L. (CFM)
**Cc:** Jesse Byrd
**Subject:** RE: Abraham Lincoln National Cemetery Phase 4 Expansion - Notice of Availability Draft Environmental Assessment LRC-2018-707

Thank you, I agree with your responses to my comments.

Thanks,
Soren

Soren G. Hall
Regulatory Branch – Chicago
Mobile: (312) 730-8839

---

**From:** Fernandez, Fernando L. (CFM) <Fernando.Fernandez@va.gov>
**Sent:** Monday, December 11, 2023 11:54 AM
**To:** Hall, Soren G CIV USARMY CELRC (USA) <Soren.G.Hall@usace.army.mil>
**Cc:** Jesse Byrd <jbyrd@lrsfederal.com>; Fernandez, Fernando L. (CFM) <Fernando.Fernandez@va.gov>
**Subject:** [Non-DoD Source] RE: Abraham Lincoln National Cemetery Phase 4 Expansion - Notice of Availability Draft Environmental Assessment LRC-2018-707

Mr. Hall,

Please find below Veterans Affairs (VA) response to your expert review and comments. The Final EA will clearly address your suggested edits and comments on the Draft EA as summarized below:

- VA concurs that the USACE letter of objection, as referenced in the Draft EA, was based upon the Phase III Study Area and does not necessarily apply to the larger Phase IV study area located to the immediate east.

- In response to USACE comments, VA will remove the following text from the Final EA: "*A pre-application meeting was initiated with the USACE to confirm the permitting requirements, and it was determined that a letter of no objection (e.g., an approved jurisdictional determination) was needed. VA requested the letter and the USACE confirmed the project area consisted entirely of dry land and that the project was not subject to its jurisdiction (Anderson Engineering of Minnesota, LLC, 2019). See Appendix B for the letter*."

- Figure 3-5 will be revised to reflect the 2018 water resource GIS data that was confirmed by USACE. Further, Figure 3-6 will be added to Section 3.10.2 that overlays VA's proposed development activity under Phase IV with the December 2018 delineation boundaries (Anderson Engineering, 2018).

- The title of Figure 3-5 will be revised to "Water Resources" instead of "Wetlands."

- The Section 3.10.1.2 heading will be edited to "Section 3.10.1.2 Wetlands and Other Water Resources." Further, Section 3.10.1.2 will be updated in the Final EA to identify the total number of wetlands and streams based on the 2018 findings. The 2018 delineation report will be included as an appendix in the final EA as requested.

- In response to USACE's final comment received, VA proposes no impacts to wetlands or other waterways that may require permit decisions. Further, no impacts within the Village of Elwood's minimum setback distance of 25-feet are proposed under the Phase IV cemetery expansion. Figure 3-6 will be added to Section 3.10.2 for further clarity and robustness. If the scope of the proposed project changes and Clean Water Act permitting is required, water resource field data (i.e., wetland and waterway delineation data) will be updated accordingly.

**Fernando L. Fernández REM**
Office: 202.632.5529
Cell: 202.876.7608

---

**From:** Hall, Soren G CIV USARMY CELRC (USA) <Soren.G.Hall@usace.army.mil>
**Sent:** Tuesday, December 5, 2023 3:45 PM
**To:** VACO Environment <VACOEnvironment@va.gov>; Fernandez, Fernando L. (CFM) <Fernando.Fernandez@va.gov>
**Cc:** Jesse Byrd <jbyrd@lrsfederal.com>
**Subject:** [EXTERNAL] RE: Abraham Lincoln National Cemetery Phase 4 Expansion - Notice of Availability Draft Environmental Assessment LRC-2018-707

Good Afternoon,

Thank you for the opportunity to provide comment on the Draft Environmental Assessment (EA) for the Abraham Lincoln National Cemetery Phase 4 Expansion. We offer the following comments.

Wetland Section 3.10.1.2 of the Draft EA notes that a 2018 delineation identified 10 resources within the project area. The EA stated the following:

*A pre-application meeting was initiated with the USACE to confirm the permitting requirements, and it was determined that a letter of no objection (e.g., an approved jurisdictional determination) was needed. VA requested the letter and the USACE confirmed the project area consisted entirely of dry land and that the project was not subject to its jurisdiction.*

Please note that a letter of no objection is not equivalent with a jurisdictional determination. An approved jurisdictional determination is an official determination that there are, or are not, jurisdictional aquatic resources present on a parcel and/or within the review area based upon existing regulation. If a project does not propose any impacts to potentially jurisdictional resources, a "letter of no objection" (currently referred to as a "no permit required") verfication can be issued.

The letter of no objection was based upon the Phase III Study Area depicted in the USACE correspondence in Appendix B of the EA. Including this statement is of limited utility as the Phase 4 study area is larger. We recommend removal or clarification of this statement.

Figure 3-5 "Existing Wetlands in the Vicinity of the Abraham Lincoln National Cemetery" depicts resource boundaries based upon the USFWS National Wetlands Inventory database. Considering that a delineation was conducted in 2018, which is based on field data and was confirmed by the USACE (whereas the USFWS mapping is an estimate of boundaries based largely upon remote sensing), we recommend use of the 2018 resource boundaries. For clarity and robustness, we recommend that the Environmental Consequences identified in Section 3.10.2 reference the 2018 resource boundaries. Finally, the title for this figure should be revised to refer to "Water Resources" rather than "Wetlands" as the mapping includes streams and other open water areas in addition to wetlands.

Section 3.10.1.2 should be revised in include wetlands and other water resources. The 2018 Wetland Investigation Report identified both wetlands and waterways. Appendix B.3 includes a figure that labels each of these features. We recommend that Section 3.10.1.2 identify the total number of wetlands and streams identified in the 2018 report. We also recommend that the 2018 report be included as an appendix in the final EA.

Finally, we recommend that the data utilized in the 2018 report be updated for any permitting decisions. Field data for aquatic resource delineation reports are generally only valid for 5 years.

Sincerely,

Soren G. Hall
Team Leader
U.S. Army Corps of Engineers
Chicago District – Regulatory Branch
231 South LaSalle Street, 15th Floor
Chicago, Illinois 60604
Mobile: (312) 730-8839
https://www.lrc.usace.army.mil/Missions/Regulatory/

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**From:** VACO Environment <VACOEnvironment@va.gov>
**Sent:** Monday, November 13, 2023 9:53 AM
**To:** Fernandez, Fernando L. (CFM) <Fernando.Fernandez@va.gov>
**Cc:** Jesse Byrd <jbyrd@lrsfederal.com>
**Subject:** [Non-DoD Source] Abraham Lincoln National Cemetery Phase 4 Expansion - Notice of Availability Draft Environmental Assessment

**U.S. DEPARTMENT OF VETERANS AFFAIRS Office of Construction & Facilities Management**
**Washington DC 20420**

November 6, 2023

*Sent via email*

**SUBJECT: Notice of Availability – Draft Environmental Assessment for the Abraham Lincoln National Cemetery Major Expansion Located in Elwood, Will County, Illinois**

Dear Valued Stakeholder:

The U.S. Department of Veterans Affairs (VA) has prepared a Draft Environmental Assessment (EA) to analyze the potential environmental impacts associated with the Phase 4 Gravesite Development and Improvement Project (Proposed Action) encompassing approximately 197 acres. This includes previously developed portions of the Abraham Lincoln National Cemetery (National Cemetery) located at 20953 West Hoff Road in Elwood, Will County, Illinois. The location of the National Cemetery and proposed Phase 4 expansion is shown in Figures 1 and 2.

The **purpose** of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois. The Proposed Action is **needed** to meet the National Cemetery Administration's (NCA's) goal of providing eligible veterans and their family members with reasonable access to VA interment options.

This Notice of Availability (NOA) is being published concurrently in the *Herald-News*, a local newspaper in Joliet, Illinois and on the VA website at https://www.cfm.va.gov/environmental. The public can review the Draft EA on the VA website or at the Joliet Public Library located at 150 North Ottawa Street, Joliet, Illinois 60432.

VA prepared the Draft EA according to the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code 4321-4370h), the Council on Environmental Quality Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and VA Implementing Regulations (38 CFR Part 26). VA recognizes that you, as an identified stakeholder, may have comments on the content of the Draft EA. Please submit your comments/information via email within 30 days following receipt of this NOA to vacoenvironment@va.gov with the subject line, "Abraham Lincoln National Cemetery Draft EA."

For additional information or questions, please contact Mr. Fernando Fernandez at Fernando.Fernandez@va.gov with the subject line, "Abraham Lincoln National Cemetery Draft EA."

Respectfully,

Kathryn Domm
Director, Environmental Program Office
Office of Construction and Facilities Management

**Figure 1. Site Vicinity Map**

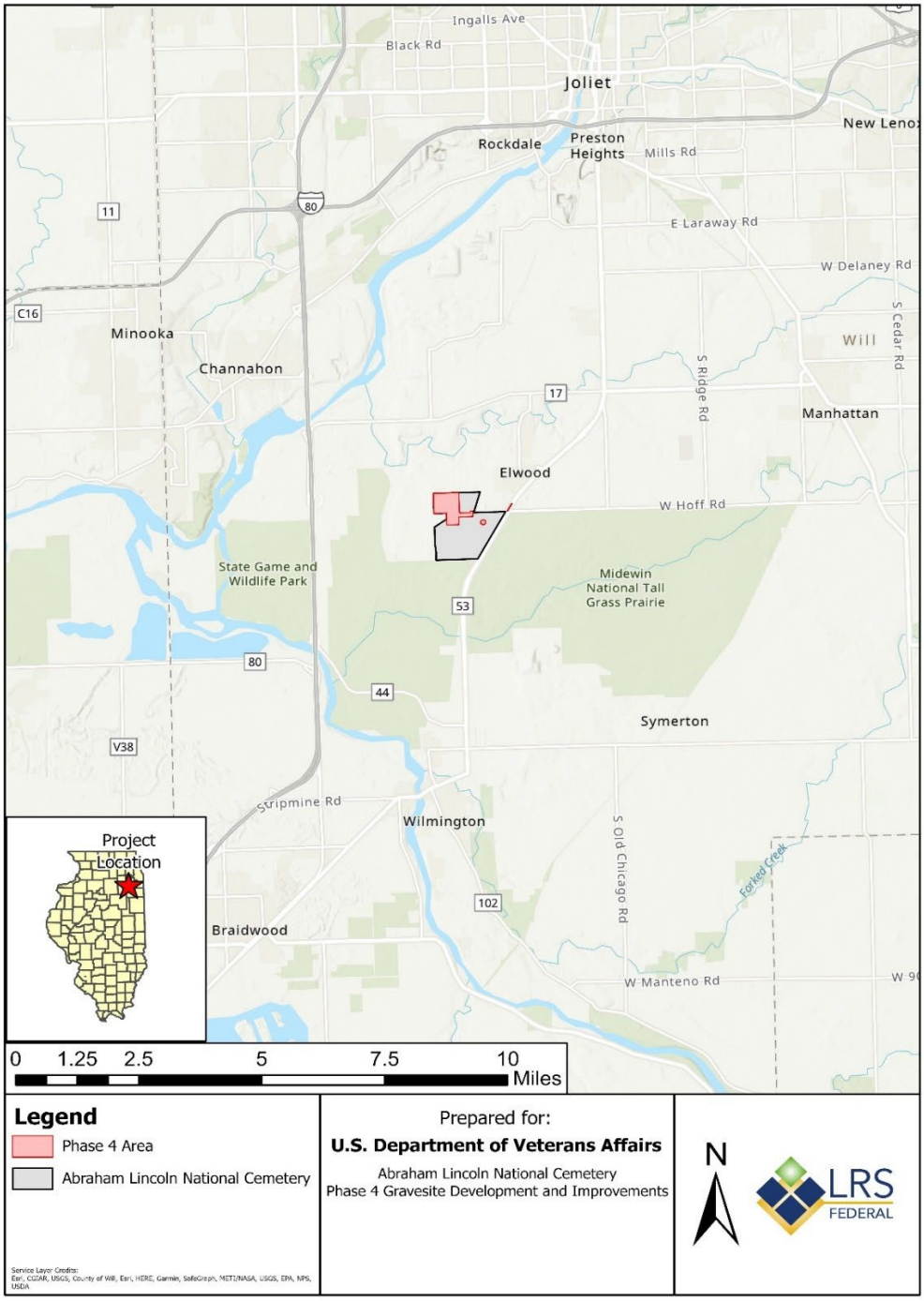
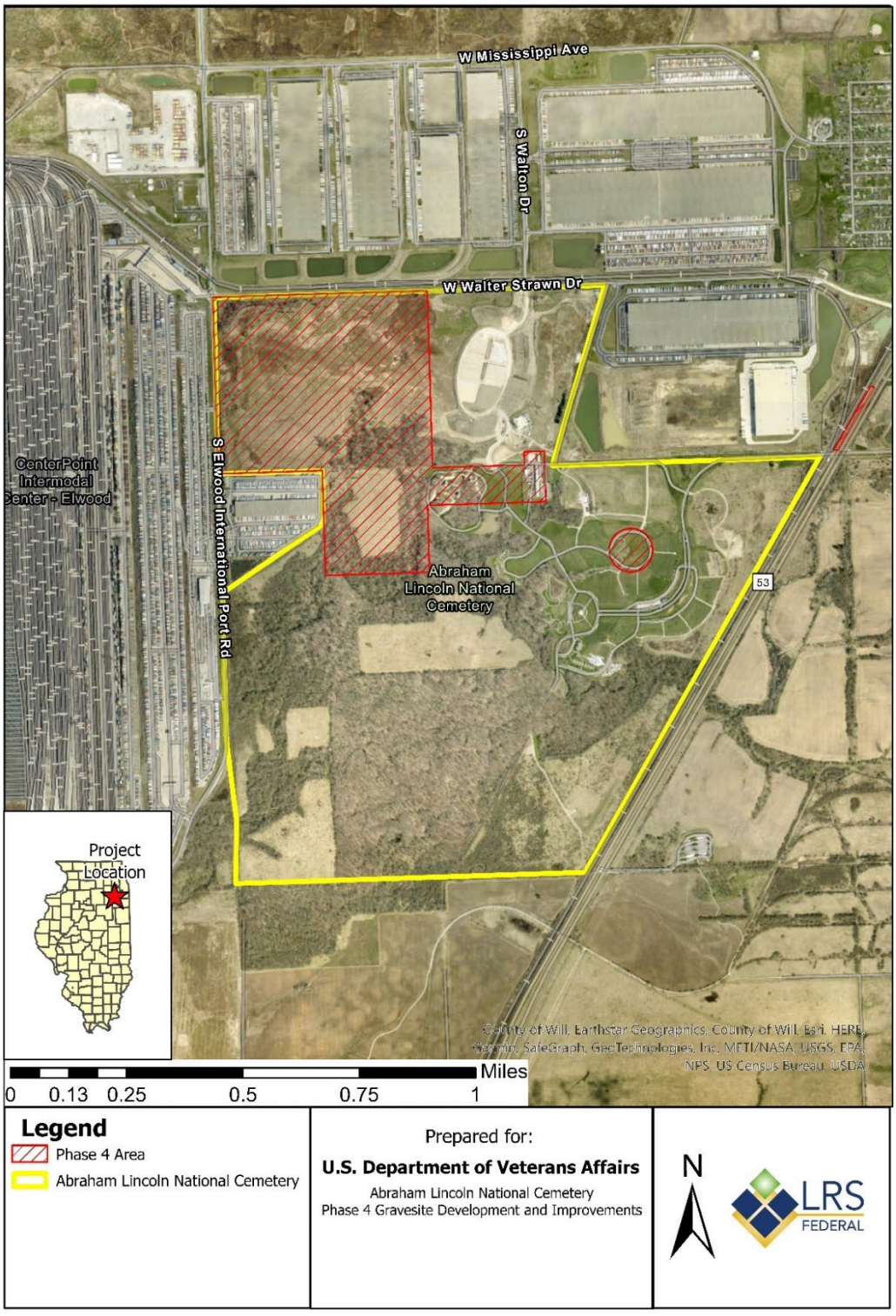



**Figure 2. Project Location Aerial Map**


W Mississippi Ave
S Walton Dr
W Walter Strawn Dr
CenterPoint Intermodal Center - Elwood
S Elwood International Port Rd
Abraham Lincoln National Cemetery
53
Project Location
County of Will, Earthstar Geographics, County of Will, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA
Miles
0 0.13 0.25 0.5 0.75 1
Legend
Phase 4 Area
Abraham Lincoln National Cemetery
Prepared for:
U.S. Department of Veterans Affairs
Abraham Lincoln National Cemetery
Phase 4 Gravesite Development and Improvements
N
LRS FEDERAL

USFWS Correspondence

## Jesse Byrd

**From:** Fernandez, Fernando L. (CFM) <Fernando.Fernandez@va.gov>
**Sent:** Thursday, December 7, 2023 1:58 PM
**To:** Jesse Byrd
**Cc:** Fernandez, Fernando L. (CFM)
**Subject:** FW: [EXTERNAL] Abraham Lincoln National Cemetery Phase 4 Expansion - Scoping Notice for Draft Environmental Assessment

**Follow Up Flag:** Follow up
**Flag Status:** Completed

FYI!

**Fernando L. Fernández REM**
Office: 202.632.5529
Cell: 202.876.7608

---

**From:** Cirton, Shawn <shawn_cirton@fws.gov>
**Sent:** Thursday, December 7, 2023 1:41 PM
**To:** Fernandez, Fernando L. (CFM) <Fernando.Fernandez@va.gov>
**Subject:** Fw: [EXTERNAL] Abraham Lincoln National Cemetery Phase 4 Expansion - Scoping Notice for Draft Environmental Assessment

**Shawn Cirton**
**Fish and Wildlife Biologist**
**U.S. Fish and Wildlife Service**
**Chicago Illinois Field Office**
**230 South Dearborn Street, Suite 2938**
**Chicago, IL 60604**
**(847)366-2345**

---

**From:** Cirton, Shawn <shawn_cirton@fws.gov>
**Sent:** Thursday, December 7, 2023 12:38 PM
**To:** vacoenvironment@va.gov <vacoenvironment@va.gov>; Fernando.Fernandez@va.gov
**Subject:** Re: [EXTERNAL] Abraham Lincoln National Cemetery Phase 4 Expansion - Scoping Notice for Draft Environmental Assessment

Mr. Fernandez,

The USFWS provides the following comments on the Draft Environmental Assessment (EA) for the Abraham Lincoln National Cemetery Phase 4 Expansion.

The Draft EA notes that U.S. Department of Veterans Affairs used the Service's Information for Planning and Consultation (IPaC) project planning tool to assess impacts to Service trust resources. However, the

U.S. Department of Veterans Affairs didn't make effect determinations for all Federally listed species. The Final EA should provide effect determinations for all listed species. It would be useful to the reader if the effect determinations for all Federally listed species were included in a table.

We checked our ECOSphere database and found that through IPaC, a determination key (D key) for the northern long-eared bat (NLEB) was used and a "no effect" consistency letter for the NLEB was generated. The consistency letter and all other project records generated by IPaC should be included in the Final EA.

The Draft EA notes that, "Although northern long-eared bats could potentially occur in the project area, implementation of the Proposed Action, including BMPs as described in Section 4.0, is expected to result in no effect to the species, if present." The Draft EA indicates that trees are located onsite and as a BMP, the U.S. Department of Veterans Affairs would, "Perform limited tree clearing only during the USFWS-designated winter clearing window for the northern long-eared bat (October 1 through March 31)." The Draft EA does not determine how many acres of trees or the number of trees that would be cleared for the project. The Final EA should identify the acreage of trees to be cleared and suitability as roost trees in order to assist in making the effect determination for the NLEB.

Additionally, based on a proposed BMP to minimize impacts to nesting migratory birds, it does not appear that all trees would be cleared during the NLEB tree clearing window. Furthermore, the "no effect" consistency letter for the NLEB stops at question #8 which asks, "Have you determined that your proposed action will have no effect on the northern long- eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action. If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat." The U.S. Department of Veterans Affairs answers "yes" to this question and no additional questions were generated. Additional questions in the D key focuses on whether trees will be cleared to determine if the NLEB may be affected.

If the U.S. Department of Veterans Affairs does not commit to clearing suitable roost trees during the time when bats may be present (as identified in the migratory bird tree clearing BMP), the agency should use the D key again, answer "no" to question #8, and continue through the key. After fully completing the D key and answering questions about tree clearing (which includes the actions associated with the migratory bird BMP), the agency should use the new D key results and add that result to the Final EA. This may result in a "may affect, not likely to adversely affect" determination for the NLEB. Please note that NLEBs have been captured in the past immediately north of the cemetary on the U.S. Army's Joliet Training Area property along Jackson Creek. Finally, the effect determination for the eastern massasauga rattlesnake should be "no effect."

Please contact me if you have any questions.

Sincerely,

**Shawn Cirton**
**Fish and Wildlife Biologist**
**U.S. Fish and Wildlife Service**

**Chicago Illinois Field Office**
**230 South Dearborn Street, Suite 2938**
**Chicago, IL 60604**
**(847)366-2345**

---

**From:** Lah, Kristopher <kristopher_lah@fws.gov>
**Sent:** Friday, September 29, 2023 9:02 AM
**To:** Cirton, Shawn <shawn_cirton@fws.gov>
**Subject:** Fw: [EXTERNAL] Abraham Lincoln National Cemetery Phase 4 Expansion - Scoping Notice for Draft Environmental Assessment

FYI.

Kris

Kristopher Lah
Endangered Species Biologist
U.S. Fish and Wildlife Service
230 S. Dearborn, Suite 2938
Chicago, IL 60604-1507
(847) 366-2347

FWS PRIDE

he, him, his

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**From:** VACO Environment <VACOEnvironment@va.gov>
**Sent:** Thursday, September 28, 2023 3:47 PM
**To:** Fernandez, Fernando L. (CFM) <Fernando.Fernandez@va.gov>
**Cc:** Jesse Byrd <jbyrd@lrsfederal.com>
**Subject:** [EXTERNAL] Abraham Lincoln National Cemetery Phase 4 Expansion - Scoping Notice for Draft Environmental Assessment

Miami Tribe Response

# Miami Tribe of Oklahoma

3410 P St. NW, Miami, OK 74354 ● P.O. Box 1326, Miami, OK 74355
Ph: (918) 541-1300 ● Fax: (918) 542-7260
www.miamination.com


Via email: vacoenvironment@va.gov

November 18, 2023

Kathryn Domm
Director, Environmental Program Office
Office of Construction and Facilities Management

Re: Abraham Lincoln National Cemetery Phase 4 Expansion - Notice of Availability Draft Environmental Assessment – Comments of the Miami Tribe of Oklahoma

Dear Ms. Domm:

Aya, kweehsitoolaanki – I show you respect. The Miami Tribe of Oklahoma, a federally recognized Indian tribe with a Constitution ratified in 1939 under the Oklahoma Indian Welfare Act of 1936, respectfully submits the following comments regarding the Abraham Lincoln National Cemetery in Will County, IL.

The Miami Tribe offers no objection to the above-referenced project at this time, as we are not currently aware of existing documentation directly linking a specific Miami cultural or historic site to the project site. However, given the Miami Tribe's deep and enduring relationship to its historic lands and cultural property within present-day Illinois, if any human remains or Native American cultural items falling under the Native American Graves Protection and Repatriation Act (NAGPRA) or archaeological evidence is discovered during any phase of this project, the Miami Tribe requests immediate consultation with the entity of jurisdiction for the location of discovery. In such a case please contact me at 918-541-7885 or by email at THPO@miamination.com to initiate consultation.

The Miami Tribe requests to serve as a consulting party to the proposed project. In my capacity as Tribal Historic Preservation Officer, I am the point of contact for all Section 106 consultation.

Respectfully,

*Logan York*

Logan York
Tribal Historic Preservation Officer

Forest County Potawatomi Community Correspondence

## Jesse Byrd

**From:** VACO Environment <VACOEnvironment@va.gov>
**Sent:** Friday, December 15, 2023 4:06 PM
**To:** Jesse Byrd
**Cc:** McArdle, Angela B. (CFM) (she/her/hers); Fernandez, Fernando L. (CFM)
**Subject:** FW: Abraham Lincoln National Cemetery Phase 4 Expansion - Notice of Availability Draft Environmental Assessment

FYI

**Fernando L. Fernández REM**
Office: 202.632.5529
Cell: 202.876.7608

---

**From:** Benjamin Rhodd <Benjamin.Rhodd@fcp-nsn.gov>
**Sent:** Monday, December 11, 2023 4:37 PM
**To:** VACO Environment <VACOEnvironment@va.gov>
**Subject:** [EXTERNAL] RE: Abraham Lincoln National Cemetery Phase 4 Expansion - Notice of Availability Draft Environmental Assessment

VACO:

Pursuant to consultation under Section 106 of the National Historic Preservation Act (1966 as amended) the Forest County Potawatomi Community (FCPC), a Federally Recognized Native American Tribe, reserves the right to comment on Federal undertakings, as defined under the act inclusive of licensing, permitting or use of federal funds by a delegated agency.

The Tribal Historic Preservation Office (THPO) staff has reviewed the information you provided for this project. Upon review of site data and supplemental cultural history within our Office, the FCPC THPO has two sites in either close proximity or possibly within the area of expansion as depicted. The FCPC HPO requests to be further consulted upon this project.

As a standard caveat sent with each proposed project reviewed by the FCPC THPO, the following applies. In the event an Inadvertent Discovery (ID) occurs at any phase of a project or undertaking as defined, and human remains or archaeologically significant materials are exposed as a result of project activities, work should cease immediately. The Tribe(s) must be included with the SHPO in any consultation regarding treatment and disposition of an ID find.

Thank you for protecting cultural and historic properties and if you have any questions or concerns, please contact me at the email or number listed below.

Respectfully,

Ben Rhodd, MS, RPA, Tribal Historic Preservation Officer
Forest County Potawatomi
Historic Preservation Office
8130 Mish ko Swen Drive, P.O. Box 340, Crandon, Wisconsin 54520
P: 715-478-7354 C: 715-889-0202 Main: 715-478-7474

Email: Benjamin.Rhodd@fcp-nsn.gov
www.fcpotawatomi.com

**From:** VACO Environment <VACOEnvironment@va.gov>
**Sent:** Monday, November 13, 2023 9:53 AM
**To:** Fernandez, Fernando L. (CFM) <Fernando.Fernandez@va.gov>
**Cc:** Jesse Byrd <jbyrd@lrsfederal.com>
**Subject:** Abraham Lincoln National Cemetery Phase 4 Expansion - Notice of Availability Draft Environmental Assessment

**U.S. DEPARTMENT OF VETERANS AFFAIRS Office of Construction & Facilities Management**
**Washington DC 20420**

November 6, 2023

*Sent via email*

**SUBJECT: Notice of Availability – Draft Environmental Assessment for the Abraham Lincoln National Cemetery Major Expansion Located in Elwood, Will County, Illinois**

Dear Valued Stakeholder:

The U.S. Department of Veterans Affairs (VA) has prepared a Draft Environmental Assessment (EA) to analyze the potential environmental impacts associated with the Phase 4 Gravesite Development and Improvement Project (Proposed Action) encompassing approximately 197 acres. This includes previously developed portions of the Abraham Lincoln National Cemetery (National Cemetery) located at 20953 West Hoff Road in Elwood, Will County, Illinois. The location of the National Cemetery and proposed Phase 4 expansion is shown in Figures 1 and 2.

The **purpose** of the Proposed Action is to provide fifteen years of additional interment capacity at the National Cemetery to serve the projected burial needs of Veterans in Illinois. The Proposed Action is **needed** to meet the National Cemetery Administration's (NCA's) goal of providing eligible veterans and their family members with reasonable access to VA interment options.

This Notice of Availability (NOA) is being published concurrently in the *Herald-News*, a local newspaper in Joliet, Illinois and on the VA website at https://www.cfm.va.gov/environmental. The public can review the Draft EA on the VA website or at the Joliet Public Library located at 150 North Ottawa Street, Joliet, Illinois 60432.

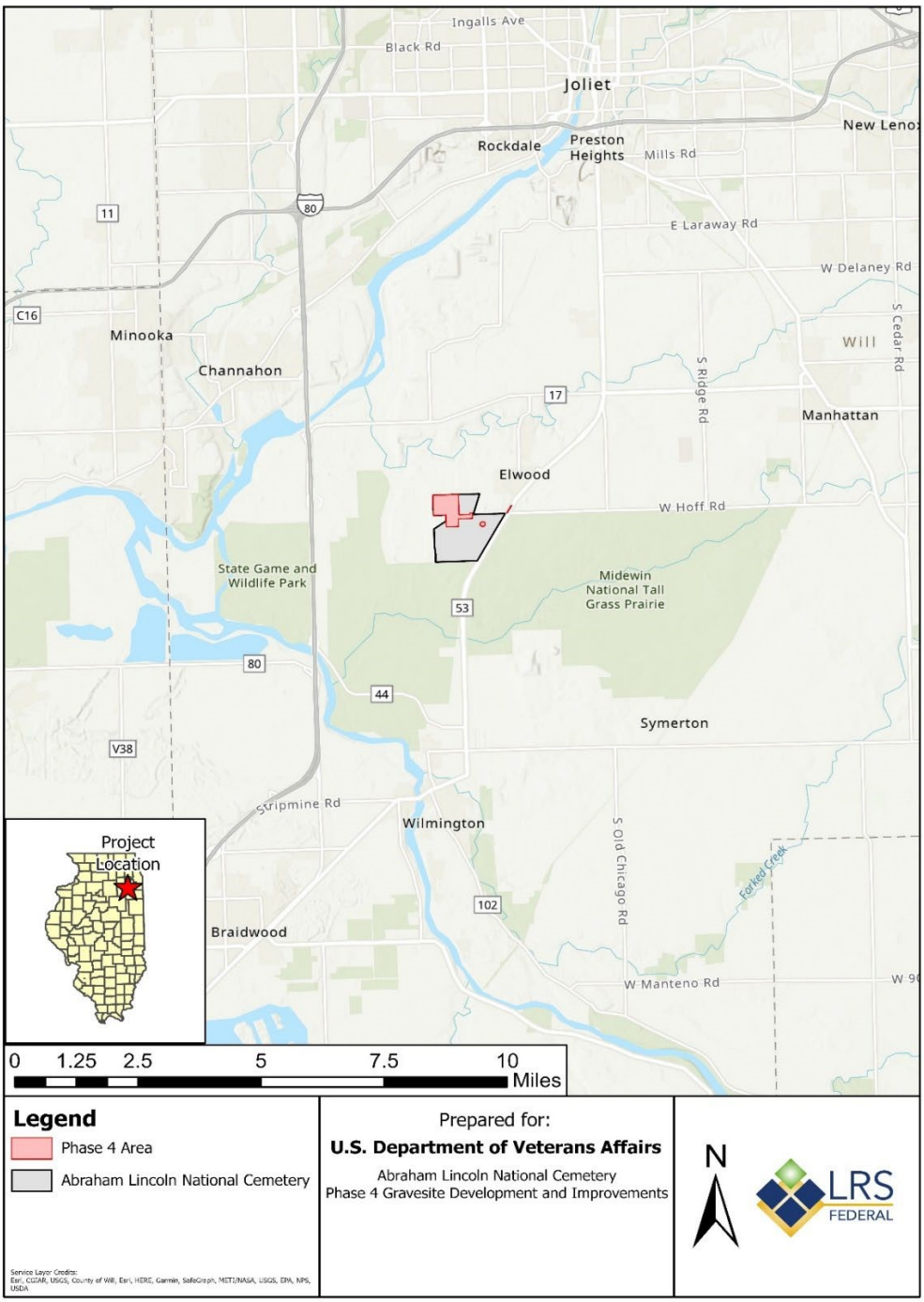
VA prepared the Draft EA according to the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code 4321-4370h), the Council on Environmental Quality Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and VA Implementing Regulations (38 CFR Part 26). VA recognizes that you, as an identified stakeholder, may have comments on the content of the Draft EA. Please submit your comments/information via email within 30 days following receipt of this NOA to vacoenvironment@va.gov with the subject line, "Abraham Lincoln National Cemetery Draft EA."

For additional information or questions, please contact Mr. Fernando Fernandez at Fernando.Fernandez@va.gov with the subject line, "Abraham Lincoln National Cemetery Draft EA."

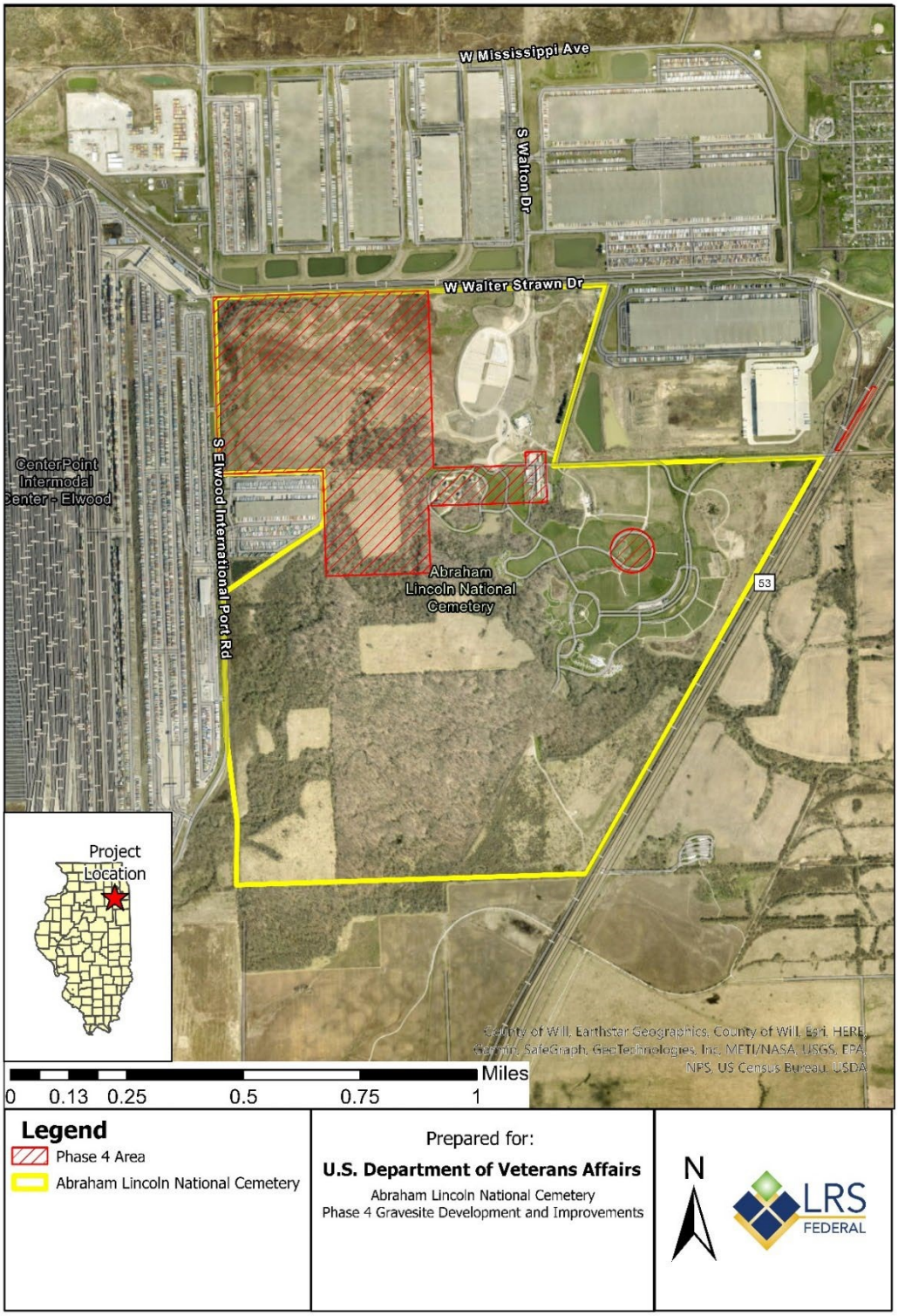
Respectfully,

Kathryn Domm
Director, Environmental Program Office
Office of Construction and Facilities Management

**Figure 1. Site Vicinity Map**



## Figure 2. Project Location Aerial Map



# C Appendix C: General Conformity Determination, Air Emissions Analysis, and Greenhouse Gas Emissions Analysis

This appendix provides additional information regarding the assumptions and methodologies used to quantify air and GhG emissions for the Proposed Action and No Action Alternative. The scope of this analysis includes emissions from several activities: land clearing; debris loading and unloading; site grading for future development; exhaust from equipment; and exhaust from worker trips.

The "General Building Debris Estimation Formula" from FEMA's 2010 *Debris Estimating Field Guide* was used to estimate the quantity of debris in cubic yards (CY) that will be generated under the Proposed Action:

$$Debris\ (CY) = \frac{Length\ \times Width\ \times Height\ \times 0.33}{27}$$

USACE developed debris conversions are listed below (FEMA, 2010):

- Construction and demolition debris: 1 ton = 2 CY
- Mixed debris: 1 ton = 4 CY
- Vegetative debris (hardwoods): 1 ton = 4 CY
- Vegetative debris (softwoods): 1 ton = 6 CY

The approximate area of land disturbance is 173 acres. The area is primarily softwood vegetative debris. To estimate the volume of vegetative debris, it was assumed the first six inches of ground disturbance would be removed.

**Table 1. Estimated Debris Quantities**

| Building | Length (ft) | Width (ft) | Height (ft) | Debris (CY) | Debris (tons) |
|---|---|---|---|---|---|
| Vegetative Debris | 173 acres | | 0.5 | 139,553 | 23,259 |

### Fugitive Dust Emissions for Earth-Moving Activities

The USEPA AP-42, Compilation of Air Emission Factors, was used to estimate fugitive dust emissions of $PM_{2.5}$ and $PM_{10}$ for earth-moving activities. The emission factors derived in Chapter 13.2.1 were used to calculate estimated emissions from transportation to and from the site on paved roads.

AP-42 Chapter 13.2.3 provides recommendations for calculating emission factors for various stages of the demolition and debris removal process: general land clearing, loading of debris into trucks, truck transport of debris, and truck unloading of debris.

The equations and methodologies of AP-42 Chapter 11.9 (overburdened dozer) were used to determine an appropriate emission factor for general land clearing as shown below:

$$EF_{PM-10} = 0.75\left(\frac{s^{1.5}}{M^{1.4}}\right)$$

$$EF_{PM-2.5} = 0.105 \left(\frac{5.7s^{1.2}}{M^{1.3}}\right)$$

Where:

EF = emission factor (lbs/hr)

s = material silt content (%)

M = material moisture content (%)

**Table 2. Emission Factors for Land Clearing**

| | Emission Factor (lbs/hour) | |
|---|---|---|
| **Process** | **$PM_{10}$** | **$PM_{2.5}$** |
| General Land Clearing | 2.27 | 0.79 |
| Assumptions:<br>Silt loam soils can have a high silt content, 50 percent material silt percentage was used. A 30 percent moisture content was used. | | |

To calculate the emissions from land clearing activities it was assumed working hours were from 7 A.M to 5 P.M., 5 days per week, and that land clearing would take place over 12 weeks. Results are provided below.

**Table 3. Fugitive Dust Emissions from Land Clearing**

| Activity | Number of Units | Hours | Days | Emissions (tons/year) | |
|---|---|---|---|---|---|
| | | | | **$PM_{10}$** | **$PM_{2.5}$** |
| General Land Clearing | 1 | 10 | 60 | 0.68 | 0.24 |

To determine fugitive dust emission factors for loading debris into trucks, the methodologies of AP-42 Chapters 13.2.3 and 13.2.4 were used. The equation used for determining the associated PM10 and PM2.5 emission factors is provided below.

$$\boldsymbol{EF = k(0.0032)\frac{\left(\frac{U}{5}\right)^{1.3}}{\left(\frac{M}{2}\right)^{1.4}}}$$

Where:

EF = emission factor (lbs/ton)

k = particle size multiplier (dimensionless)

U = mean wind speed (miles per hour)

M = material moisture content (%)

Worst case emissions from debris loading would occur on dry, windy days. Emission factors for loading of debris for relocation/stockpiling are provided below.

**Table 4. Emission Factors for Loading Debris into Trucks**

| | Emission Factors (lbs/ton) | |
|---|---|---|
| **Activity** | **$PM_{10}$** | **$PM_{2.5}$** |
| Debris Loading | 0.086 | 0.013 |
| Assumptions:<br>Moisture content = 2%<br>Mean wind speed = 15 mph<br>k = 0.35 for $PM_{10}$ and 0.053 for $PM_{2.5}$ | | |

**Table 5. Debris Loading Fugitive Dust Emissions.**

| | Emissions (tons/year)[1] | |
|---|---|---|
| **Activity** | **$PM_{10}$** | **$PM_{2.5}$** |
| Loading of Debris | 0.56 | 0.08 |
| [1]Assumes all debris removal happens within the same calendar year (for conservatism). | | |

### Equipment Exhaust Emissions During Operation

The following construction and demolition (C&D) equipment is expected to be used to accomplish the Proposed Action. It is assumed that all equipment is diesel powered. Non-road C&D equipment included in the analysis are listed below:

- Backhoes
- Dozers
- Excavators
- Front end loaders
- Jackhammers
- Graders

Hourly utilization for the equipment was estimated based on the extent of construction and demolition activities and calculated according to the equation below:

$$M = N \times HP \times EF$$

Where:

M = Mass of pollutants emitted

N = source population (units)

HP = average rated horsepower

EF = average emission per unit of use

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**Table 6. Construction and Demolition Equipment Exhaust Emissions (Criteria Pollutants and Precursors)**

| Equipment | Number of Units | Hours Per Day | Days | Horsepower (hp) | Emission Factor (g/hp-hr) | | | | | | Emissions | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | VOC | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ | VOC | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ |
| Diesel hammer | 1 | 10 | 30 | 50 | 0.093 | 2.53 | 0.28 | 0.021 | 0.021 | 0.002 | 0.002 | 0.042 | 0.005 | 0.000 | 0.000 | 0.0000 |
| Dozer | 2 | 10 | 60 | 350 | 0.026 | 0.401 | 0.15 | 0.026 | 0.025 | 0.001 | 0.012 | 0.186 | 0.069 | 0.012 | 0.012 | 0.0005 |
| Front end loader | 2 | 10 | 60 | 100 | 0.441 | 2.49 | 2.26 | 0.369 | 0.357 | 0.002 | 0.058 | 0.329 | 0.299 | 0.049 | 0.047 | 0.0003 |
| Grader | 2 | 10 | 60 | 200 | 0.014 | 0.198 | 0.053 | 0.013 | 0.012 | 0.001 | 0.004 | 0.052 | 0.014 | 0.003 | 0.003 | 0.0003 |
| Hydraulic excavator | 2 | 10 | 60 | 400 | 0.021 | 0.301 | 0.11 | 0.02 | 0.02 | 0.001 | 0.011 | 0.159 | 0.058 | 0.011 | 0.011 | 0.0005 |
| | | | | | | | | | | **Total** | **0.087** | **0.768** | **0.445** | **0.075** | **0.073** | **0.002** |

### On-road Vehicle Emissions

Emission factors derived using MOVES and engineering judgement were used to estimate on-road vehicle emissions for the purposes of this EA.

**Table 7. Construction Vehicle Exhaust Emissions (On-Road, Criteria Pollutants and Precursors)**

| Off Site Vehicle | Mileage | Emission Factor (lb/mile) | | | | | | Emissions (tons) | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | VOC | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ | VOC | $NO_X$ | CO | $PM_{10}$ | $PM_{2.5}$ | $SO_2$ |
| Trucks | 80,000 | 0.0001 | 0.0002 | 0.0039 | 0 | 0.0002 | 0 | 0.004 | 0.008 | 0.156 | 0 | 0.008 | 0 |
| Passenger Cars | 120,000 | 0.0006 | 0.0054 | 0.0023 | 0.0003 | 0.0008 | 0 | 0.036 | 0.324 | 0.138 | 0.018 | 0.048 | 0 |
| | | | | | | | **Total** | **0.04** | **0.332** | **0.294** | **0.018** | **0.056** | **0** |

Assumptions:

Roadway type is urban unrestricted.

Offsite vehicles include material delivery trucks and dump trucks, traveling 20 miles per roundtrip.

Vehicles travel 40 miles per roundtrip and are gasoline powered.

Assumes 10 trucks and 15 passenger cars travel to and from the project site per day for 200 days.

### Total Air Emissions

Based on the analysis provided in the section, the Proposed Action would not require a formal General Conformity Determination as shown below:

**Table 8. Total Air Emissions Summary**

| Activity | Emissions (tons per year) | | | | | |
|---|---|---|---|---|---|---|
| | **VOC** | **$NO_X$** | **$SO_2$** | **CO** | **$PM_{10}$** | **$PM_{2.5}$** |
| Land Clearing | - | - | - | - | 0.680 | 0.236 |
| Grading | - | - | - | - | 0.452 | 0.248 |
| Debris Loading | - | - | - | - | 0.163 | 0.0247 |
| Debris Unloading | - | - | - | - | 0.163 | 0.0247 |
| Non-Road Exhaust | 0.087 | 0.768 | 0.002 | 0.445 | 0.075 | 0.073 |
| On-Road Vehicle Exhaust | 0.040 | 0.332 | - | 0.294 | 0.018 | 0.056 |
| *De Minimis Threshold* | *50* | *100* | *100* | *100* | *N/A* | *100* |
| **Total** | **0.126** | **1.100** | **0.0779** | **0.739** | **1.55** | **0.662** |

### Greenhouse Gas Emissions

The same methodologies described above were used to estimate GhG emissions for the Proposed Action. The global warming potentials listed in Subpart A to 40 CFR 98 are used to convert methane to $MTCO_2e$.

**Table 9. Greenhouse Gas Emissions from Non-Road Equipment Exhaust**

| Equipment | Number of Units | Hours Per Day | Days | Horsepower (hp) | Emission Factor (g/hp-hr) | | Emissions (MT) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | $CH_4$ | $CO_2$ | $CH_4$ | $CO_2$ |
| Diesel hammer | 1 | 10 | 30 | 50 | 0.012 | 590.1 | 0.0002 | 8.852 |
| Dozer | 2 | 10 | 60 | 350 | 0.002 | 536.8 | 0.0008 | 225.456 |
| Front end loader | 2 | 10 | 60 | 100 | 0.0128 | 694.7 | 0.0015 | 83.364 |
| Grader | 2 | 10 | 60 | 200 | 0.001 | 536.8 | 0.0002 | 128.832 |
| Hydraulic excavator | 2 | 10 | 60 | 400 | 0.0015 | 536.8 | 0.0007 | 257.664 |
| | | | | | | Total | 0.004 | 704.168 |

**Table 10. Greenhouse Gas Emissions from On-Road Vehicle Exhaust**

| Offsite Vehicle | Mileage | $CO_2$ Emission Factor (lbs/mile) | $CO_2$ Emissions (MT) |
|---|---|---|---|
| Trucks | 80,000 | 0.8217 | 29.8 |
| Passenger Cars | 120,000 | 3.0517 | 166.2 |
| | | Total | 107.8 |

**Table 11. Greenhouse Gas Emissions Summary**

| Activity | Emissions | | |
|---|---|---|---|
| | $CH_4$ (MT)[1] | $CO_2$ (MT) | Total ($MTCO_2e$) |
| Non-Road Exhaust | 0.004 | 704.2 | 704.3 |
| On-Road Vehicle Exhaust | - | 196.0 | 196.0 |
| Total | 0.004 | 900.2 | 900.3 |

[1] Methane has a global warming potential of 25 compared to $CO_2$

# D Appendix D: Biological Report for the Abraham Lincoln National Cemetery

# Biological Survey Report for the Abraham Lincoln National Cemetery Project, Will County, Illinois

APRIL 2023

PREPARED FOR

**U.S. Department of Veterans Affairs**

PREPARED BY

**SWCA Environmental Consultants on behalf of LRS Federal, LLC**

# BIOLOGICAL SURVEY REPORT FOR THE ABRAHAM LINCOLN NATIONAL CEMETERY PROJECT, WILL COUNTY, ILLINOIS

Prepared for

**U.S. Department of Veterans Affairs**
5001 N Piedras Street
Will, Illinois 79930

Prepared by

**SWCA Environmental Consultants**
200 W 22nd Street, Suite 220
Lombard, Illinois 60148
www.swca.com

On Behalf of

**LRS Federal, LLC**
565 Benfield Blvd, Suite 400
Severna Park, Maryland 21146
(410) 544-3570

April 2023

# CONTENTS



## Appendices



## Tables

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# 1 INTRODUCTION

On behalf of the U.S. Department of Veterans Affairs (VA), and as a sub-consultant to LRS Federal, LLC, SWCA Environmental Consultants (SWCA) provided biological services for the Abraham Lincoln National Cemetery Project (proposed project) located in Will County, Illinois. The project area is located within the Abraham Lincoln National Cemetery in Will, Illinois.

The proposed project involves the expansion of the Abraham Lincoln National Cemetery. The proposed project will occur on approximately 198 acres of Department of Veterans Affairs-managed land (Appendix A, Figure A.1).

This biological survey report will facilitate the VA's compliance with the following federal and state laws and regulations:

- Endangered Species Act of 1973 (Public Law 93-205) (ESA) and amendments of 1988 (Public Law 100-478)
- Bald and Golden Eagle Protection Act of 1940 (16 United States Code 668–668d, 54 Stat. 250)
- Migratory Bird Treaty Act of 1918 (MBTA) (16 United States Code 703–712)
- Sections 401 and 404 of the Clean Water Act. All federal consultations, including those under the ESA, must be completed prior to U.S. Army Corps of Engineers issuance of section 404 authorizations.
- Illinois Endangered Species Protection Act (520 ILCS 10/1) (from Ch. 8, par. 331)

# 2 METHODS

## 2.1 Desktop Assessment

Prior to the biological survey, SWCA reviewed publicly existing data to characterize baseline conditions for the project area. These baseline data included Natural Resources Conservation Service (NRCS) soil maps (NRCS 2023), U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) maps (USGS 2023), National Wetlands Inventory (NWI) maps (U.S. Fish and Wildlife Service [USFWS] 2023a), and National Land Cover Database (USGS 2019).

The ESA and the 520 ILCS 10/1 Illinois Endangered Species Protection Act provide a framework to conserve and protect endangered and threatened species and their habitats. Therefore, SWCA also reviewed the USFWS Information for Planning and Consultation (IPaC) system data (USFWS 2023b), the USFWS Critical Habitat Portal (USFWS 2023c), and the Illinois Department of Natural Resources Ecological Compliance Assessment Tool (EcoCAT) (Illinois Department of Natural Resources 2023) to identify critical habitat and/or special-status species with potential to occur in the project area.

## 2.2 Field Reconnaissance

SWCA biologist Hailey Preston conducted a biological survey of the project area on March 10, 2023. The field reconnaissance consisted of visual pedestrian surveys. The objective of the survey was to evaluate the absence or likely presence of potentially suitable habitat for federally and state-listed or protected species within the project area.

## 2.3 Information Planning and Consultation Effects Assessment

SWCA completed an effects analysis of federally listed species using the USFWS's IPaC determination keys (DKs) and Consultation Package Builder (CPB).

# 3 RESULTS

## 3.1 Desktop Assessment

### *3.1.1 Environmental Setting*

The project area elevation is approximately 176 meters to 197 meters above mean sea level. The climate for this area is based on the climatic records for the Joliet Brandon Road Lock/Dam, Illinois, weather station; the period of record is 2000 to 2023 (National Oceanic and Atmospheric Administration Regional Climate Center 2023). Rainfall for the project area is most abundant from April through September, averaging 4 inches during these months. Temperatures are coldest in January with an average low of -4 degrees Fahrenheit (°F) and are warmest in July with an average maximum temperature of 93°F. An official wetland delineation was not completed during field reconnaissance, but potential features indicated by the USFWS NWI and the USGS NHD were visually observed. Representative photographs of the project area are provided in Appendix B.

### *3.1.2 Soils*

Twelve soil types are mapped within the project area (NRCS 2023) (Table 1). Only one soil unit, Ashkum silty clay loam, 0 to 2 percent slopes, which comprises approximately 15% of the project area classifies as hydric (NRCS 2023a.

### *3.1.3 Vegetation*

The project area occurs within one U.S. Environmental Protection Agency Level IV ecoregion, Illinois/Indiana Prairies (Wood et al. 2006). The Illinois/Indiana Prairies ecoregion is covered in loamy, calcium-rich glacial till, lake sediment, and mixed glacial drift. This area is heavily utilized for agriculture. Lands have been drained by tiling and ditching, draining them through the existing natural drainage channels, and eliminating most marshes and pothole lakes.

The project area is dominated by herbaceous, deciduous forest, hay/pasture, and developed areas (Table 2, Appendix A, Figure A.2).

### *3.1.4 Protected Species*

The USFWS IPaC report indicated four federally threatened, two federally endangered, and one candidate species with potential to occur in the project area. The EcoCAT report did not identify any known occurrences of state-listed species in the project area; however, several of the federally listed species included in the USFWS IPaC report are also state-listed species (Table 3).

### Table 1. Soils in the Project Area

| Soil Type Name | Soil Type Symbol | Hydric Soil | Acres in Project Area | Percent of Project Area |
|---|---|---|---|---|
| Varna silt loam, 4 to 6 percent slopes, eroded | 223C2 | No | 35.6 | 18.0% |
| Ozaukee silt loam, 6 to 12 percent slopes, eroded | 530D2 | No | 30.5 | 15.40% |
| Ashkum silty clay loam, 0 to 2 percent slopes | 232A | Yes | 30 | 15.2% |
| Beecher silt loam, 2 to 4 percent slopes | 298B | No | 27.6 | 14.0% |
| Ozaukee silt loam, 4 to 6 percent slopes, eroded | 530C2 | No | 22.2 | 11.3% |
| Elliott silt loam, 2 to 4 percent slopes | 146B | No | 14.3 | 7.2% |
| Markham silt loam, 4 to 6 percent slopes, eroded | 531C2 | No | 13.1 | 6.6% |
| Ozaukee silt loam, 20 to 30 percent slopes | 530F | No | 10.5 | 5.3% |
| Varna silt loam, 6 to 12 percent slopes, eroded | 223D2 | No | 9.8 | 4.9% |
| Markham silt loam, 6 to 12 percent slopes, eroded | 531D2 | No | 2.4 | 1.2% |
| Blount silt loam, Lake Michigan Lobe, 2 to 4 percent slopes | 23B | No | 1.2 | 0.6% |
| Lawson silt loam, heavy till plain, 0 to 2 percent slopes, occasionally flooded | 8451A | No | 0.4 | 0.2% |
| **Total** | | | **197.6** | **100** |

Source: NRCS (2023)

### Table 2. Land Cover in Project Area

| Cover Type | Acres in the Project Area | Percent (%) |
|---|---|---|
| Herbaceous | 54.3 | 27.5 |
| Deciduous Forest | 37.7 | 19.1 |
| Hay/Pasture | 29.2 | 14.8 |
| Developed, Open Space | 24.2 | 12.2 |
| Developed, High Intensity | 19.0 | 9.6 |
| Developed, Low Intensity | 17.4 | 8.8 |
| Developed, Medium Intensity | 11.0 | 5.6 |
| Cultivated Crops | 4.0 | 2.0 |
| Emergent Herbaceous Wetlands | <1 | <1 |
| Woody Wetlands | <1 | <1 |
| **Total** | **198** | **100** |

**Table 3. Evaluation of Special-Status Species with Potential to Occur within the Abraham Lincoln National Cemetery Project Area, Will County, Illinois.**

| Common Name (*Scientific Name*) | Status* | Range or Habitat Requirements | Potential for Occurrence in Project Area |
|---|---|---|---|
| **Plants** | | | |
| Eastern prairie fringed orchid (*Platanthera leucophaea*) | FT, SE | This species occurs in mesic prairies to wetlands including sedge meadows, marsh edges, and bogs. This orchid species requires full sun and open wetland habitat. | Unlikely to occur. Suitable habitat was not observed in the project area. |
| Lakeside daisy (*Hymenoxys herbacea)* | FT, SE | This species thrives in alvar habitat, which includes sparsely vegetated rock barrens with shallow soils. | Unlikely to occur. Suitable habitat was not observed in the project area. |
| Leafy prairie-clover (*Dalea foliosa)* | FE, SE | This species is restricted to thin-soiled (< 4.5 dm), wet or moist, open dolomite prairies on river terraces in the northeastern part of Illinois. | Unlikely to occur. Suitable habitat was not observed in the project area |
| **Invertebrates** | | | |
| Hine's emerald dragonfly (*Somatochlora hineana*) | FE, SE | This species occurs in spring-fed wetlands, wet meadows, and marshes. | Unlikely to occur. Suitable habitat was not observed in the project area. |
| Monarch butterfly (*Danaus plexippus)* | FC | This species is a seasonal resident occurring in all counties in Illinois. The butterfly prefers open fields, meadows, weedy areas, marshes, and roadsides with nectar resources for foraging and milkweed (*Asclepias* sp.) for breeding. The species' migration route is influenced by the presence of milkweed. | May occur. Suitable habitat was observed in the open grassland portions of the project area. |
| **Reptiles** | | | |
| Eastern massasauga (*Sistrurus catenatus*) | FT, SE | This species lives in wet areas including wet prairies, marshes, fens, sedge meadows, peatlands, and low areas along rivers and lakes. Massasaugas also use adjacent uplands (e.g., shrubland, open woodlands, prairie) during part of the year. The species often hibernates in crayfish burrows but may also be found under logs and tree roots or in small mammal burrows. | May occur. Suitable habitat was observed in the forested area located in the southern portion of the project area. |
| **Mammals** | | | |
| Northern long-eared bat (*Myotis septentrionalis*) | FE, SE | In the summer, this species roosts underneath bark, in cavities or in crevices of both live trees and snags, or in structures (e.g., barns). Northern long-eared bats use forested areas for roosting, foraging, and traveling between summer and winter habitat. Winter habitat consists of caves and mines. | May occur in the spring, summer, and fall. Potential habitat was observed in the forested areas of the project area. Unlikely to occur in the winter due to absence of winter hibernacula. |
| **Birds** | | | |
| American golden plover (*Pluvialis dominica*) | BCC | This species feeds in lagoons and estuaries. During migration from their artic breeding grounds, flocks gather in native prairie, pastures, sod farms, farmland, mudflats, and shorelines, both on major coastlines and in the interior. | Unlikely to occur. Suitable habitat was not observed in the project area |
| Bald eagle (*Haliaeetus leucocephalus*) | BCC | The species generally nests in large deciduous or coniferous trees or cliffs less near aquatic sites (e.g., perennial river or lakes) containing fish. The species roosts in the winter in large deciduous or coniferous trees located near aquatic foraging sites. | May occur. Potentially suitable habitat for nesting and foraging was observed in the forested areas of the project area. |

| **Common Name (*Scientific Name*)** | **Status*** | **Range or Habitat Requirements** | **Potential for Occurrence in Project Area** |
|---|---|---|---|
| Black-billed cuckoo (*Coccyzus erythropthalmus*) | BCC, ST | This species breeds in dense woodlands and thickets with deciduous and evergreen trees, often near water. During migration they forage in thickets, woodlands, orchards, gardens, and scrublands. | May occur during migration. Potentially suitable habitat was observed in the forested areas of the project area. |
| Bobolink (*Dolichonyx oryzivorus*) | BCC | This species breeds in open areas across the northern United States and southern Canada, preferring large fields with a mixture of grasses and broad-leaved plants like legumes and dandelions. The species formerly nested in tallgrass and mixed prairie, but now also nests in hayfields and meadows. | May occur. Potentially suitable habitat was observed in the open grassland areas of the project area. |
| Chimney swift (*Chaetura pelagica*) | BCC | This species nests in hollow trees, tree cavities, or caves. Chimney swifts forage mostly over open terrain but also over forests, ponds, and residential areas. | May occur. Potentially suitable habitat was observed in the open grassland and forested areas of the project area. |
| Henslow's sparrow (*Ammodramus henslowii*) | BCC | This species breeds in wet meadows, weedy pastures, and lowland prairie. Historically, the species bred in Atlantic coastal marshes. They now use reclaimed surfaces in the Ohio River basin and seem disposed to use large fields of tall, dense grass away from trees or other woody vegetation. | Unlikely to occur. Potentially suitable habitat was not observed in the project area. |
| King rail (*Rallus elegans*) | BCC, SE | This species breeds and forages in both freshwater and brackish marshes. Specific marsh plants associated with king rail, both for nesting and wintering, include cattails (*Typha sp*.) and introduced common reed. | Unlikely to occur. Potentially suitable habitat was not observed in the project area. |
| Lesser yellowlegs (*Tringa flavipes*) | BCC | This species uses a wide variety of fresh and brackish wetlands, including mudflats, marshes, lake and pond edges, wet meadows, sewage ponds, and flooded agricultural fields such as rice paddies. | Unlikely to occur. potentially suitable habitat was not observed in the project area. |
| Prothonotary warbler (*Protonotaria citrea*) | BCC | This species breeds in flooded bottomland forests, wooded swamps, and forests near lakes and streams. They tend to avoid forest patches smaller than approximately 250 acres and forest borders less than 100 feet wide. | Unlikely to occur. Potentially suitable habitat was not observed in the project area. |
| Red-headed woodpecker (*Melanerpes erythrocephalus*) | BCC | This species breeds in deciduous woodlands with oak or beech, groves of dead or dying trees, river bottoms, burned areas, recent clearings, beaver swamps, orchards, parks, farmland, grasslands with scattered trees, forest edges, and roadsides. Wherever they breed, trees for nest cavities are an important part of habitat. | May occur. Potentially suitable habitat was observed in the open grassland field areas and forested areas of the project area. |
| Rusty blackbird (*Euphagus carolinus*) | BCC | This species breeds in wet forests, including areas with fens, bogs, muskeg, and beaver ponds. The species relies on water for foraging in shallows and damp ground. | Unlikely to occur. Potentially suitable habitat was not observed in the project area. |
| Short-billed dowitcher (*Limnodromus griseus*) | BCC | This species is opportunistic in choice of habitat, turning up in human-made environments such as impoundments, sewage ponds, and flooded farm fields as well as in muddy margins of rivers, lakes, and bays. | Unlikely to occur. Potentially suitable habitat was not observed in the project area. |

| Common Name (*Scientific Name*) | Status* | Range or Habitat Requirements | Potential for Occurrence in Project Area |
|---|---|---|---|
| Upland sandpiper (*Bartramia longicauda*) | BCC, SE | This species nests in grasslands, pastures, agricultural fields, especially fallow fields, but sometimes hay or other crop fields. Occasionally this species is known to nest in road edges. Minimal woody vegetation and minimal bare ground are prominent features of these grassland habitats. During migration, this species frequents airfields, agricultural fields, and pastures, but migrants can also turn up in unusual places such as on beaches or ballfields, especially when grounded by foul weather. | Unlikely to occur. Limited potentially suitable habitat was observed in the open grassland areas of the project area. |
| Wood thrush (*Hylocichla mustelina*) | BCC | This species breeds throughout mature deciduous and mixed forests in eastern North America, most commonly those with American beech (*Fagus grandifolia),* sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), eastern hemlock (*Tsuga canadensis*), flowering dogwood (*Cronus florida*), American hornbeam (*Ostrya virginiana*), oaks (*Quercus sp.*), or pines (*Pinus sp.*). They nest somewhat less successfully in fragmented forests and even suburban parks where there are enough large trees for a territory. Ideal habitat includes trees over 50 feet tall, a moderate understory of saplings and shrubs, an open floor with moist soil and decaying leaf litter, and water nearby. | May occur. Potentially suitable habitat was observed in the forested areas of the project area. |
| Whooping crane (*Grus americana*) | Nonessential experimental population | Whooping cranes use a variety of habitats during migration, including croplands for feeding and wetlands for roosting (Lingle et al. 1991). The USFWS designated a nonessential experimental population of whooping cranes in the eastern United States with a geographic boundary that includes Illinois (66 FR 33903–33917 [June 26, 2001]). | Unlikely to occur. Potentially suitable habitat was not observed in the project area. |

Sources: Species' range and habitat information is derived from the Cornell Lab All About Birds (Cornell 2023) and USFWS (USFWS 2023c) websites.

* Federal status: FE = Endangered, FT = Threatened, FC = Candidate, BCC = Bird of Conservation Concern; Illinois State status: SE = Endangered, ST = Threatened.

## *3.1.5 Migratory Bird Treaty Act*

The USFWS IPaC report indicated 14 Birds of Conservation Concern (BCC) with potential to occur in the project area (USFWS 2023c) (Table 3). All 14 species are protected under the MBTA. Birds of Conservation Concern are species that are priorities for conservation action associated with ecological Bird Conservation Regions. Designation as a BCC, in itself, does not carry with it regulatory protections. However, BCC species are protected under the MBTA. Under the MBTA, unless permitted by regulations, it is unlawful to 1) pursue, hunt, take, capture, or kill; 2) attempt to take, capture, or kill; and 3) possess, offer to sell, barter, purchase, deliver, or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. USFWS regulations broadly define "take" under the MBTA to mean "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." Under the MBTA, "take" does not include habitat loss or alteration.

## *3.1.6 Bald and Golden Eagle Protection Act*

The USFWS IPaC identified bald eagles as having potential to occur in the project area (USFWS 2023c) (Table 3). Bald eagles (*Haliaeetus leucocephalus*) are protected under both the MBTA and the Bald and Golden Eagle Protection Act. This Act prohibits the take, possession, and transportation of bald and

golden eagles (*Aquila chrysaetos*) or their parts, eggs, or nests without authorization (16 USC 668–688(d)). The USFWS may issue permits to take bald or golden eagles or their nests for certain activities, provided the taking is compatible with the preservation of these species (50 CFR Part 22).

# 3.2 Field Reconnaissance

## *3.2.1 Vegetation*

During the field reconnaissance, the SWCA identified three general vegetative communities within the project area: upland deciduous forest, emergent wetland, and open grassland. The upland forest is dominated by oak (*Quercus spp.*) and hickory (*Carya spp.*) with an open understory. The emergent wetlands are dominated by common reed (*Phragmites australis*) and reed canary grass (*Phalaris arundinacea*). The open grassland is heavily disturbed with species such as goldenrod (*Solidago altissima*), smooth brome (*Bromus inermis*), common reed, and locust (*Robinia sp.*).

Photographs of the vegetation communities within and surrounding the project area are provided in Appendix B.

## *3.2.2 Special-Status Species*

During the field reconnaissance, SWCA incidentally observed red-winged blackbirds (*Agelaius phoeniceus*) and white-tailed deer (*Odocoileus virginianus*). No federally or state-listed species, or other special-status species were observed.

Table 3 describes the special-status species with the potential to occur in Will County, Illinois; their habitat; and their potential to occur in the proposed project area.

The potential for occurrence of a species was identified using the following categories:

- *Known to occur*—the species was documented in the proposed project area either during or prior to the biological survey by a reliable observer.
- *May occur*—the project area is within the species' currently known range, and habitat conditions (e.g., vegetation communities, soils, water quality) resemble those known to be used by the species.
- *Unlikely to occur*—the project area is within the species' currently known range, but habitat conditions (e.g., vegetation communities, soils, water quality) do not resemble those known to be used by the species, or the proposed project area is clearly outside the species' currently known range.

In summary, the following federally and/or state-listed species have potential to occur within the project area (Table 3).

- eastern massasauga rattlesnake (federally threatened; state endangered)
- northern long-eared bat (federally and state endangered)
- black-billed cuckoo (state threatened, BCC)

One federal candidate species, the monarch butterfly, has potential to occur in the project area. Monarch butterflies are designated as a federal candidate species. Candidate species do not receive statutory

protection under the ESA, and neither section 7 nor its implementing regulations contain requirements for federal agencies regarding candidate species. Therefore, this species is not discussed further in this report.

The following BCC species, which are afforded protection under the MBTA, have potential to occur within the project area (Table 3).

- bald eagle (also protected by the BGEPA)
- bobolink
- chimney swift
- red-headed woodpecker
- wood thrush

## 3.3 Information Planning and Consultation Effects Assessment

The USFWS IPaC CPB determined, based on SWCA inputs, that the proposed project may affect, but is not likely to adversely affect the eastern massasauga rattlesnake. The USFWS IPaC also generated a consistency letter for the northern long-eared bat (see Appendix C). The CPB generated a no effect determination for remaining species. SWCA did not include the monarch butterfly or whooping crane in the effects analysis as the VA is not required to include either species in its Section 7 consultation.

# 4 CONCLUSIONS

Best Management Practices (BMPs) related to the special-status species are provided below. The BCC and state-threatened black-billed cuckoo is addressed with migratory birds in Section 4.3.

## 4.1 Eastern Massasauga Rattlesnake

Forested areas located in the southern portion of the project area may provide suitable habitat for the eastern massasauga rattlesnake. To avoid potential impacts to this species, if present, the VA may implement the following BMPs.

- Minimize vegetation (including tree) removal to the extent practical.
- Restrict vegetation removal and disturbance (e.g., burning, mowing) to months when the species is likely to be hibernating (i.e., October to mid-March).
- Operate all vehicles traveling within and around the project area in accordance with posted speed limits. Vehicles should avoid snakes in the road.
- Provide identification and awareness regarding the potential presence of eastern massasauga rattlesnake training to construction personnel.
- Immediately stop construction if an eastern massasauga rattlesnake is observed. Cease activities until proper agency coordination is conducted and agency staff have recommended appropriate next steps.
- Restore disturbed areas with native vegetation following construction. Treat undesirable vegetation as needed during routine facility operation and maintenance.

- Implement standard construction BMPs, including for erosion control.

Eastern massasauga rattlesnakes could potentially occur in the project area. However, potentially suitable habitat is limited to the southern portion of the project area, and implementation of the proposed project including BMPs is expected to result in no effect to the species, if present. Because the eastern massasauga rattlesnake could occur in potentially suitable habitat in the project area, the CPB program determined the project may affect, but is not likely to adversely affect, the species (see Appendix C).

## 4.2 Northern Long-Eared Bat

Potentially suitable northern long-eared bat habitat is present in the forested areas of the project area. To avoid impacts to the species, if present, the VA may implement the following BMPs.

- Limit tree clearing within the to the extent possible.
- Perform limited tree clearing only during the USFWS-designated winter clearing window (October 1 through March 31).

Although northern long-eared bats could potentially occur in the project area, implementation of the proposed project including BMPs is expected to result in no effect to the species, if present. This is consistent with the USFWS IPaC Consistency Letter (see Appendix C).

## 4.3 Migratory Bird Treaty Act

Incidental mortality or displacement of individual birds may occur due to construction disturbance (e.g., vegetation removal, noise). However, mobile (e.g., adults) individuals would be expected to move to adjacent habitats in response to habitat loss or disturbance. To avoid impacts to immobile young and eggs, VA may implement the following BMPs.

- Minimize vegetation removal to the extent practical
- Restrict vegetation removal to the period October 1 through February 28, which is generally outside the migratory bird breeding season
- Where vegetation removal must occur during March 1 through September 31, conduct pre-construction nest surveys up to two weeks prior to vegetation removal to identify any occupied nests. If active nests are located during the surveys, the VA will establish avoidance buffers around occupied nests or construction would not begin until the birds have fledged. Unoccupied nests would be removed by a qualified biologist for the project, in consultation with the USFWS and outside the breeding season. If pre-construction nesting surveys are implemented and construction begins between March 1 and September 30, no eggs, nestlings, or active nests are anticipated to be directly harmed by the proposed project.

No major or long-term or population-level effects on migratory birds are anticipated to result from implementation of the proposed project due to implementation of these BMPs.

## 4.4 Bald and Golden Eagle Protection Act

The project area contains limited suitable habitat for nesting and foraging bald eagles. Adult eagles would not likely be directly harmed by the proposed project because adults are mobile and expected to avoid areas of human disturbance. Although bald eagles could occur in the Project Area, no bald eagle nests were identified within the project area during the field reconnaissance and as such no direct or indirect impacts to the species are anticipated for the Project.

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# APPENDIX A

## Project Maps

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**Figure A.1. Project vicinity map.**

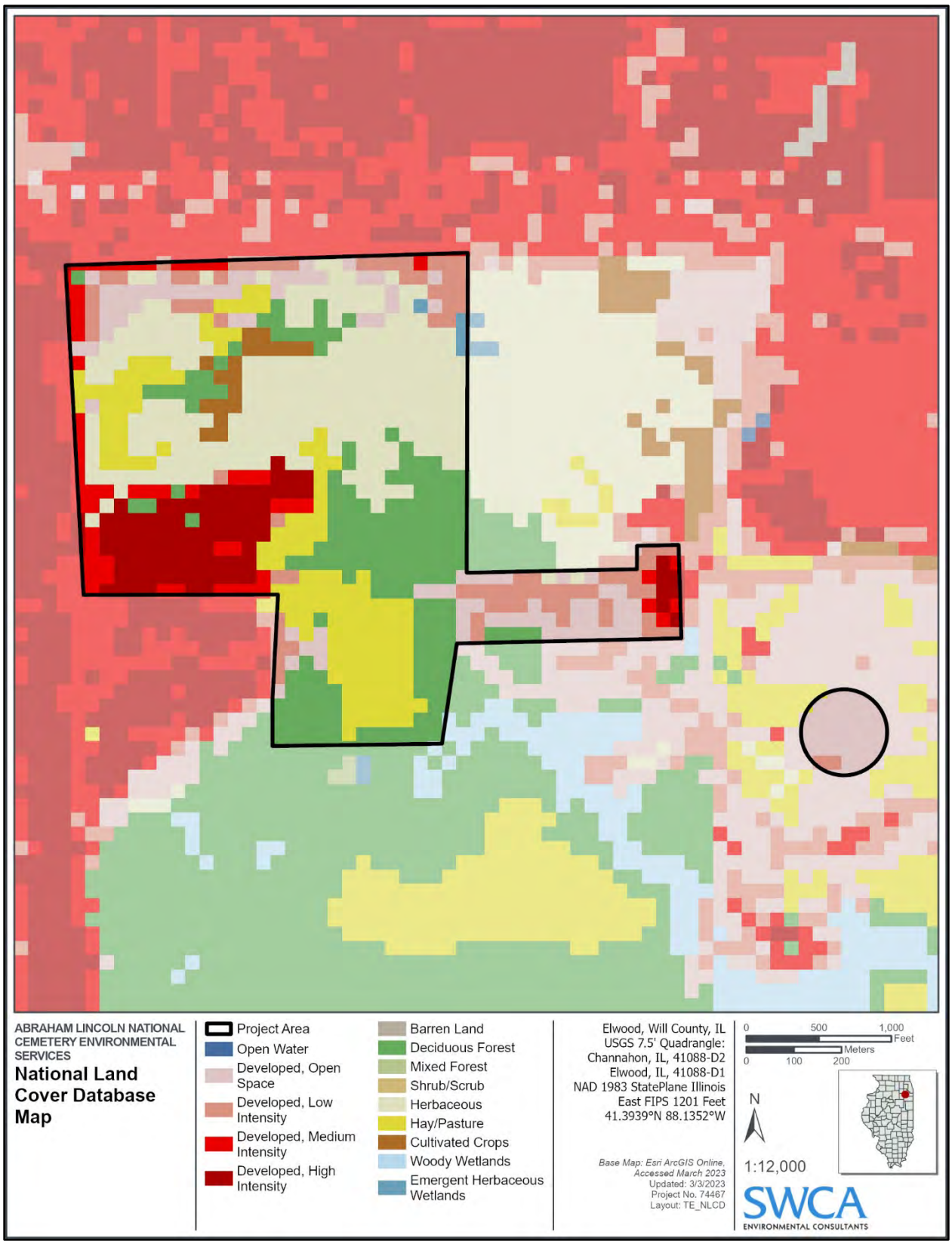


**Figure A.2. National land cover database map of the project area.**

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# APPENDIX B

## Project Photographs

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**Photograph B.1. View of the southeastern parcel in the project area, facing north.**

**Photograph B.2. View of mature oak hickory forest within the project area, facing south.**

**Photograph B.3. View of the southern part of the project area, facing south.**

**Photograph B.4. View of the northern part of the project area, facing west.**

**Photograph B.5. View of snags in a stand of trees that may contain suitable bat habitat in the northern part of the project area, facing north.**

**Photograph B.6. View of the northern part of the project area, facing east.**

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# APPENDIX C

## USFWS IPaC Documentation

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# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
Phone: (312) 485-9337

In Reply Refer To: April 20, 2023
Project Code: 2023-0071050
Project Name: Abraham Lincoln National Cemetery Phase 4 Expansion

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

Additionally, please note that on March 23, 2022, the Service published a proposal to reclassify the northern long-eared bat (NLEB) as endangered under the Endangered Species Act. The U.S. District Court for the District of Columbia has ordered the Service to complete a new final listing

determination for the NLEB by November 2022 (Case 1:15-cv-00477, March 1, 2021). The bat, currently listed as threatened, faces extinction due to the range-wide impacts of white-nose syndrome (WNS), a deadly fungal disease affecting cave-dwelling bats across the continent. The proposed reclassification, if finalized, would remove the current 4(d) rule for the NLEB, as these rules may be applied only to threatened species. Depending on the type of effects a project has on NLEB, the change in the species' status may trigger the need to re-initiate consultation for any actions that are not completed and for which the Federal action agency retains discretion once the new listing determination becomes effective (anticipated to occur by December 30, 2022). If your project may result in incidental take of NLEB after the new listing goes into effect this will first need to addressed in an updated consultation that includes an Incidental Take Statement. If your project may require re-initiation of consultation, please contact our office for additional guidance.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

**Migratory Birds**: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and

recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

# OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Chicago Ecological Service Field Office**
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
(312) 485-9337

# PROJECT SUMMARY

Project Code: 2023-0071050
Project Name: Abraham Lincoln National Cemetery Phase 4 Expansion
Project Type: Government / Municipal (Non-Military) Construction
Project Description: The proposed Undertaking is Phase 4 of an eight-phase Master Plan for the expansion of the existing National Cemetery including the development of additional gravesites and cemetery improvements. Proposed improvements include stormwater management ponds and conveyances, construction of a new maintenance facility, installation of paved access roads, ancillary upgrades to Building 2002, Building 3003, the Administrative Building, and the Columbarium Plaza; and intersection improvements along Illinois Route 53 between West Hoff Road and Walter Strawn Drive/IRA Morgan Street. VA intends to improve the National Cemetery to provide 15 years of additional interment capacity with 47 acres of additional gravesites and columbaria, including 22,800 square feet of funerary niches. The construction period for the Phase 4 expansion is two years with an estimated completion date of May 2026.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.395940350000004,-88.14041006417546,14z

Counties: Will County, Illinois

# ENDANGERED SPECIES ACT SPECIES

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## MAMMALS

| NAME | STATUS |
|---|---|
| Northern Long-eared Bat *Myotis septentrionalis*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/9045 | Endangered |

## BIRDS

| NAME | STATUS |
|---|---|
| Whooping Crane *Grus americana*<br>Population: U.S.A. (AL, AR, CO, FL, GA, ID, IL, IN, IA, KY, LA, MI, MN, MS, MO, NC, NM, OH, SC, TN, UT, VA, WI, WV, western half of WY)<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/758 | Experimental Population, Non-Essential |

## REPTILES

| NAME | STATUS |
|---|---|
| Eastern Massasauga (=rattlesnake) *Sistrurus catenatus*<br>No critical habitat has been designated for this species.<br>Species profile: https://ecos.fws.gov/ecp/species/2202 | Threatened |

## INSECTS

| NAME | STATUS |
|---|---|
| Hine's Emerald Dragonfly *Somatochlora hineana* | Endangered |

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/7877

| | |
|---|---|
| Monarch Butterfly *Danaus plexippus* | Candidate |

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/9743

## FLOWERING PLANTS

| NAME | STATUS |
|---|---|
| Eastern Prairie Fringed Orchid *Platanthera leucophaea* | Threatened |

No critical habitat has been designated for this species.
This species only needs to be considered under the following conditions:

- Follow the guidance provided at https://www.fws.gov/midwest/endangered/section7/s7process/plants/epfos7guide.html

Species profile: https://ecos.fws.gov/ecp/species/601

| | |
|---|---|
| Lakeside Daisy *Hymenoxys herbacea* | Threatened |

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3615

| | |
|---|---|
| Leafy Prairie-clover *Dalea foliosa* | Endangered |

Population:
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5498

## CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

## IPAC USER CONTACT INFORMATION

Agency: SWCA Environmental Consultants
Name: Kely Wabnitz
Address: 200 W 22nd Street Suite 220
City: Lombard
State: IL
Zip: 60148
Email kely.wabnitz@swca.com
Phone: 6145806715

## LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Veterans Affairs

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chicago Ecological Service Field Office
U.s. Fish And Wildlife Service Chicago Ecological Services Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507
Phone: (312) 485-9337

In Reply Refer To: April 20, 2023
Project code: 2023-0071050
Project Name: Abraham Lincoln National Cemetery Phase 4 Expansion

Federal Nexus: yes
Federal Action Agency (if applicable): Department of Veterans Affairs

**Subject:** Record of project representative's no effect determination for 'Abraham Lincoln National Cemetery Phase 4 Expansion'

Dear Kely Wabnitz:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on April 20, 2023, for 'Abraham Lincoln National Cemetery Phase 4 Expansion' (here forward, Project). This project has been assigned Project Code 2023-0071050 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

**Ensuring Accurate Determinations When Using IPaC**

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into the IPaC must accurately represent the full scope and details of the Project. Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter.

**Determination for the Northern Long-Eared Bat**

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action

and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

**Other Species and Critical Habitat that May be Present in the Action Area**

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Eastern Massasauga (=rattlesnake) *Sistrurus catenatus* Threatened
- Eastern Prairie Fringed Orchid *Platanthera leucophaea* Threatened
- Hine's Emerald Dragonfly *Somatochlora hineana* Endangered
- Lakeside Daisy *Hymenoxys herbacea* Threatened
- Leafy Prairie-clover *Dalea foliosa* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Whooping Crane *Grus americana* Experimental Population, Non-Essential

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

**Next Steps**

Based upon your IPaC submission, your project has reached the determination of “No Effect” on the northern long-eared bat. If there are no updates on listed species, no further consultation/ coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the Chicago Ecological Service Field Office and reference Project Code 2023-0071050 associated with this Project.

**Action Description**
You provided to IPaC the following name and description for the subject Action.

**1. Name**

Abraham Lincoln National Cemetery Phase 4 Expansion

**2. Description**

The following description was provided for the project 'Abraham Lincoln National Cemetery Phase 4 Expansion':

> The proposed Undertaking is Phase 4 of an eight-phase Master Plan for the expansion of the existing National Cemetery including the development of additional gravesites and cemetery improvements. Proposed improvements include stormwater management ponds and conveyances, construction of a new maintenance facility, installation of paved access roads, ancillary upgrades to Building 2002, Building 3003, the Administrative Building, and the Columbarium Plaza; and intersection improvements along Illinois Route 53 between West Hoff Road and Walter Strawn Drive/IRA Morgan Street. VA intends to improve the National Cemetery to provide 15 years of additional interment capacity with 47 acres of additional gravesites and columbaria, including 22,800 square feet of funerary niches. The construction period for the Phase 4 expansion is two years with an estimated completion date of May 2026.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@41.395940350000004,-88.14041006417546,14z

# DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (Myotis septentrionalis). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

## QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   **Note:** Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   *No*

2. Do you have post-white nose syndrome occurrence data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed acoustic detections. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   *No*

3. Does any component of the action involve construction or operation of wind turbines?

   **Note:** For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   *No*

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   *Yes*

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   *No*

6. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   **Note:** This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   *No*

7. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   *No*

8. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

   If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

   **Note:** Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

   *Yes*

# PROJECT QUESTIONNAIRE

Will all project activities by completed by April 1, 2024?

*No*

# IPAC USER CONTACT INFORMATION

Agency: SWCA Environmental Consultants
Name: Kely Wabnitz
Address: 200 W 22nd Street Suite 220
City: Lombard
State: IL
Zip: 60148
Email kely.wabnitz@swca.com
Phone: 6145806715

# LEAD AGENCY CONTACT INFORMATION

Lead Agency: Department of Veterans Affairs

# ABRAHAM LINCOLN NATIONAL CEMETERY PHASE 4 EXPANSION

## BIOLOGICAL ANALYSIS

Prepared using IPaC

Generated by Kely Wabnitz (kely.wabnitz@swca.com)

April 24, 2023

The purpose of this document is to assess the effects of the proposed project and determine whether the project may affect any federally threatened, endangered, proposed, or candidate species. If appropriate for the project, this document may be used as a biological assessment (BA), as it is prepared in accordance with legal requirements set forth under Section 7 of the Endangered Species Act (16 U.S.C. 1536 (c)).

In this document, any data provided by U.S. Fish and Wildlife Service is based on data as of April 21, 2023.

Prepared using IPaC version 6.90.0-rc5

# ABRAHAM LINCOLN NATIONAL CEMETERY PHASE 4 EXPANSION BIOLOGICAL ASSESSMENT

## TABLE OF CONTENTS

# 1 DESCRIPTION OF THE ACTION

## 1.1 PROJECT NAME

Abraham Lincoln National Cemetery Phase 4 Expansion

## 1.2 EXECUTIVE SUMMARY

The Department of Veterans Affairs (VA) proposes to develop Phase 4 of the Abraham Lincoln National Cemetery (ALNC). Phase 4 is part of an 8 phase Master Plan for the expansion of the ALNC, including the development of additional gravesites and cemetery improvements. Proposed improvements include stormwater management ponds and conveyances, construction of a new maintenance facility, installation of paved access roads, ancillary upgrades to Building 2002, Building 3003, the Administrative Building, and the Columbarium Plaza; and intersection improvements along Illinois Route 53 between West Hoff Road and Walter Strawn Drive/IRA Morgan Street. The VA intends to improve the ALNC to provide 15 years of additional interment capacity with 47 acres of additional gravesites and columbaria, including 22,800 square feet of funerary niches. Phase 4 construction is expected to take two years with an estimated completion date of May 2026. The VA has determined that the proposed action is not likely to adversely affect the eastern massasauga rattlesnake.

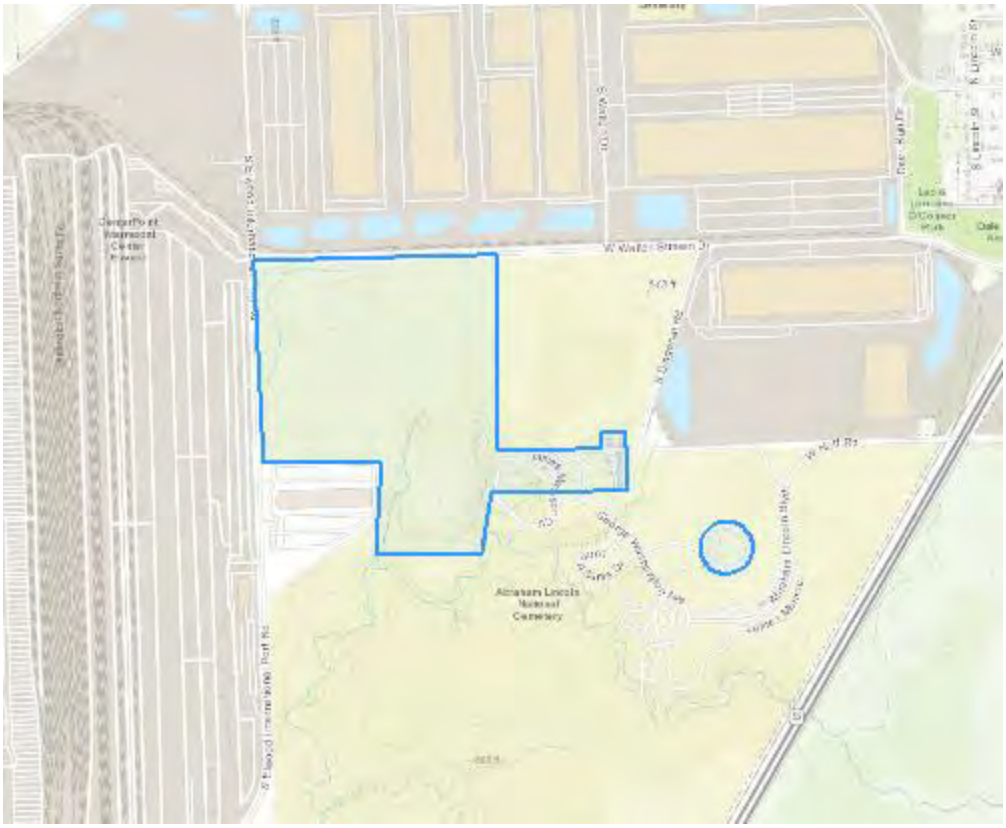
## 1.3 EFFECT DETERMINATION SUMMARY

| SPECIES (COMMON NAME) | SCIENTIFIC NAME | LISTING STATUS | PRESENT IN ACTION AREA | EFFECT DETERMINATION |
|---|---|---|---|---|
| Eastern Massasauga (=rattlesnake) | Sistrurus catenatus | Threatened | Yes | NLAA |
| Eastern Prairie Fringed Orchid | Platanthera leucophaea | Threatened | No | NE |
| Hine's Emerald Dragonfly | Somatochlora hineana | Endangered | No | NE |
| Lakeside Daisy | Hymenoxys herbacea | Threatened | No | NE |
| Leafy Prairie-clover | Dalea foliosa | Endangered | No | NE |
| Monarch Butterfly | Danaus plexippus | Candidate | Excluded from analysis | Excluded from analysis |
| Northern Long-eared Bat† **. This species or critical habitat is covered by a DKey.** | Myotis septentrionalis | Endangered | | NE |
| Whooping Crane | Grus americana | Experimental Population, Non-Essential | Excluded from analysis | Excluded from analysis |

† This species or critical habitat is covered by a DKey.

# 1.4 PROJECT DESCRIPTION

## 1.4.1 LOCATION



**LOCATION**
Will County, Illinois

## 1.4.2 DESCRIPTION OF PROJECT HABITAT

36.3% developed (open space and high, med, low intensity); 27.5% - herbaceous; 19.1% deciduous forest; 14.8% hay/pasture; 2.0% cultivated crops; less than 1% each emergent herbaceous wetland and woody wetland.

## 1.4.3 PROJECT PROPONENT INFORMATION

*Provide information regarding who is proposing to conduct the project, and their contact information. Please provide details on whether there is a Federal nexus.*

**REQUESTING AGENCY**
SWCA Environmental Consultants

**FULL NAME**
Kely Wabnitz

**STREET ADDRESS**
200 W 22nd Street Suite 220

| CITY | STATE | ZIP |
|---|---|---|
| Lombard | IL | 60148 |

| PHONE NUMBER | E-MAIL ADDRESS |
|---|---|
| 6145806715 | kely.wabnitz@swca.com |

**LEAD AGENCY**
Department of Veterans Affairs

## 1.4.4 PROJECT PURPOSE

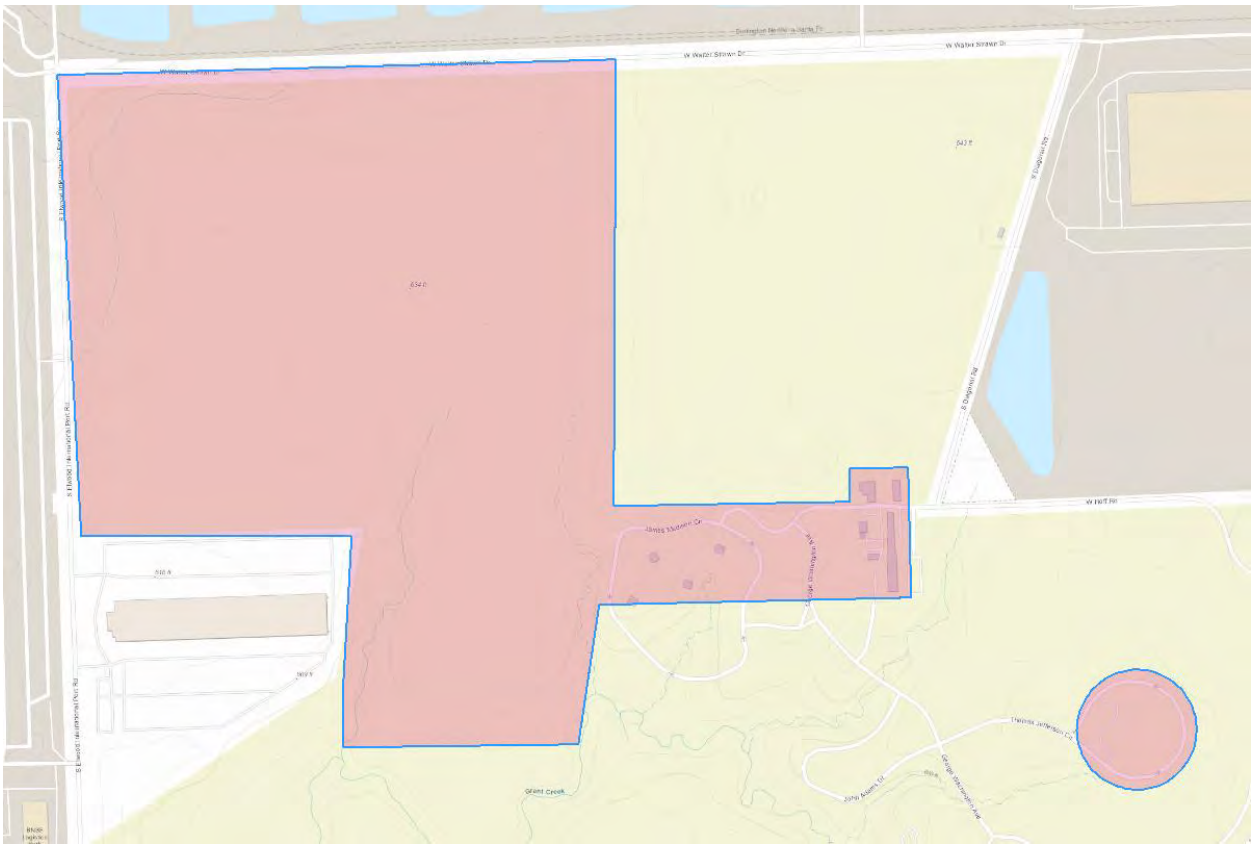
The VA intends to improve the National Cemetery to provide 15 years of additional interment capacity with 47 acres of additional gravesites and columbaria, including 22,800 square feet of funerary niches.

The proposed project includes development/construction of additional gravesites and cemetery improvements; stormwater management ponds and conveyances; a new maintenance facility; installation of paved access roads; ancillary upgrades to Building 2002, Building 3003, the Administrative Building, and the Columbarium Plaza; and intersection improvements along Illinois Route 53 between West Hoff Road and Walter Strawn Drive/IRA Morgan Street.

## 1.4.5 PROJECT TYPE AND DECONSTRUCTION

This project is a road construction, residential, commercial and industrial development project.

### 1.4.5.1 PROJECT MAP



**LEGEND**

Project footprint

Layer 1: Access road construction, apply road surface layer, construct building, finish grading, improve stormwater runoff quality, in-ground utilities construction, landscaping/restoration, maintain access road, minimize erosion from disturbed areas, outdoor permanent lighting installation, prepare the project site (terrestrial), rough grading, staging area construction, stormwater drainage systems construction, use portable lighting equipment, road (structure), sidewalk/bike path (structure)

#### 1.4.5.2 ROAD

**STRUCTURE COMPLETION DATE**
January 01, 2025

**REMOVAL/DECOMMISSION DATE (IF APPLICABLE)**
December 31, 2027

**STRESSORS**

- Decrease in vegetation
- Increase in impervious surfaces
- Increase in soil density
- Increase in vehicle traffic

**DESCRIPTION**
Exact location and dimensions not yet known and pending design. Standard construction activities (e.g., grading) and Best Management Practices (BMPs) (re: erosion, runoff) will apply. Minimal increase in vehicular traffic and use following construction.

#### 1.4.5.3 SIDEWALK/BIKE PATH

**STRUCTURE COMPLETION DATE**
January 01, 2025

**REMOVAL/DECOMMISSION DATE (IF APPLICABLE)**
December 31, 2027

**STRESSORS**

- Decrease in vegetation
- Increase in impervious surfaces
- Increase in human presence

**DESCRIPTION**
Sidewalk(s) *may* be constructed. Exact location and dimensions not yet known and pending design. Standard construction activities (e.g., grading, leveling, adding impervious surface). Potential for minimal increase in presence for cemetery visitors and facility personnel.

### 1.4.5.4 ACCESS ROAD CONSTRUCTION

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**

- Decrease in vegetation
- Increase in vehicle traffic

**DESCRIPTION**
Exact location and dimensions are not yet known and pending project design. Standard construction activities (e.g., grading, leveling) and BMPs (re: erosion) will apply. Access roads would be restored to match adjacent and improved land conditions (e.g., grading) following construction.

### 1.4.5.5 APPLY ROAD SURFACE LAYER

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**

- Increase in impervious surfaces

**DESCRIPTION**
Exact locations, quantity, and dimensions of roads are not yet known and pending project design. Decrease in vegetation and increase in soil density addressed under "Roads."

### 1.4.5.6 CONSTRUCT BUILDING

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**

- Decrease in vegetation
- Increase in impervious surfaces
- Increase in soil density
- Increase in human presence
- Increase in vehicle traffic

**DESCRIPTION**
A new maintenance facility will be added. The exact dimensions and location are not known and are pending project design.

### 1.4.5.7 FINISH GRADING

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
This activity is not expected to have any impact on the environment.

**DESCRIPTION**
Specific grading information is not yet available regarding location and is pending project design. Standard construction BMPs will be implemented throughout Project construction. Note that potential stressors such as temporary soil compaction are addressed through either other activities (e.g., access road construction) or through implementation of BMPs to decompact soils prior to restoring distrubed areas with native vegetation.

### 1.4.5.8 IMPROVE STORMWATER RUNOFF QUALITY

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
This activity is not expected to have any impact on the environment.

**DESCRIPTION**
Standard construction BMPs will be implemented throughout Project construction. BMPs will include measures to avoid and manage erosion and runoff. Additionally, the VA will adhere to all applicable permits and plans, including the SWPPP and SPCC plan.

### 1.4.5.9 IN-GROUND UTILITIES CONSTRUCTION

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
This activity is not expected to have any impact on the environment.

**DESCRIPTION**
In-ground utilities construction will be very limited, and areas will be restored following installation. Disturbance will occur when eastern massasauga rattlesnakes, if present, are hibernating. Further, the VA will provide identification and awareness training regarding the potential presence of eastern massasauga rattlesnakes to construction personnel. Construction will stop immediately if an eastern massasauga rattlesnake is observed. Activities will cease until proper agency coordination is conducted and agency staff have recommended appropriate next steps.

### 1.4.5.10 LANDSCAPING/RESTORATION

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
- Increase in trees

**DESCRIPTION**
Final landscaping and restoration activities are not yet defined and depend on project design. Restoration activities will consider the potential, considered relatively low, of eastern massasauga rattlesnakes to occur in the action area regarding seasonal timing, species planted, etc. Standard BMPs will be implemented during all restoration activities.

### 1.4.5.11 MAINTAIN ACCESS ROAD

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
This activity is not expected to have any impact on the environment.

**DESCRIPTION**
Although the scope and magnitude of access road maintenance is not yet known, maintenance is not anticipated to result in any additional stressors on top of "access road construction" or "road." Vehicles and equipment will use access roads intermittently. However, aforementioned conservation measures will apply (e.g., education and awareness, posted speed limits, seasonal restrictions).

### 1.4.5.12 MINIMIZE EROSION FROM DISTURBED AREAS

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
This activity is not expected to have any impact on the environment.

**DESCRIPTION**
Although the scope, magnitude, and exact location of construction is not yet known, the VA will implement standard construction BMPs to avoid the potential for erosion.

### 1.4.5.13 OUTDOOR PERMANENT LIGHTING INSTALLATION

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
This activity is not expected to have any impact on the environment.

**DESCRIPTION**
Outdoor lighting may be associated with construction of the new maintenance facility. However, lighting will be downward-facing and will not result in introduction of substantial ambient light to an otherwise dark space as the action area and surrounding parcels currently include light sources.

### 1.4.5.14 PREPARE THE PROJECT SITE (TERRESTRIAL)

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**

- Decrease in vegetation
- Increase in non-native vegetation
- Increase in soil density

**DESCRIPTION**
The exact scope, magnitude, and exact locations for site preparation are not known at this time and are pending project design. However, all stressors listed as "May Occur" under this activity are already addressed under other activities.

### 1.4.5.15 ROUGH GRADING

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
This activity is not expected to have any impact on the environment.

**DESCRIPTION**
Specific grading information is not yet available regarding location and is pending project design. Standard construction BMPs will be implemented throughout Project construction. Further, stressors associated with rough grading are considered under "prepare the project site (terrestrial)."

### 1.4.5.16 STAGING AREA CONSTRUCTION

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**

- Decrease in vegetation
- Increase in non-native vegetation
- Increase in soil density
- Increase in human presence
- Increase in vehicle traffic

**DESCRIPTION**
Specific information regarding temporary staging areas is not yet available regarding location and is pending project design. Standard construction BMPs will be implemented throughout Project construction. Staging areas will be reclaimed and restored following completion of Project construction.

### 1.4.5.17 STORMWATER DRAINAGE SYSTEMS CONSTRUCTION

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**

- Decrease in vegetation
- Increase in non-native vegetation
- Increase in soil density

**DESCRIPTION**
The exact size, placement, and design of stormwater basins is pending project design.

#### 1.4.5.18 USE PORTABLE LIGHTING EQUIPMENT

**ACTIVITY START DATE**
January 01, 2025

**ACTIVITY END DATE**
December 31, 2027

**STRESSORS**
This activity is not expected to have any impact on the environment.

**DESCRIPTION**
Nighttime construction will be limited, and the temporary use of portable lighting equipment will not introduce light into an otherwise dark space as the action area and surrounding parcels include various light sources.

## 1.4.6 ANTICIPATED ENVIRONMENTAL STRESSORS

*Describe the anticipated effects of your proposed project on the aspects of the land, air and water that will occur due to the activities above. These should be based on the activity deconstructions done in the previous section and will be used to inform the action area.*

### 1.4.6.1 ANIMAL FEATURES

Individuals from the Animalia kingdom, such as raptors, mollusks, and fish. This feature also includes byproducts and remains of animals (e.g., carrion, feathers, scat, etc.), and animal-related structures (e.g., dens, nests, hibernacula, etc.).

### 1.4.6.2 PLANT FEATURES

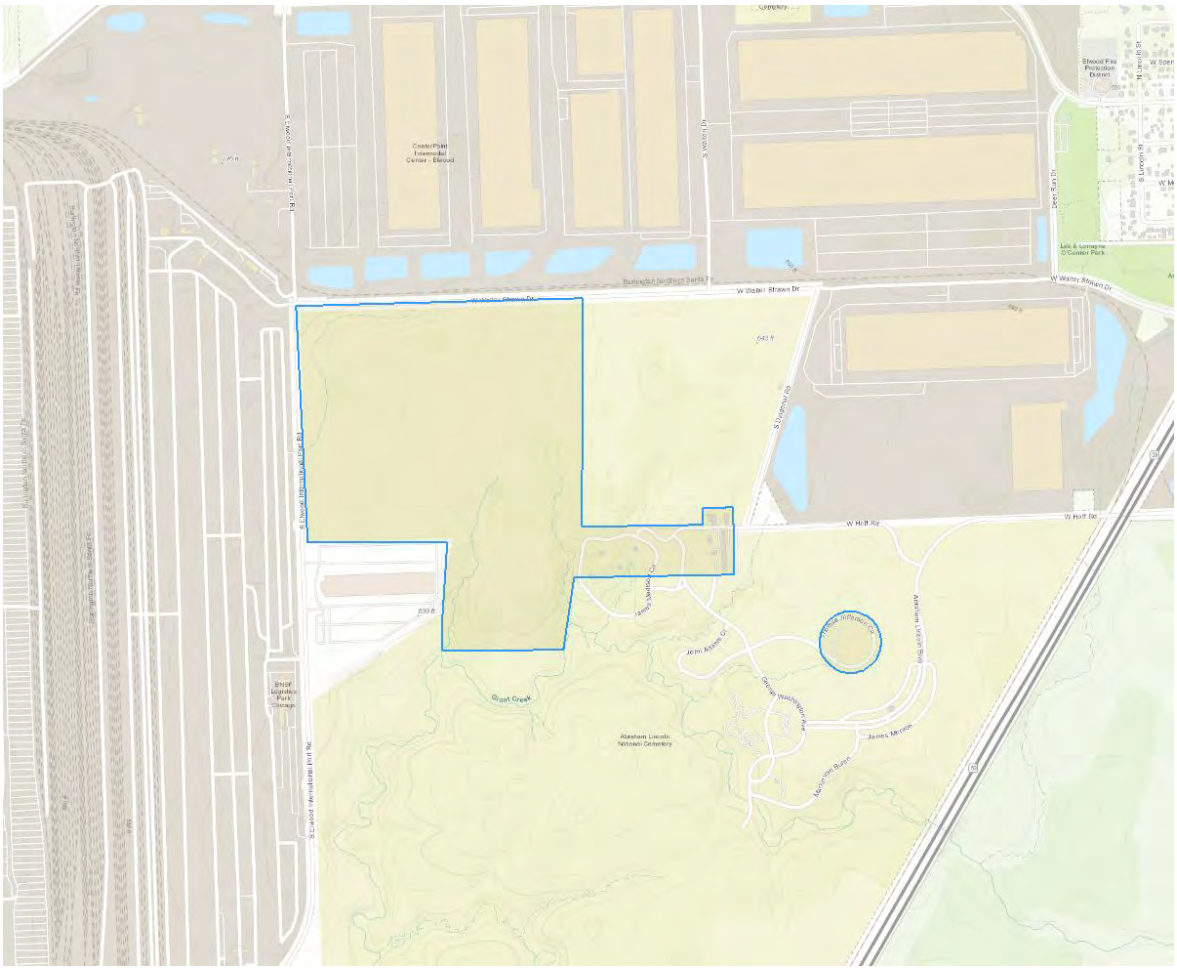
Individuals from the Plantae kingdom, such as trees, shrubs, herbs, grasses, ferns, and mosses. This feature also includes products of plants (e.g., nectar, flowers, seeds, etc.).

### 1.4.6.2.1 DECREASE IN VEGETATION

**ANTICIPATED MAGNITUDE**

Exact quantities are unknown and pending project design.

**STRESSOR LOCATION**



**LEGEND**

Project footprint

Stressor location

#### CONSERVATION MEASURES

- Maximize use of lands already disturbed.
- Minimize tree clearing.
- Restore the action area using native species. conduct targeted removal of non-native species as needed.

#### STRUCTURES AND ACTIVITIES

- Construct building
- Prepare the project site (terrestrial)
- Road
- Access road construction
- Stormwater drainage systems construction
- Sidewalk/bike path
- Staging area construction

### 1.4.6.2.2 INCREASE IN NON-NATIVE VEGETATION

#### ANTICIPATED MAGNITUDE

This stressor is not expected to occur; the following explanation has been provided:

The VA anticipates no measurable increase in the presence of non-native vegetation over baseline conditions due to conservation measures and implementation of standard construction BMPs and vegetation management during operation and maintenance.

#### CONSERVATION MEASURES

- Restore the action area using native species. conduct targeted removal of non-native species as needed.
- Wash equipment to prevent introducing non-native vegetation to the action area.

#### STRUCTURES AND ACTIVITIES

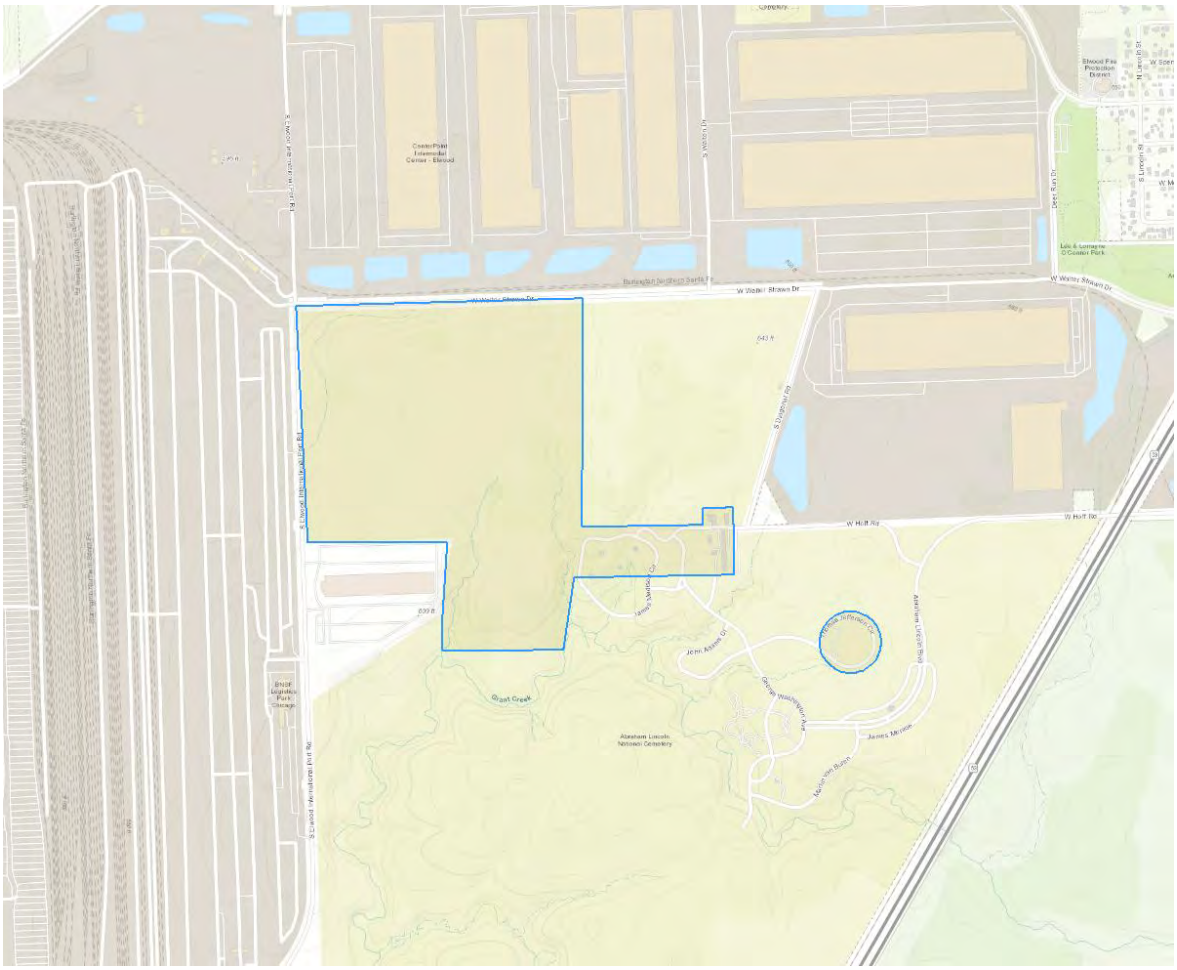
- Prepare the project site (terrestrial)
- Stormwater drainage systems construction
- Staging area construction

### 1.4.6.2.3 INCREASE IN TREES

**ANTICIPATED MAGNITUDE**

A very limited number of trees may be added near developed areas as landscaping.

**STRESSOR LOCATION**



**LEGEND**

Project footprint

Stressor location

**CONSERVATION MEASURES**

*No conservation measures for this stressor*

**STRUCTURES AND ACTIVITIES**

- Landscaping/restoration

### 1.4.6.3 AQUATIC FEATURES

Bodies of water on the landscape, such as streams, rivers, ponds, wetlands, etc., and their physical characteristics (e.g., depth, current, etc.). This feature includes the groundwater and its characteristics. Water quality attributes (e.g., turbidity, pH, temperature, DO, nutrients, etc.) should be placed in the Environmental Quality Features.

### 1.4.6.4 LANDFORM (TOPOGRAPHIC) FEATURES

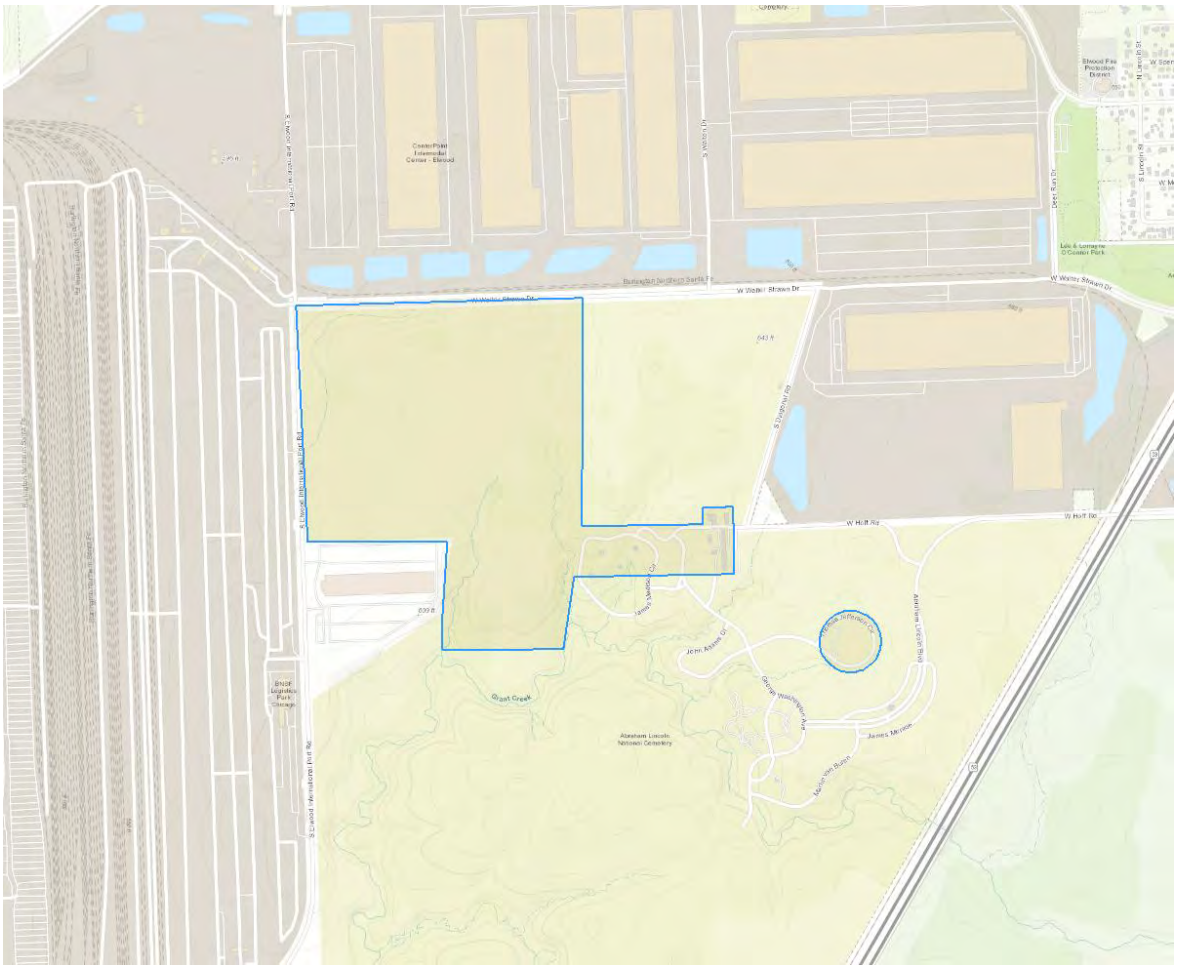
Topographic (landform) features that typically occur naturally on the landscape (e.g., cliffs, terraces, ridges, etc.). This feature does not include aquatic landscape features or man-made structures.

### 1.4.6.4.1 INCREASE IN IMPERVIOUS SURFACES

**ANTICIPATED MAGNITUDE**

Exact dimensions of project facilities are not yet known and are pending final design. However, the VA will minimize facility footprints, including those that include impervious surfaces, to only that required to fulfill the proposed action's purpose and need.

**STRESSOR LOCATION**



**LEGEND**

Project footprint

Stressor location

**CONSERVATION MEASURES**

- Minimize project facility footprints.

**STRUCTURES AND ACTIVITIES**

- Construct building
- Road
- Apply road surface layer
- Sidewalk/bike path

### 1.4.6.5 SOIL AND SEDIMENT

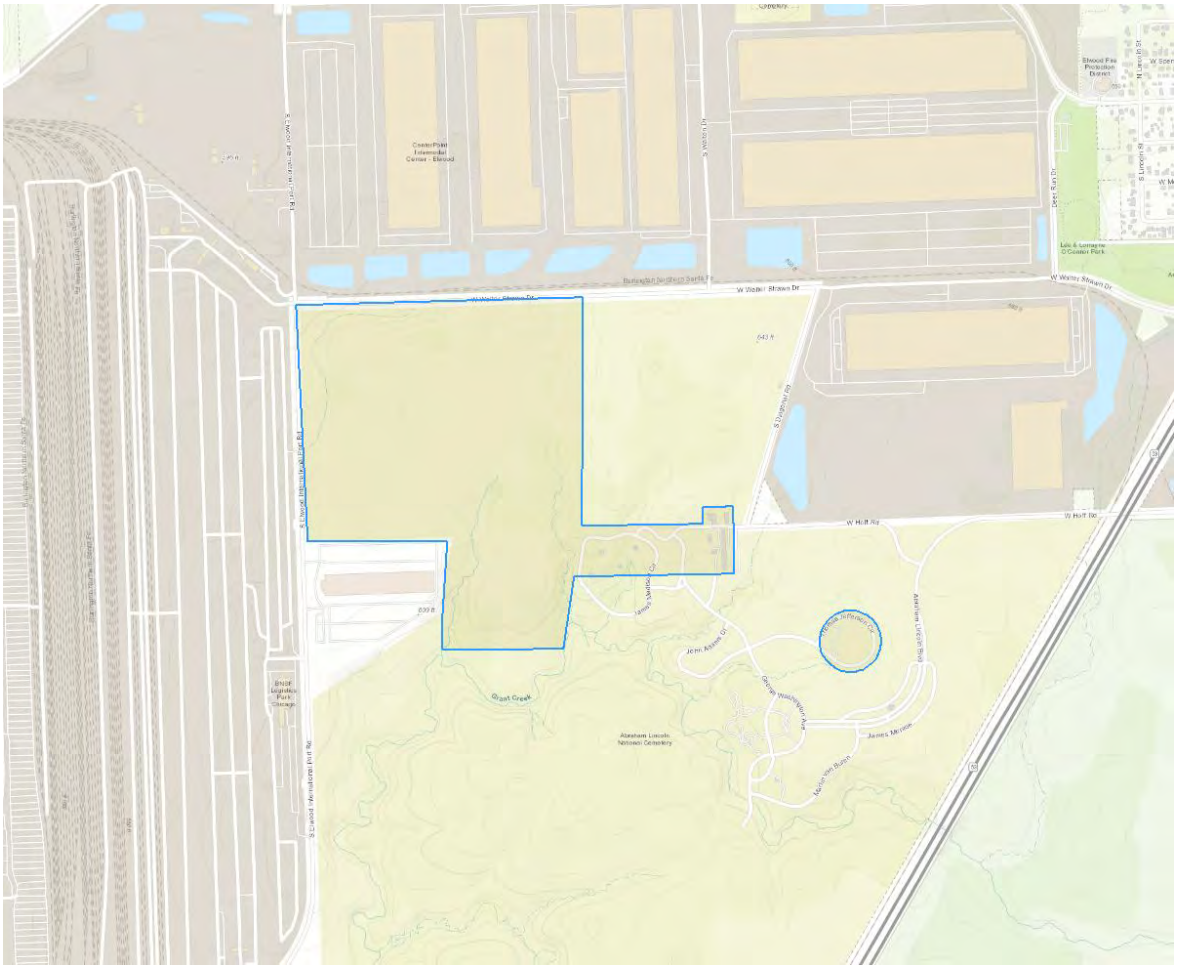
The topmost layer of earth on the landscape and its components (e.g., rock, sand, gravel, silt, etc.). This feature includes the physical characteristics of soil, such as depth, compaction, etc. Soil quality attributes (e.g, temperature, pH, etc.) should be placed in the Environmental Quality Features.

### 1.4.6.5.1 INCREASE IN SOIL DENSITY

**ANTICIPATED MAGNITUDE**

This potential stressor is not avoided in entirety but has been minimized through the use of conservation measures. In temporarily disturbed areas, soils will be decompacted and revegetated using native seed mixes.

**STRESSOR LOCATION**



**LEGEND**

Project footprint

Stressor location

**CONSERVATION MEASURES**

*No conservation measures for this stressor*

**STRUCTURES AND ACTIVITIES**

- Construct building
- Prepare the project site (terrestrial)
- Road
- Stormwater drainage systems construction
- Staging area construction

### 1.4.6.6 ENVIRONMENTAL PROCESSES

Abiotic processes that occur in the natural environment (e.g., erosion, precipitation, flood frequency, photoperiod, etc.).

### 1.4.6.7 HUMAN ACTIVITIES

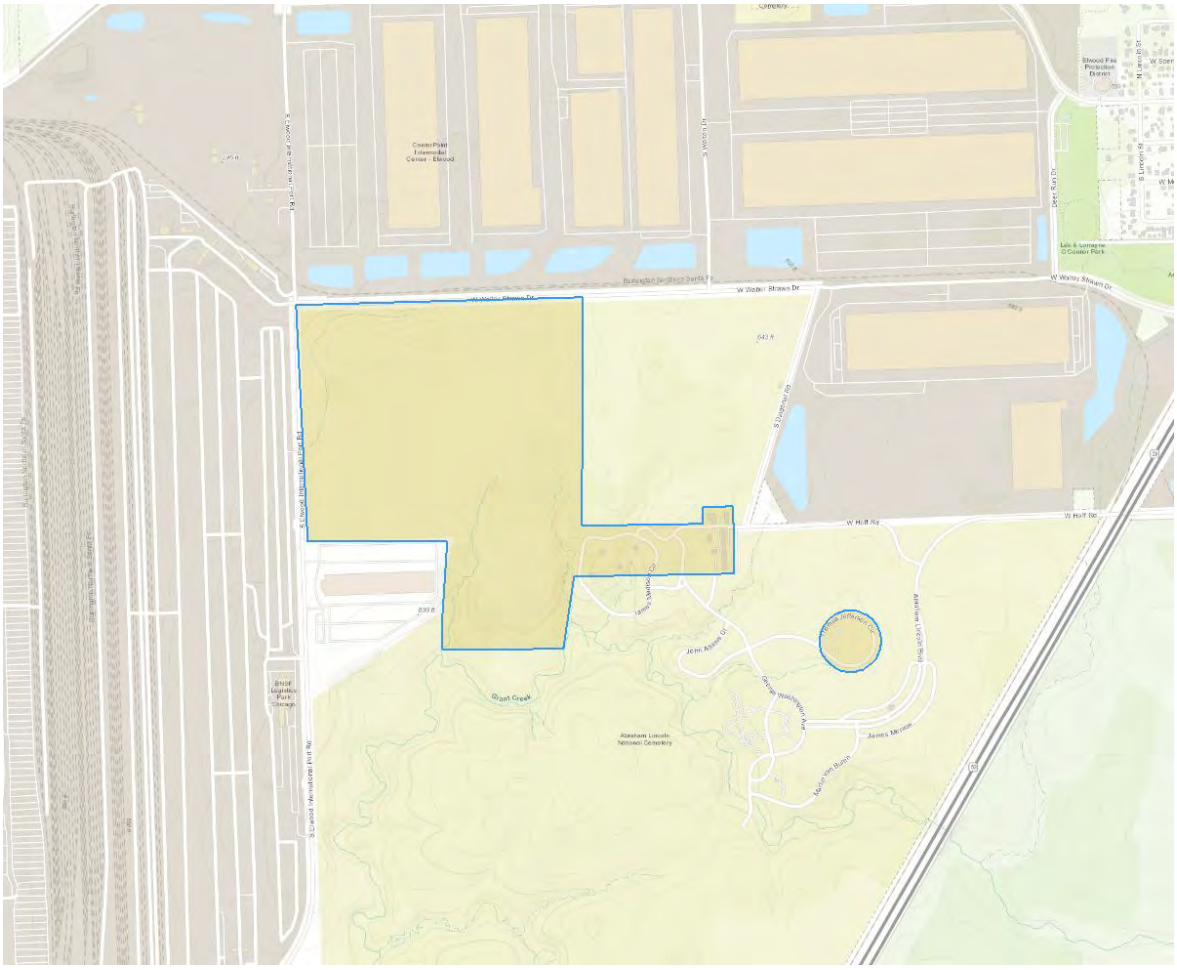
Human actions in the environment (e.g., fishing, hunting, farming, walking, etc.).

### 1.4.6.7.1 INCREASE IN HUMAN PRESENCE

**ANTICIPATED MAGNITUDE**

Minimal increase will occur and will be attributed to potential increase in visitors to the cemetery. Human presence is anticipated to be passive.

**STRESSOR LOCATION**



**LEGEND**

Project footprint

Stressor location

**CONSERVATION MEASURES**

*No conservation measures for this stressor*

**STRUCTURES AND ACTIVITIES**

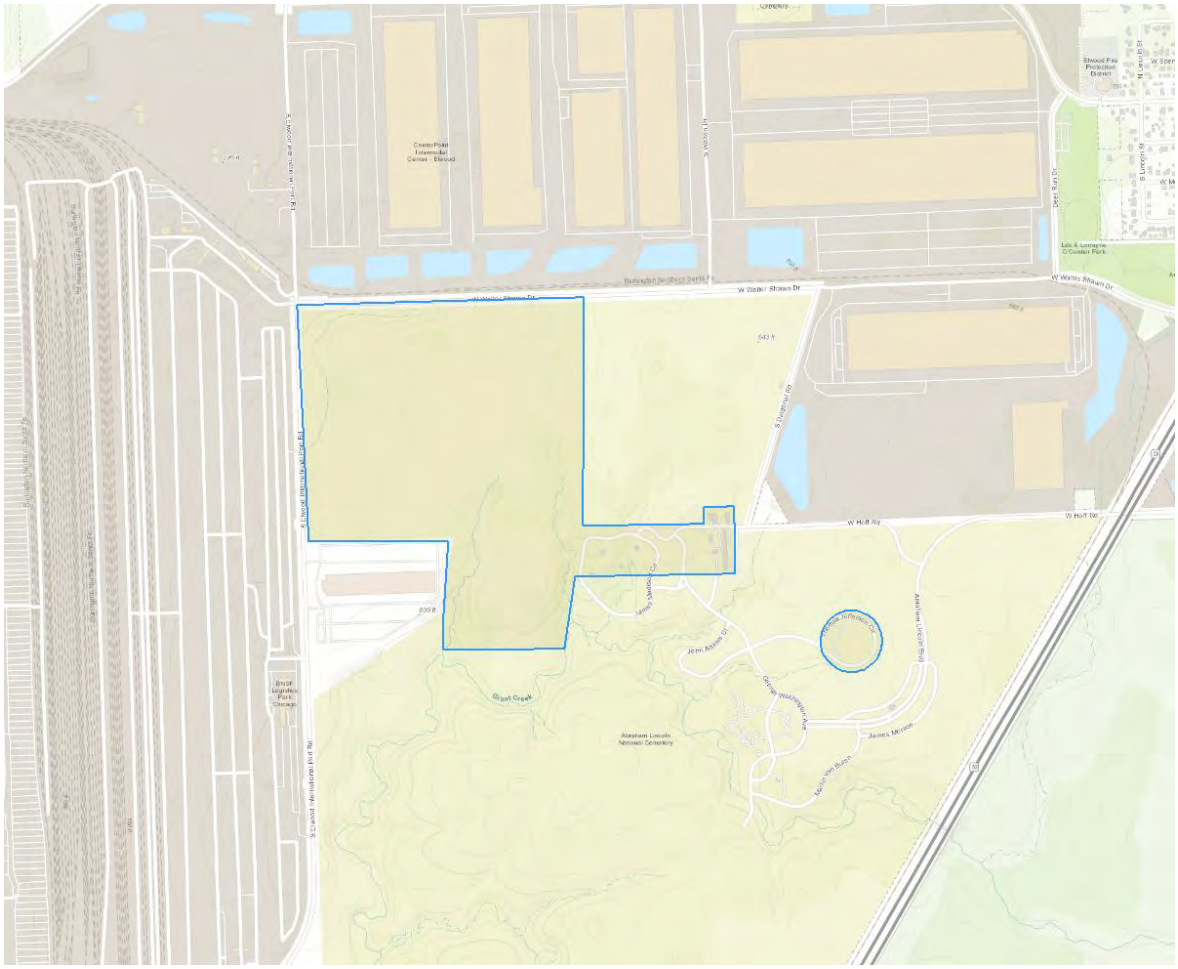
- Construct building
- Sidewalk/bike path
- Staging area construction

### 1.4.6.7.2 INCREASE IN VEHICLE TRAFFIC

#### ANTICIPATED MAGNITUDE

The exact increase in vehicle traffic has not been determined. The increase in traffic will be temporary during construction and intermittent following construction (attributed to facility personnel and users).

#### STRESSOR LOCATION



#### LEGEND

Project footprint

Stressor location

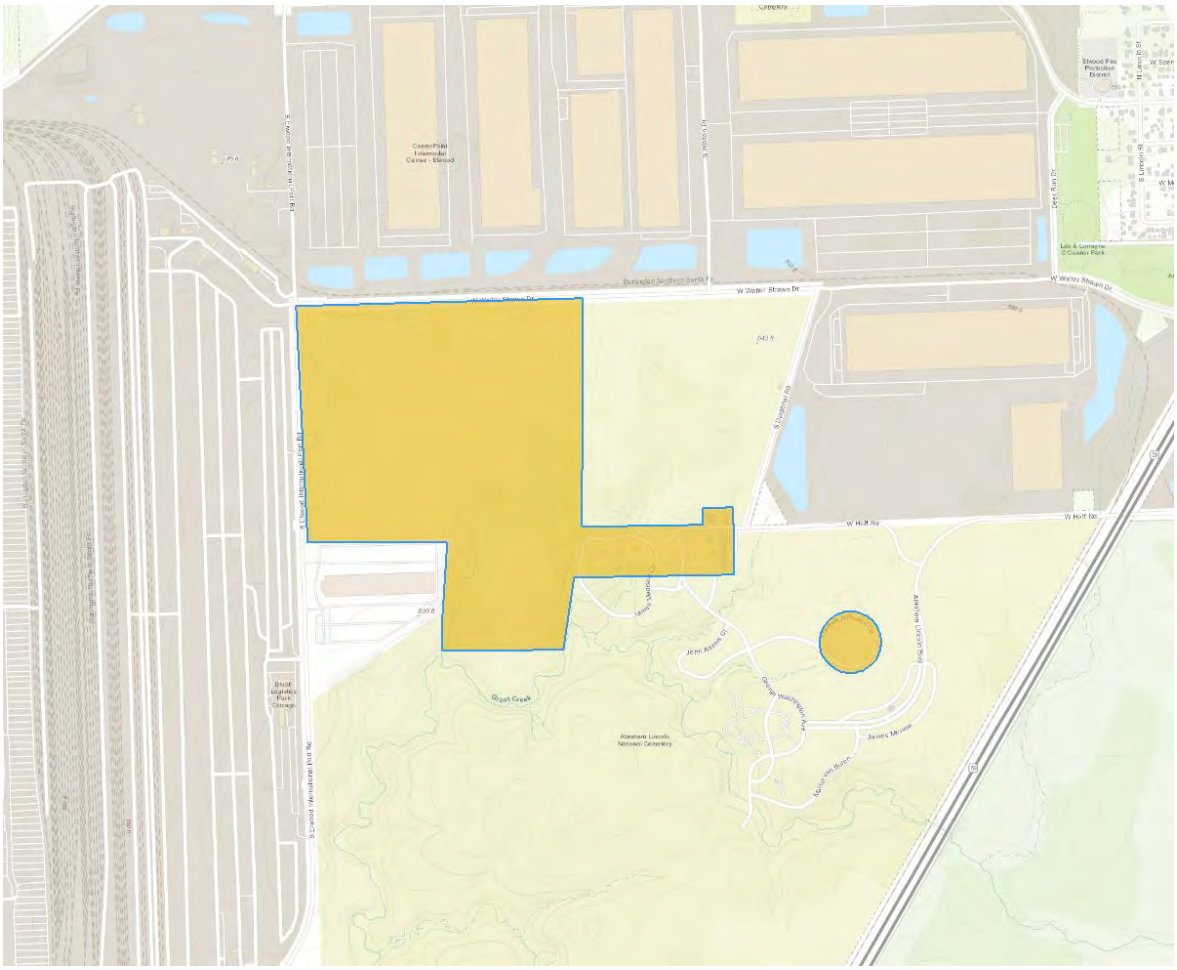
**CONSERVATION MEASURES**

*No conservation measures for this stressor*

**STRUCTURES AND ACTIVITIES**

- Construct building
- Road
- Access road construction
- Staging area construction

# 1.5 ACTION AREA



**LEGEND**

Project footprint

Stressor location

# 1.6 CONSERVATION MEASURES

## 1.6.1 IMPLEMENT STANDARD CONSTRUCTION BMPS AND ADHERE TO ALL APPLICABLE PERMITS AND PLANS, INCLUDING THE SWPPP AND SPCC PLAN.

### DESCRIPTION

During construction, the VA will implement standard construction BMPs and adhere to all applicable permits and plans, including the SWPPP and SPCC plan. Following construction and during restoration of temporarily disturbed areas, the VA will implement applicable BMPs such as erosion control, as needed.

### RESOURCE NEEDS

- hibernacula (location: soft, saturated soils below frost line within emergent, scrub shrub or forested wetlands, proximity to water: hibernacula need to reach the water table for suitable brumation conditions to be met, type: crayfish burrows, and type: root structure and tunnel systems)
- riparian vegetation (size: shrub to sapling and type: riparian woodlands with open meadows or clearings)
- structure (type: rocks, vegetation, burrows, human structures, organic and inorganic debris)
- upland areas (type: structurally complex)
- vertebrates (type: diet consisting of vertebrate species that varies by location)
- wetland (type: emergent wetlands, fens, marshes and wet meadows)

## 1.6.2 MAXIMIZE USE OF LANDS ALREADY DISTURBED.

### DESCRIPTION

During project design, the VA will maximize opportunities to site and construct facilities on disturbed lands.

### STRESSORS

- Decrease in vegetation

### RESOURCE NEEDS

- canopy cover (type: low and type: open)
- hibernacula (location: soft, saturated soils below frost line within emergent, scrub shrub or forested wetlands, proximity to water: hibernacula need to reach the water table for suitable brumation conditions to be met, type: crayfish burrows, and type: root structure and tunnel systems)
- riparian vegetation (size: shrub to sapling and type: riparian woodlands with open meadows or clearings)
- structure (type: rocks, vegetation, burrows, human structures, organic and inorganic debris)
- upland areas (type: structurally complex)
- vertebrates (type: diet consisting of vertebrate species that varies by location)
- wetland (type: emergent wetlands, fens, marshes and wet meadows)

## 1.6.3 MINIMIZE PROJECT FACILITY FOOTPRINTS.

### DESCRIPTION

The VA will constrain project facility footprints to only that necessary to meet regulatory requirements as applicable and to support the ALNC mission and purpose.

### STRESSORS

- Increase in impervious surfaces

### RESOURCE NEEDS

- hibernacula (location: soft, saturated soils below frost line within emergent, scrub shrub or forested wetlands, proximity to water: hibernacula need to reach the water table for suitable brumation conditions to be met, type: crayfish burrows, and type: root structure and tunnel systems)
- riparian vegetation (size: shrub to sapling and type: riparian woodlands with open meadows or clearings)
- upland areas (type: structurally complex)
- vertebrates (type: diet consisting of vertebrate species that varies by location)
- wetland (type: emergent wetlands, fens, marshes and wet meadows)

## 1.6.4 MINIMIZE TREE CLEARING.

### DESCRIPTION

During project design, the VA will maximize opportunities to site and construct facilities on disturbed lands and in so doing will minimize the amount of tree-clearing to the maximum extent practicable.

### STRESSORS

- Decrease in vegetation

### RESOURCE NEEDS

- canopy cover (type: low and type: open)
- hibernacula (location: soft, saturated soils below frost line within emergent, scrub shrub or forested wetlands, proximity to water: hibernacula need to reach the water table for suitable brumation conditions to be met, type: crayfish burrows, and type: root structure and tunnel systems)
- riparian vegetation (size: shrub to sapling and type: riparian woodlands with open meadows or clearings)
- structure (type: rocks, vegetation, burrows, human structures, organic and inorganic debris)
- upland areas (type: structurally complex)
- vertebrates (type: diet consisting of vertebrate species that varies by location)
- wetland (type: emergent wetlands, fens, marshes and wet meadows)

## 1.6.5 RESTORE THE ACTION AREA USING NATIVE SPECIES. CONDUCT TARGETED REMOVAL OF NON-NATIVE SPECIES AS NEEDED.

### DESCRIPTION

The VA will revegetate areas temporarily disturbed using native seed mix. Problematic vegetation such as noxious weeds and non-native species, will be treated through measures such as mowing, targeted herbicide application, and manual removal during ongoing and routine maintenance of the facility. These measures will ensure soil stability, minimize potential for site erosion, and minimize changes to vegetative communities on site.

### STRESSORS

- Decrease in vegetation
- Increase in non-native vegetation

### RESOURCE NEEDS

- riparian vegetation (size: shrub to sapling and type: riparian woodlands with open meadows or clearings)
- upland areas (type: structurally complex)
- vertebrates (type: diet consisting of vertebrate species that varies by location)
- wetland (type: emergent wetlands, fens, marshes and wet meadows)

## 1.6.6 WASH EQUIPMENT TO PREVENT INTRODUCING NON-NATIVE VEGETATION TO THE ACTION AREA.

### DESCRIPTION

The VA will clean construction equipment and vehicles prior to bringing on site to prevent the introduction of invasive species.

### STRESSORS

- Increase in non-native vegetation

### RESOURCE NEEDS

- riparian vegetation (size: shrub to sapling and type: riparian woodlands with open meadows or clearings)
- upland areas (type: structurally complex)
- vertebrates (type: diet consisting of vertebrate species that varies by location)
- wetland (type: emergent wetlands, fens, marshes and wet meadows)

## 1.7 PRIOR CONSULTATION HISTORY

None for which SWCA is aware.

## 1.8 OTHER AGENCY PARTNERS AND INTERESTED PARTIES

The Department of Veterans Affairs and LRS Federal. SWCA is contracted to LRS Federal to complete the effects analysis on eastern massasauga rattlesnakes on behalf of the VA.

## 1.9 OTHER REPORTS AND HELPFUL INFORMATION

There is no additional available information of which SWCA is aware at this time.

# 2 SPECIES EFFECTS ANALYSIS

*This section describes, species by species, the effects of the proposed action on listed, proposed, and candidate species, and the habitat on which they depend. In this document, effects are broken down as direct interactions (something happening directly to the species) or indirect interactions (something happening to the environment on which a species depends that could then result in effects to the species).*

*These interactions encompass effects that occur both during project construction and those which could be ongoing after the project is finished. All effects, however, should be considered, including effects from direct and indirect interactions and cumulative effects.*

## 2.1 EASTERN MASSASAUGA (=RATTLESNAKE)

### 2.1.1 STATUS OF THE SPECIES

*This section should provide information on the species' background, its biology and life history that is relevant to the proposed project within the action area that will inform the effects analysis.*

#### 2.1.1.1 LEGAL STATUS

The Eastern Massasauga (=rattlesnake) is federally listed as 'Threatened' and additional information regarding its legal status can be found on the ECOS species profile.

#### 2.1.1.2 RECOVERY PLANS

Available recovery plans for the Eastern Massasauga (=rattlesnake) can be found on the ECOS species profile.

#### 2.1.1.3 LIFE HISTORY INFORMATION

Massasaugas are small snakes with thick bodies, heart-shaped heads and vertical pupils. The average length of an adult is about 2 feet. Adult massasaugas are gray or light brown with large, light-edged chocolate brown blotches on the back and smaller blotches on the sides. The snake's belly is marbled dark gray or black and there is a narrow, white stripe on its head. Its tail has several dark brown rings and is tipped by gray-yellow horny rattles. Young snakes have the same markings, but are more vividly colored. The head is a triangular shape and the pupils are vertical. Massasaugas live in wet areas including wet prairies, marshes, fens, sedge meadows, peatlands, and low areas along rivers and lakes. Massasaugas also use adjacent uplands (shrubland, open woodlands, prairie) during part of the year. They often hibernate in crayfish burrows but may also be found under logs and tree roots or in small mammal burrows. Unlike other rattlesnakes, massasaugas hibernate alone.

##### IDENTIFIED RESOURCE NEEDS

Canopy cover

Type: low and type: open

Habitat connectivity

Spatial arrangement: wetlands adjacent to upland areas and type: microhabitat

Hibernacula

Location: soft, saturated soils below frost line within emergent, scrub shrub or forested wetlands, proximity to water: hibernacula need to reach the water table for suitable brumation conditions to be met, type: crayfish burrows, and type: root structure and tunnel systems

Riparian vegetation

Size: shrub to sapling and type: riparian woodlands with open meadows or clearings

Structure

Type: rocks, vegetation, burrows, human structures, organic and inorganic debris

Upland areas

Type: structurally complex

Vertebrates

Type: diet consisting of vertebrate species that varies by location

Wetland

Type: emergent wetlands, fens, marshes and wet meadows

#### 2.1.1.4 CONSERVATION NEEDS

Species conservation needs are outlined in the USFWS's 2021 Final Recovery Plan.

### 2.1.2 ENVIRONMENTAL BASELINE

*The environmental baseline describes the species' health **within the action area only** at the time of the consultation, and does not include the effects of the action under*

*review. Unlike the species information provided above, the environmental baseline is at the scale of the Action area.*

#### 2.1.2.1 SPECIES PRESENCE AND USE

The species may occur in limited portions of the action area. Suitable habitat was observed in the forested area located in the southern portion of the action area.

**RELEVANT DOCUMENTATION**

#### 2.1.2.2 SPECIES CONSERVATION NEEDS WITHIN THE ACTION AREA

The eastern massasauga has potential to be present in the action area, but suitable habitat is quite limited and does not represent a significant portion of suitable habitat. Individual massasaugas occurring in Illinois are part of the Western Conservation Unit (Southwestern Minnesota, Southern Wisconsin, Eastern Iowa, Eastern Missouri, and Illinois), which has 11 robust populations (see Recovery Plan). If the species were to occur in the same time and space as construction or operation activities, the potential for impacts to result would be mitigated through implementation of the following measures:

Minimize vegetation (including tree) removal to the extent practical.

Restrict vegetation removal and disturbance (e.g., burning, mowing) to months when the species is likely to be hibernating (i.e., October to mid-March).

Operate all vehicles traveling within and around the project area in accordance with posted speed limits. Vehicles should avoid snakes in the road.

Provide identification and awareness regarding the potential presence of eastern massasauga rattlesnake training to construction personnel.

Immediately stop construction if an eastern massasauga rattlesnake is observed. Cease activities until proper agency coordination is conducted and agency staff have recommended appropriate next steps.

Restore disturbed areas with native vegetation following construction. Treat undesirable vegetation as needed during routine facility operation and maintenance.

Implement standard construction BMPs, including for erosion control.

### 2.1.2.3 HABITAT CONDITION (GENERAL)

**CANOPY COVER (TYPE: LOW AND TYPE: OPEN)**
Potentially suitable habitat for eastern massasauga rattlesnakes is restricted to the southern portion of the action area.

**HIBERNACULA (LOCATION: SOFT, SATURATED SOILS BELOW FROST LINE WITHIN EMERGENT, SCRUB SHRUB OR FORESTED WETLANDS, PROXIMITY TO WATER: HIBERNACULA NEED TO REACH THE WATER TABLE FOR SUITABLE BRUMATION CONDITIONS TO BE MET, TYPE: CRAYFISH BURROWS, AND TYPE: ROOT STRUCTURE AND TUNNEL SYSTEMS)**
These resource needs MAY be present in the extreme southeastern corner of the action area, where NLCD data indicate woody wetlands exist *outside* of the action area.

**RIPARIAN VEGETATION (SIZE: SHRUB TO SAPLING AND TYPE: RIPARIAN WOODLANDS WITH OPEN MEADOWS OR CLEARINGS)**
Potentially suitable habitat for the species is limited to the southern portion of the action area.

**STRUCTURE (TYPE: ROCKS, VEGETATION, BURROWS, HUMAN STRUCTURES, ORGANIC AND INORGANIC DEBRIS)**
While no specific structures were observed in the action area, organic and inorganic debris and vegetation is likely to occur within the potentially suitable habitat observed in the southern portion of the project area.

**UPLAND AREAS (TYPE: STRUCTURALLY COMPLEX)**
Potentially suitable habitat was observed in the forested area located in the southern portion of the action area.

**VERTEBRATES (TYPE: DIET CONSISTING OF VERTEBRATE SPECIES THAT VARIES BY LOCATION)**
Potentially suitable habitat was observed in the forested area located in the southern portion of the project area.

**WETLAND (TYPE: EMERGENT WETLANDS, FENS, MARSHES AND WET MEADOWS)**
The action area contains less than 1 acre each of woody wetland and emergent herbaceous wetlands.

#### 2.1.2.4 INFLUENCES

There are no known data regarding eastern massasauga rattlesnakes in the action area. The action area and surrounding parcels, are comprised of a mosaic of various, fragmented land cover types, including developed. The proposed project is phase 4 of an 8-phase development. Roads, infrastructure, human presence, and vehicle traffic are already present in the action area.

#### 2.1.2.5 ADDITIONAL BASELINE INFORMATION

There are no known available data for eastern massasauga rattlesnakes in the action area.

## 2.1.3 EFFECTS OF THE ACTION

*This section considers and discusses all effects on the listed species that are caused by the proposed action and are reasonably certain to occur, including the effects of other activities that would not occur but for the proposed action.*

#### 2.1.3.1 INDIRECT INTERACTIONS

| RESOURCE NEED | STRESSORS | CONSERVATION MEASURES | AMOUNT OF RESOURCE IMPACTED | INDIVIDUALS AFFECTED |
|---|---|---|---|---|
| Canopy cover (type: low and type: open) | Decrease in vegetation | Maximize use of lands already disturbed.<br>Minimize tree clearing. | Selected "yes" to address the potential for some tree removal to be conducted. The VA will minimize tree-clearing to the maximum extent possible. | ***No individuals will be affected***<br>The likelihood of minor clearing, if needed, affecting the species is considered negligible. The VA will minimize tree-clearing to the maximum extent practical and vegetation and tree clearing, if required, and disturbance (mowing, burning) would occur only when the species is likely to be hibernating (i.e., October to mid-March). |

| RESOURCE NEED | STRESSORS | CONSERVATION MEASURES | AMOUNT OF RESOURCE IMPACTED | INDIVIDUALS AFFECTED |
|---|---|---|---|---|
| Habitat connectivity (spatial arrangement: wetlands adjacent to upland areas and type: microhabitat) | | | ***This resource is not present in the action area*** Potentially suitable habitat for eastern massasauga rattlesnakes is restricted to the southern portion of the action area. There are no additional areas of potentially suitable habitat for the rattlesnake and therefore no connectivity areas in between within the action area. | ***There will be no impacts to this resource, so no individuals will be affected.*** |
| Hibernacula (location: soft, saturated soils below frost line within emergent, scrub shrub or forested wetlands, proximity to water: hibernacula need to reach the water table for suitable brumation conditions to be met, type: crayfish burrows, and type: root structure and tunnel systems) | Decrease in vegetation<br>Increase in soil density<br>Increase in impervious surfaces | Maximize use of lands already disturbed.<br>Minimize tree clearing.<br>Implement standard construction bmps and adhere to all applicable permits and plans, including the SWPPP and SPCC plan.<br>Minimize project facility footprints. | ***There will be no impacts to this resource*** The VA will implement the above conservation measures, including standard construction BMPs, to avoid indirect impacts to this resource. The resource, if present, is extremely limited to the southeastern-most portion of the larger action area polygon and impacts are not expected to reach this area. | ***There will be no impacts to this resource, so no individuals will be affected.*** |
| Riparian vegetation (size: shrub to sapling and type: riparian woodlands with open meadows or clearings) | Decrease in vegetation<br>Increase in soil density<br>Increase in impervious surfaces | Maximize use of lands already disturbed.<br>Minimize tree clearing.<br>Restore the action area using native species. conduct targeted removal of non-native species as needed.<br>Wash equipment to prevent introducing non-native vegetation to the action area.<br>Implement standard construction bmps and adhere to all applicable permits and plans, | ***There will be no impacts to this resource*** The VA will minimize tree-clearing, will implement standard construction BMPs, and will restore disturbed areas with native vegetation. No measurable effects to riparian habitat are anticipated to result from implementation of the proposed action. | ***There will be no impacts to this resource, so no individuals will be affected.*** |

| RESOURCE NEED | STRESSORS | CONSERVATION MEASURES | AMOUNT OF RESOURCE IMPACTED | INDIVIDUALS AFFECTED |
|---|---|---|---|---|
| | | including the SWPPP and SPCC plan.<br>Minimize project facility footprints. | | |
| Structure (type: rocks, vegetation, burrows, human structures, organic and inorganic debris) | Decrease in vegetation<br>Increase in soil density<br>Increase in impervious surfaces | Maximize use of lands already disturbed.<br>Minimize tree clearing.<br>Implement standard construction bmps and adhere to all applicable permits and plans, including the SWPPP and SPCC plan. | ***There will be no impacts to this resource***<br>The VA will minimize tree-clearing, will implement standard construction BMPs, and will restore disturbed areas with native vegetation. Rocks and other structures currently available to individual massasaugas will continue to be available in the area of potentially suitable habitat following construction. | ***There will be no impacts to this resource, so no individuals will be affected.*** |
| Upland areas (type: structurally complex) | Decrease in vegetation<br>Increase in soil density<br>Increase in impervious surfaces | Maximize use of lands already disturbed.<br>Minimize tree clearing.<br>Restore the action area using native species. conduct targeted removal of non-native species as needed.<br>Wash equipment to prevent introducing non-native vegetation to the action area.<br>Implement standard construction bmps and adhere to all applicable permits and plans, including the SWPPP and SPCC plan.<br>Minimize project facility footprints. | ***There will be no impacts to this resource***<br>The VA will minimize tree-clearing to the extent practicable, will implement standard construction BMPs, and will restore disturbed areas with native vegetation. Upland areas observed as being potentially suitable for eastern massasauga rattlesnakes will continue to be available to individuals during and following construction. | ***There will be no impacts to this resource, so no individuals will be affected.*** |
| Vertebrates (type: diet consisting of vertebrate species that varies by location) | Decrease in vegetation<br>Increase in soil density<br>Increase in impervious surfaces | Maximize use of lands already disturbed.<br>Minimize tree clearing.<br>Restore the action area using native species. conduct targeted | ***There will be no impacts to this resource***<br>The VA will minimize tree-clearing to the maximum extent practicable, will implement standard | ***There will be no impacts to this resource, so no individuals will be affected.*** |

| RESOURCE NEED | STRESSORS | CONSERVATION MEASURES | AMOUNT OF RESOURCE IMPACTED | INDIVIDUALS AFFECTED |
|---|---|---|---|---|
| | | removal of non-native species as needed.<br>Wash equipment to prevent introducing non-native vegetation to the action area.<br>Implement standard construction bmps and adhere to all applicable permits and plans, including the SWPPP and SPCC plan.<br>Minimize project facility footprints. | construction BMPs, and will restore disturbed areas with native vegetation. Habitat for prey species available in the action area will continue to be available both during and following construction. | |
| Wetland (type: emergent wetlands, fens, marshes and wet meadows) | Decrease in vegetation<br>Increase in soil density<br>Increase in impervious surfaces | Maximize use of lands already disturbed.<br>Minimize tree clearing.<br>Restore the action area using native species. conduct targeted removal of non-native species as needed.<br>Wash equipment to prevent introducing non-native vegetation to the action area.<br>Implement standard construction bmps and adhere to all applicable permits and plans, including the SWPPP and SPCC plan.<br>Minimize project facility footprints. | ***There will be no impacts to this resource***<br>The VA will avoid if possible and then minimize effects to the maximum extent practicable, within wetlands. The VA will implement standard construction BMPs and will restore temporarily disturbed areas with to pre-construction conditions. | ***There will be no impacts to this resource, so no individuals will be affected.*** |

#### 2.1.3.2 DIRECT INTERACTIONS

No direct interactions leading to effects on species are expected to occur from the proposed project.

### 2.1.4 CUMULATIVE EFFECTS

No state or private actions are reasonably certain to occur in the action area.

### 2.1.5 DISCUSSION AND CONCLUSION

**DETERMINATION: NLAA**

## 2.2 EASTERN PRAIRIE FRINGED ORCHID

***This species has been excluded from analysis in this environmental review document.***

### RELEVANT DOCUMENTATION

Ms. Hailey Preston, SWCA biologist and PWS in SWCA's Chicago office, completed a qualitative habitat assessment in March 2023. The habitat assessment is part of an unpublished report for which SWCA does not have authorization to distribute.

### JUSTIFICATION FOR EXCLUSION

The species occurs in mesic prairies to wetlands including sedge meadows, marsh edges, and bogs. This orchid species requires full sun and open wetland habitat. Suitable habitat was not observed in the action area and the species is unlikely to occur there.

## 2.3 HINE'S EMERALD DRAGONFLY

***This species has been excluded from analysis in this environmental review document.***

### RELEVANT DOCUMENTATION

Ms. Hailey Preston, SWCA biologist and PWS in SWCA's Chicago office, completed a qualitative habitat assessment in March 2023. The habitat assessment is part of an unpublished report for which SWCA does not have authorization to distribute.

### JUSTIFICATION FOR EXCLUSION

This species occurs in spring-fed wetlands, wet meadows, and marshes. Suitable habitat does not occur in the action area and the species is unlikely to occur in the action area.

## 2.4 LAKESIDE DAISY

***This species has been excluded from analysis in this environmental review document.***

### RELEVANT DOCUMENTATION

Ms. Hailey Preston, SWCA biologist and PWS in SWCA's Chicago office, completed a qualitative habitat assessment in March 2023. The habitat assessment is part of an unpublished report for which SWCA does not have authorization to distribute.

### JUSTIFICATION FOR EXCLUSION

This species thrives in alvar habitat, which includes sparsely vegetated rock barrens with shallow soils. Suitable habitat is not present in the action area and the species is unlikely to occur there.

## 2.5 LEAFY PRAIRIE-CLOVER

***This species has been excluded from analysis in this environmental review document.***

### RELEVANT DOCUMENTATION

Ms. Hailey Preston, SWCA biologist and PWS in SWCA's Chicago office, completed a qualitative habitat assessment in March 2023. The habitat assessment is part of an unpublished report for which SWCA does not have authorization to distribute.

### JUSTIFICATION FOR EXCLUSION

This species is restricted to thin-soiled (< 4.5 dm), wet or moist, open dolomite prairies on river terraces in the northeastern part of Illinois. Suitable habitat is not present in the action area and the species is unlikely to occur there.

## 2.6 MONARCH BUTTERFLY

***This species has been excluded from analysis in this environmental review document.***

### RELEVANT DOCUMENTATION

Ms. Hailey Preston, SWCA biologist and PWS in SWCA's Chicago office, completed a qualitative habitat assessment in March 2023. The habitat assessment is part of an unpublished report for which SWCA does not have authorization to distribute.

### JUSTIFICATION FOR EXCLUSION

Candidate species are not required to be analyzed for consultation.

## 2.7 WHOOPING CRANE

***This species has been excluded from analysis in this environmental review document.***

### RELEVANT DOCUMENTATION

Ms. Hailey Preston, SWCA biologist and PWS in SWCA's Chicago office, completed a qualitative habitat assessment in March 2023. The habitat assessment is part of an unpublished report for which SWCA does not have authorization to distribute.

### JUSTIFICATION FOR EXCLUSION

Non-essential experimental populations do not require consultation under 7(a)(2) of the ESA unless the action will occur on National Wildlife Refuge or National Park land. The Department of Veterans Affairs understands that Federal agencies must not jeopardize existence of these species (section 7(a)(4))).

# 3 CRITICAL HABITAT EFFECTS ANALYSIS

***No critical habitats intersect with the project action area.***

# 4 SUMMARY DISCUSSION AND CONCLUSION

## 4.1 SUMMARY DISCUSSION

Potentially suitable habitat for the eastern massasauga rattlesnake occurs in the southern portion of the action area. The action area primarily is comprised of developed land cover types and several structures and buildings occur there. The action area experiences ongoing vehicle and human presence. The VA will implement standard construction BMPs to avoid and control erosion, runoff, etc. Additionally, the VA will adhere to all conditions of applicable permits and plans, such as a SWPPP and SPCC plan. The VA will avoid working in potentially suitable rattlesnake habitat when the species is active, and will minimize tree-clearing to the maximum extent practicable. The VA will install speed limits to ensure drivers have time to note, and avoid, snakes crossing roadways. The VA also will complete contractor and facility awareness and training regarding eastern massasauga rattlesnakes. On the whole, these measures are anticipated to minimize the likelihood of impacting the species such that any impacts to individual snakes, if they occur in the action area, are considered discountable.

## 4.2 CONCLUSION

The VA has determined that the proposed action is not likely to adversely affect eastern massasauga rattlesnakes.

# E Appendix E: Wetland Investigation Report


# Wetland Investigation Report

## Abraham Lincoln National Cemetery
## Phase 3 Gravesite Expansion & Improvements Project
## 20953 West Hoff Road
## Elwood, Will County, Illinois

**AE Comm. # 14739**

**September 26, 2018**


# Anderson Engineering of Minnesota, LLC

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**A Service-Disabled Veteran-Owned Small Business**

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## Executive Summary

Anderson Engineering of Minnesota, LLC was retained in July of 2018 to provide professional wetland services to identify areas meeting wetland criteria utilizing the 1987 United States Army Corps of Engineers (USACE) Wetland Delineation Manual (*Technical Report Y-87-1; January 1987*) and all supplemental guidance documents within and adjacent to the project area identified in *Appendix A*, Figure 5. The project area is approximately 274 acres, and generally located approximately 200 feet north and west of the intersection of West Hoff Road and South Diagonal Road in Elwood, Will County, Illinois. Geographically, the parcel is located in Section 31, Township 34 North, Range 10 East.

Six wetland and four waterways, or portions thereof was field delineated within the identified project area (*Appendix A, Figure 5*). See Table 1 for a summary of delineated wetlands and waterways within the project area.

**Table 1 – Summary of Delineated Resources within the Project Area**

| Resource ID | Resource Type Classification | | | Area (acres) |
|---|---|---|---|---|
| | Circular 39 | Cowardin | Eggers and Reed | |
| 1 | 2 | PEM1B/5Ah | Fresh (Wet) Meadow | 8.41 |
| 2 | 1/2/3 | PEM1C/B/5A/FO1A | Shallow Marsh/Fresh (Wet) Meadow/Floodplain | 1.44 |
| 3 | 2/3/6 | PEM1C/B/5A/SS1B | Shallow Marsh/Fresh (Wet) Meadow/Shrub Swamp | 1.97 |
| 4 | 1 | PFO1A | Floodplain | 0.10 |
| 5 | 2 | PEM1B/5A | Fresh (Wet) Meadow | 0.22 |
| 6 | 3 | PEM1C | Shallow Marsh | 0.01 |
| A | 90 | R4SBC | Channel | 0.48 |
| B | 90 | R4SBC | Channel | 0.13 |
| C | 90 | R4SBC | Channel | 0.21 |
| D | 90 | R4SBC | Channel | 0.28 |

## Background

As requested by Department of Veterans Affairs Office of Construction and Facilities Management, Anderson Engineering of Minnesota, LLC completed a wetland investigation within the Abraham Lincoln National Cemetery Phase 3 Expansion Area identified in Figure 5, generally located north and west of the intersection of West Hoff Road and South Diagonal Road in Elwood, Will County, Illinois. The project latitude is 44.41.396816 and longitude is -88.137940.

Geographically, the parcel is located in Section 31, Township 34 North, Range 10 East. The wetland delineation was completed in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual and the published regional supplement to the Army Corps Wetland Delineation Manual, Midwest Region.

The purpose of this study was to investigate the identified investigation extent, identify areas meeting the technical criteria for wetlands, delineate the jurisdictional extent of the wetland basins, and classify the wetland habitat.

Fieldwork for this site investigation was completed by Environmental Scientist Ben Hodapp and Environmental Associate Alex Yellick on September 11, 2018 and September 12, 2018. The weather condition for both days was generally fair with a temperature of 81 degrees Fahrenheit.

Project area soils are significantly modified and disturbed due to historical activity. Veterans Affairs acquired a 982-acre portion of the Joliet Army Ammunition Plant from the U.S. Army in 1996 for the purpose of development of a national cemetery. By 1999, the initial portion of Abraham Lincoln National Cemetery was developed, with the subsequent expansion completed around 2011. In 2002, significant quantities of fill generated from the development of the adjacent CenterPoint Intermodal facility was imported to the site. Additional grading was completed during cemetery expansion and berms meant to screen unpleasant sights and sounds from adjacent intermodal and distribution facilities.

As part of Phase III Expansion development planning, a geotechnical evaluation of the area was completed in 2018 by Terracon Consultants (Naperville, Illinois). The investigation confirmed the presence of imported fill, with measured thicknesses ranging between 1 and 11 feet. Fill was generally placed in the southwest, central, and northeast portion of the Phase III project area. See appendix F for the geotechnical report.

## Methodology

United States Geologic Service 7.5” Topographic Quadrangle maps, United States Fish and Wildlife Service National Wetland Inventory maps, United States Department of Agriculture Natural Resources Conservation Service Soil Survey and available aerial photographs were consulted to initially locate potential wetland habitats.

Routine On-site Determination Method was used during this investigation. In this method, the following procedures were used:

1) The vegetative community was sampled in all present strata to determine whether it met hydrophytic vegetation criteria based on the indicators identified in the Midwest Regional Supplement.

2) Soil pits were dug using a Dutch auger to depths of 16”-36”. Soil profile was noted, in addition to any hydric soil characteristics.

3) Signs of wetland hydrology were noted and compared to field criteria such as depth to shallow water table and depth of soil saturation found in the soil pits.

Data from sample points were recorded on Army Corps of Engineers Midwest Region Wetland Determination Data Forms (*Appendix B*). At least one sample point transect crosses the delineated wetland edge. This transect consist of an upland sample point and a wetland sample point. Other sample points may be located in areas which have one or more of the wetland vegetation, soils, or hydrologic characteristics present; where questionable conditions exist; or to verify the absence of wetland criteria. Photographs are also taken at each sample point, and of the wetland and upland buffer (*Appendix C*).

All sample points and the delineated wetland boundary were located utilizing a Trimble Geo XH sub-meter GPS unit.

## Resource Review

The following resources were reviewed to supplement the wetland field delineation:

**National Wetlands Inventory:**

The National Wetlands Inventory (*Appendix A, Figure 2*) identifies three wetland complex within and adjacent to the project area. Wetlands consists of PEM1AF, R4SBC, and PFO1A wetland classifications.

**USDA - Natural Resources Conservation Service Soil Survey:**

Soil Survey data for Will County, Illinois was obtained and reviewed prior to the delineation. Table 2 provides a list of the mapped soils within the investigation area. Figure 3 in Appendix A contains a map of the soil units.

**Table 2 -** Summary of Mapped Soil Units within the Project Area

| Map Unit Symbol | Map Unit Name | Hydric Soil | Hydric Soil Rating (%) | Drainage Class | Site Coverage (%) |
|---|---|---|---|---|---|
| 232A | Ashkum silty clay loam, 0 to 2 percent slopes | Yes | 97% | Poorly drained | 18.6% |
| 530C2 | Ozaukee silt loam, 4 to 6 percent slopes, eroded | No | 0% | Moderately well drained | 7.0% |
| 531D2 | Markham silt loam, 6 to 12 percent slopes, eroded | No | 0% | Moderately well drained | 0.7% |
| 530D2 | Ozaukee silt loam, 6 to 12 percent slopes, eroded | No | 0% | Moderately well drained | 13.1% |
| 223C2 | Varna silt loam, 4 to 6 percent slopes, eroded | No | 0% | Moderately well drained | 12.5% |
| 298B | Beecher silt loam, 2 to 4 percent slopes | No | 4% | Somewhat poorly drained | 12.2% |
| 146B | Elliott silt loam, 2 to 4 percent slopes | No | 4% | Somewhat poorly drained | 12.6% |
| 223D2 | Varna silt loam, 6 to 12 percent slopes, eroded | Yes | 0% | Moderately well drained | 3.4% |
| 530E2 | Ozaukee silt loam, 12 to 20 percent slopes, eroded | No | 0% | Moderately well drained | 0.1% |

| Map Unit Symbol | Map Unit Name | Hydric Soil | Hydric Soil Rating (%) | Drainage Class | Site Coverage (%) |
|---|---|---|---|---|---|
| 23B | Blount silt loam, Lake Michigan Lobe, 2 to 4 percent slopes | No | 4% | Somewhat poorly drained | 0.3% |
| 531C2 | Markham silt loam, 4 to 6 percent slopes, eroded | No | 0% | Moderately well drained | 14.3% |
| 8451A | Lawson silt loam, heavy till plain, 0 to 2 percent slopes, occasionally flooded | Yes | 5% | Somewhat poorly drained | 1.1% |
| 530F | Ozaukee silt loam, 20 to 30 percent slopes | No | 0% | Moderately well drained | 4.1% |

Hydric soils are defined in the *Field Indicators of Hydric Soils in the United States: Guide for Identifying and Delineating Hydric Soils, version 8.1, 2017* (NRCS, 2017), *The 1987 Manual*, and *The Regional Supplement* (USACE, August 2010).

**Antecedent Precipitation Data:**

A review of the antecedent precipitation data, as well as analysis of the 30 day rolling precipitation data collected from the State Climatologist Office for Illinois (*Appendix D)* indicate that precipitation totals for the weeks prior to September 12 and September 13 were generally within the normal range. At the time of the field visit, hydrologic conditions were suitable for completing an accurate wetland determination and boundary delineation.

## Field Review

Six areas meeting wetland criteria and four areas meeting waterway criteria or portions thereof was identified within the project area and are described below:

**Wetland 1:** Wetland 1 is a Type 2, PEM1B/5Ah, fresh (wet) meadow wetland. The wetland is predominantly vegetated by common reed (*Phragmites australis*) and reed canarygrass (*Phalaris arundinacea*). The underlying soils are mapped as Ashkum silty clay loam (232A). The investigated soil profile met the redox dark surface (F6) hydric soil indicator. Hydrology indicators observed include water stained leaves (B9), geomorphic position (D2), and FAC-neutral test (D5). No inlet or outlet connections were observed.

The upland buffer surrounding the wetland is primarily vegetated by reed canarygrass (*Phalaris arundinacea*) and tall goldenrod (*Solidago altissima*). Moderate slopes form the transition into the wetland.

**Wetland 2:** Wetland 2 is a Type 1/2/3, PEM1C/B/5Ah/FO1A, fresh (wet) meadow/shallow marsh/floodplain wetland. The wetland is predominantly vegetated by peachleaf willow (*Salix amygdaloides*), eastern cottonwood (*Populus deltoides*), downy hawthorn (*Crataegus mollis*), narrowleaf cattail (*Typha angustifolia*), and reed canarygrass (*Phalaris arundinacea*). The underlying soils are mapped as Varna silt loam (223C2) and Markham silt loam (531C2). The investigated soil profile met the depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6) hydric soil indicators. Hydrology indicators observed include algal mat or crust (B4), surface soil cracks (B6), geomorphic position (D2), and FAC-neutral test (D5). Two sedimented metal grate control structures are present on the north and west side of wetland and may connect the resource to outside resources.

The upland buffer surrounding the wetland is primarily vegetated by honey locust (*Gleditsia triacanthos*), smooth brome (*Bromus inermis*), and tall goldenrod (*Solidago altissima*). Moderate slopes form the transition into the wetland.

**Wetland 3:** Wetland 3 is a Type 2/3/6, PEM1C/B/5Ah/SS1B, fresh (wet) meadow/shallow marsh/shrub swamp wetland. The wetland is predominantly vegetated by common reed (*Phragmites australis*), reed canarygrass (*Phalaris arundinacea*), smooth brome (*Bromus inermis*), sandbar willow (*Salix interior*), and honey locust (*Gleditsia triacanthos*). The underlying soils are mapped as Ashkum silty clay loam (232A). The investigated soil profile met the depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6) hydric soil indicators. Hydrology indicators observed drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5). No inlet or outlet connections were observed.

The upland buffer surrounding the wetland is primarily vegetated by quackgrass (*Elymus repens*) and smooth brome (*Bromus inermis*). Moderate slopes form the transition into the wetland.

**Wetland 4:** Wetland 4 is a Type 1, PFO1A, floodplain wetland. The wetland is predominantly vegetated by boxelder (*Acer negundo*), sugar maple (*Acer saccharinum*), slippery elm (*Ulmus rubra*), clearweed (*Pilea pumila*), and purplestem beggarticks (*Bidens connata*). The underlying soil is mapped as Ozaukee silt loam (530F). The investigated soil profile met the redox dark surface (F6) hydric soil indicator. Hydrology indicators observed include saturation (A3), drainage patterns (B10), geomorphic position (D2), and FAC-neutral test (D5). The resource is connected to Waterway B.

The upland buffer surrounding the wetland is primarily vegetated by bitternut hickory (*Carya cordiformis*), slippery elm (*Ulmus rubra*), sugar maple (*Acer saccharinum*), tatarian honeysuckle (*Lonicera tatarica*), and a dominant unknown, immature species from the Poa genus. Moderate slopes form the transition into the wetland.

**Wetland 5:** Wetland 5 is a Type 2, PEM1B/PEM5A, fresh (wet) meadow wetland. The wetland is predominantly vegetated by honey locust (*Gleditsia triacanthos*), bur oak (*Quercus macrocarpa*), tatarian honeysuckle (*Lonicera tatarica*), common reed (*Phragmities australis*), clearweed (*Pilea pumila*), and lake

sedge (*Carex lacustris*). The underlying soil is mapped as Ozaukee silt loam (530F). The underlying soil met the depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6) hydric soil indicators. Hydrology indicators observed include drainage patterns (B10), crayfish burrows (C8), geomorphic position (D2), and FAC-neutral test (D5). The resource is connected to Waterway C and Wetland 6 downstream.

The upland buffer surrounding the wetland is primarily vegetated by honey locust (*Gleditsia triacanthos*), prickly gooseberry (*Ribes cynosbati*), tatarian honeysuckle (*Lonicera tatarica*), kentuckey bluegrass (*Poa pratensis*), and tall goldenrod (*Solidago altissima*). Moderate slopes form the transition into the wetland.

**Wetland 6:** Wetland 6 is a Type 3, PEM1C, shallow marsh wetland. The wetland is predominantly vegetated by narrowleaf cattail (*Typha angustifolia*) and tall boneset (*Eupatorium altissimum*). The underlying soil is mapped as Ozaukee silt loam (530F). The investigated soil profile met the depleted below dark surface (A11), depleted matrix (F3), and redox dark surface (F6) hydric soil indicators. Hydrology indicators observed include drainage patterns (B10) and geomorphic position (D2). The resource is connected to Waterway C and Wetland 5 upstream.

The upland buffer surrounding the wetland is primarily vegetated tatarian honeysuckle (*Lonicera tatarica*), and tall goldenrod (*Solidago altissima*). Moderate slopes form the transition into the wetland.

**Waterway A:** Waterway A is a Type 90, R4SBC, channel located on the northwest portion of the project area. The waterbody presumably extends offsite to the north and west; however, two concrete and metal grate control structures are present on either side of the waterbody and appear sedimented in place. The waterway is approximately 8 feet at its widest reach and 2 feet deep. Water was not present at the time of the field visit.

**Waterway B:** Waterway B is a Type 90, R4SBC, channel located on the southeast portion of the project area. The waterbody source is located in the interior of the project area and discharges onsite to Grant Creek. The waterbody is approximately 6 feet at its widest reach and 5 feet deep, on average. Flowing water was not present at the time of the field visit.

**Waterway C:** Waterway C is a Type 90, R4SBC, channel located on the southwest portion of the project area. The waterbody source is located in the interior of the project area and discharges onsite to Grant Creek. The waterbody is approximately 4 feet wide and 2 feet deep, on average. Water was not present at the time of the field visit.

**Waterway D:** Waterway D (Grant Creek) is a Type 90, R4SBC, channel located on the southern portion of the project area. Grant Creek meanders onto the southwest and southeast portion of the project area. Grant Creek is approximately 20 feet wide and 1 foot deep. Water was observed to flow westerly.

Additionally, two areas not meeting wetland criteria were investigated and are described below:

**Investigation Area A:** Investigation Area A is predominantly vegetated by waterpepper (*Persicaria hydropiper*). The underlying soil is mapped as Elliott silt loam (146B). The investigated soil profile did not meet hydric soil indicator(s).

**Investigation Area B:** Investigation Area B is predominantly vegetated by barnyard grass (*Echinochloa crus-galli*). The underlying soil is mapped as Elliott silt loam (146B). The investigated soil profile did not meet hydric soil indicator(s).

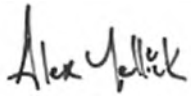
## Conclusion

Six areas meeting wetland criteria and four areas meeting waterway criteria were identified and delineated in accordance with the 1987 United States Army Corps of Engineers Wetland Delineation Manual within the proposed project area generally located north and west of the intersection of West Hoff Road and South Diagonal Road in Elwood, Will County, Illinois.

Wetlands may be regulated by several agencies at the local, State, and/or federal level. Activities which may potentially impact those wetlands identified within this report should be discussed in advance with the appropriate regulating agency in regards to potential permit requirements.

This wetland investigation meets the standards and criteria described in the 1987 United States Army Corps of Engineers Wetland Delineation Manual all applicable subsequent guidance for an on-site determination and the results reflect the conditions present at the time of the delineation.

*I certify that I performed the field analysis and wrote the report for this wetland determination.*



9/26/2018

Alex Yellick
Environmental Associate
Minnesota Certified Wetland Delineator #5250
**Anderson Engineering of Minnesota, LLC**

Date

*I certify that I performed the field analysis and/or reviewed work completed by above staff.*

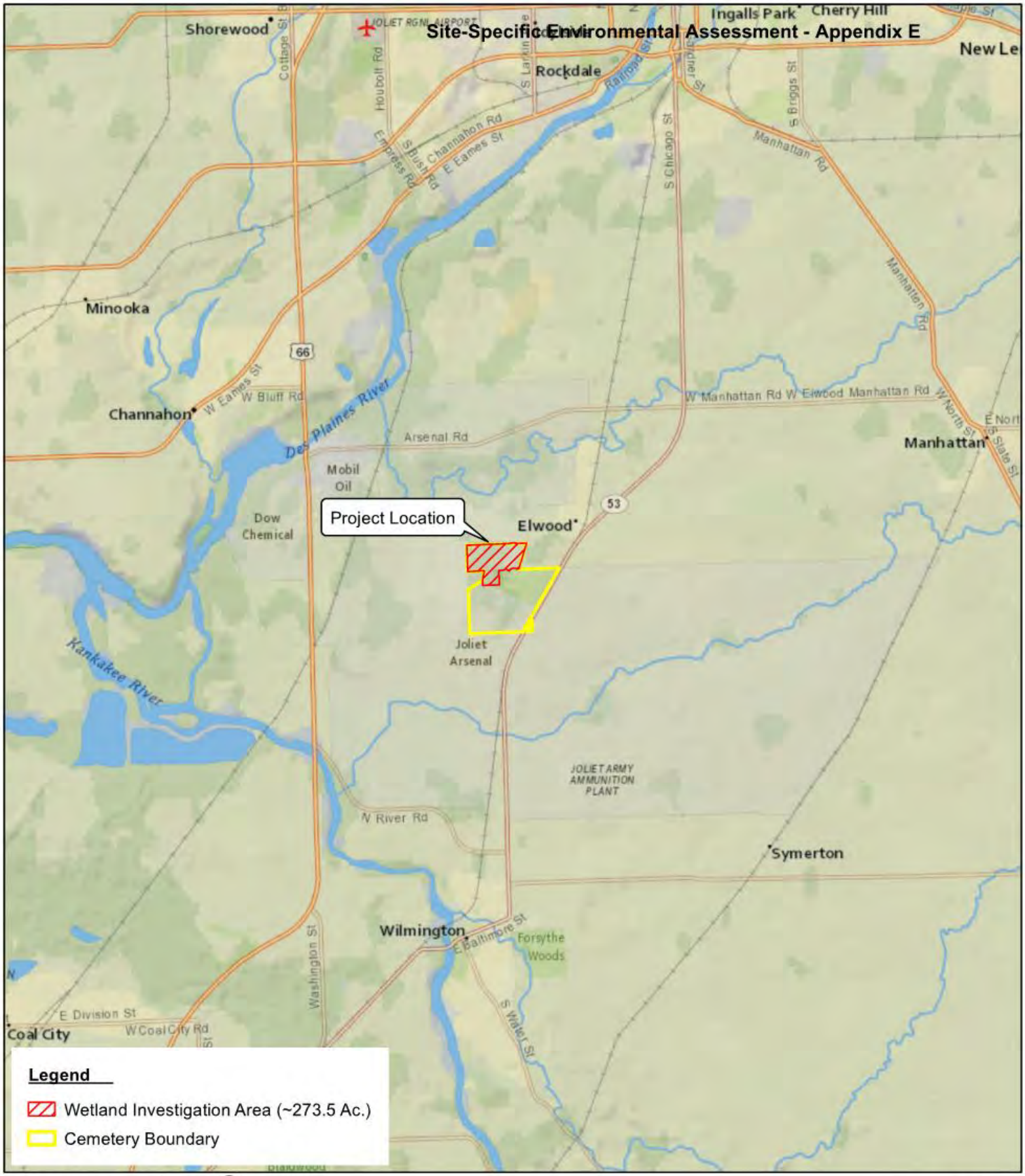
9/26/2018

Benjamin J Hodapp, PWS
Environmental Services Manager
Minnesota Certified Wetland Delineator #1016
**Anderson Engineering of Minnesota, LLC**

Date

# APPENDIX A

## Figures




Scale: 1 inch = 2 miles

Project Location

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**Phase III Expansion**
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5/3/2018

**1**

**Comm. No. 14739**


**Scale: 1 inch = 0.25 miles**

**National Wetland Inventory**

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**2**

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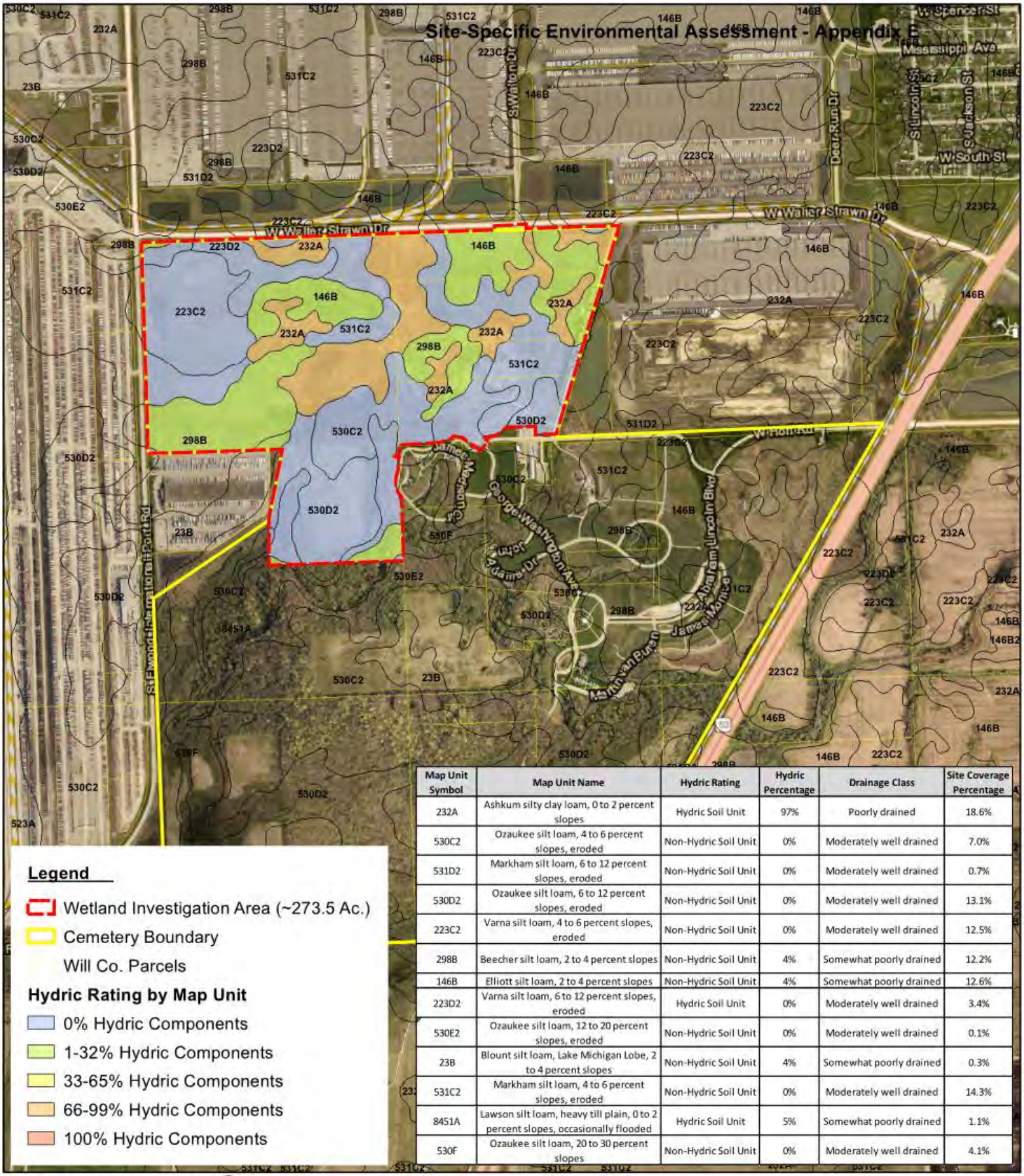
# Site-Specific Environmental Assessment - Appendix E




| Map Unit Symbol | Map Unit Name | Hydric Rating | Hydric Percentage | Drainage Class | Site Coverage Percentage |
|---|---|---|---|---|---|
| 232A | Ashkum silty clay loam, 0 to 2 percent slopes | Hydric Soil Unit | 97% | Poorly drained | 18.6% |
| 530C2 | Ozaukee silt loam, 4 to 6 percent slopes, eroded | Non-Hydric Soil Unit | 0% | Moderately well drained | 7.0% |
| 531D2 | Markham silt loam, 6 to 12 percent slopes, eroded | Non-Hydric Soil Unit | 0% | Moderately well drained | 0.7% |
| 530D2 | Ozaukee silt loam, 6 to 12 percent slopes, eroded | Non-Hydric Soil Unit | 0% | Moderately well drained | 13.1% |
| 223C2 | Varna silt loam, 4 to 6 percent slopes, eroded | Non-Hydric Soil Unit | 0% | Moderately well drained | 12.5% |
| 298B | Beecher silt loam, 2 to 4 percent slopes | Non-Hydric Soil Unit | 4% | Somewhat poorly drained | 12.2% |
| 146B | Elliott silt loam, 2 to 4 percent slopes | Non-Hydric Soil Unit | 4% | Somewhat poorly drained | 12.6% |
| 223D2 | Varna silt loam, 6 to 12 percent slopes, eroded | Hydric Soil Unit | 0% | Moderately well drained | 3.4% |
| 530E2 | Ozaukee silt loam, 12 to 20 percent slopes, eroded | Non-Hydric Soil Unit | 0% | Moderately well drained | 0.1% |
| 23B | Blount silt loam, Lake Michigan Lobe, 2 to 4 percent slopes | Non-Hydric Soil Unit | 4% | Somewhat poorly drained | 0.3% |
| 531C2 | Markham silt loam, 4 to 6 percent slopes, eroded | Non-Hydric Soil Unit | 0% | Moderately well drained | 14.3% |
| 8451A | Lawson silt loam, heavy till plain, 0 to 2 percent slopes, occasionally flooded | Hydric Soil Unit | 5% | Somewhat poorly drained | 1.1% |
| 530F | Ozaukee silt loam, 20 to 30 percent slopes | Non-Hydric Soil Unit | 0% | Moderately well drained | 4.1% |

**Scale:1 inch = 0.25 miles**

**Will County Soil Survey**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Watercourses/Waterbodies

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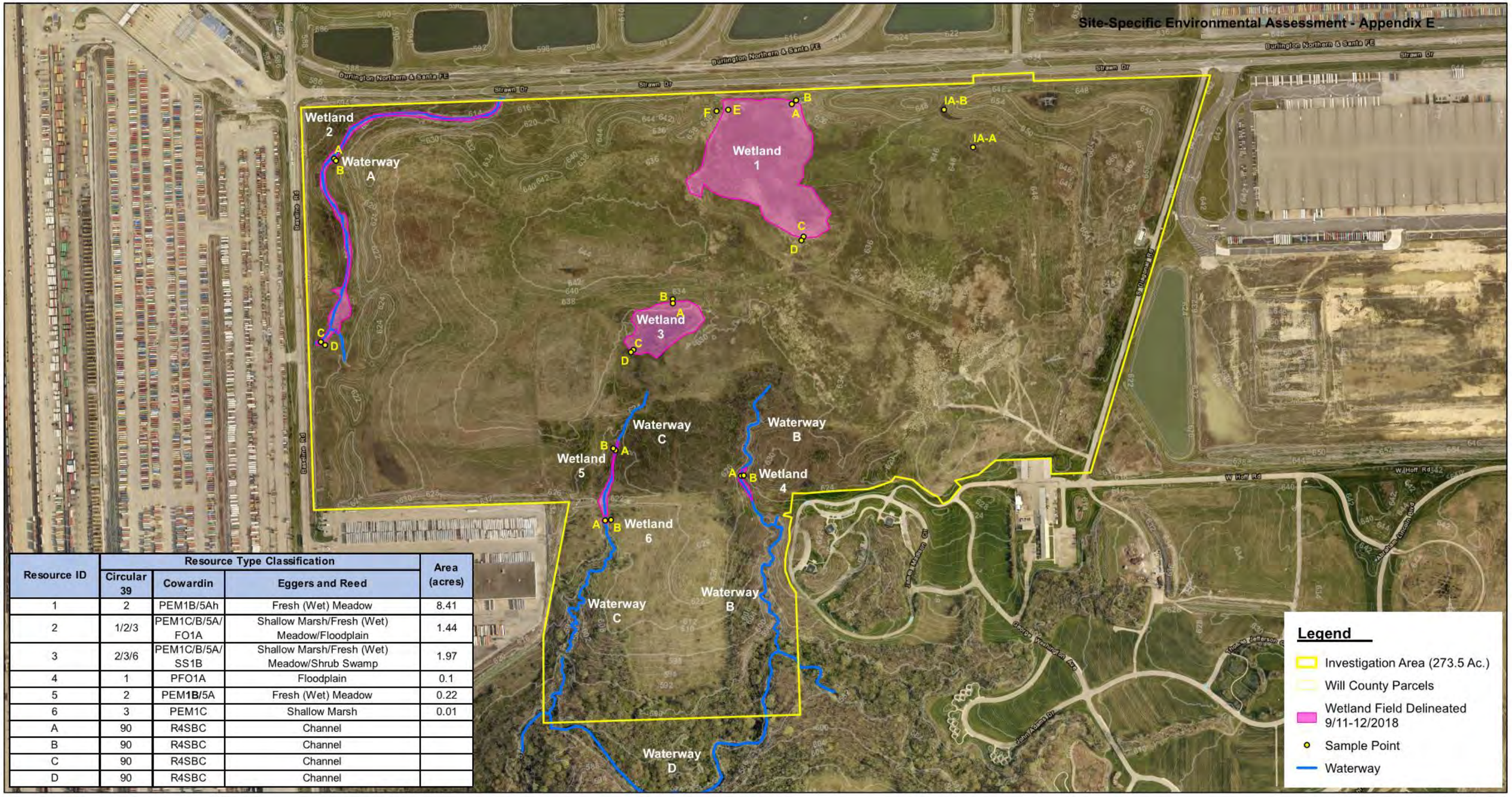


| Resource ID | Resource Type Classification | | | Area (acres) |
|---|---|---|---|---|
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| 3 | 2/3/6 | PEM1C/B/5A/ SS1B | Shallow Marsh/Fresh (Wet) Meadow/Shrub Swamp | 1.97 |
| 4 | 1 | PFO1A | Floodplain | 0.1 |
| 5 | 2 | PEM**1B**/5A | Fresh (Wet) Meadow | 0.22 |
| 6 | 3 | PEM1C | Shallow Marsh | 0.01 |
| A | 90 | R4SBC | Channel | |
| B | 90 | R4SBC | Channel | |
| C | 90 | R4SBC | Channel | |
| D | 90 | R4SBC | Channel | |

**Scale: 1 inch = 500 feet**

**Delineation**

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9/25/2018

# Fig.5

Comm. No. 14739

# APPENDIX B

## Routine On-site Determination Method Datasheets

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 1A

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: PEM1Af

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Phragmites australis* | 100 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 100 | x 2 = | 200 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 100 (A) | | 200 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 1A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-20 | 10YR 2/1 | 95 | 10YR 3/6 | 5 | C | M | Loamy/Clayey | Prominent redox concentrations |
| 20-36 | 10YR 2/1 | 90 | 10YR 4/6 | 5 | C | M | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
X Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
X FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? Yes ___ No X Depth (inches): ___
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 1B

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
Two indicators not met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Phalaris arundinacea* | 85 | Yes | FACW |
| 2. *Heracleum maximum* | 10 | No | FACW |
| 3. *Solidago altissima* | 5 | No | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 95 | x 2 = | 190 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 100 (A) | | 210 (B) |

Prevalence Index = B/A = 2.10

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 1B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-18 | 10YR 2/1 | 100 | | | | | Loamy/Clayey | |
| 18-32 | 10YR 6/3 | 100 | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 1C

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Phalaris arundinacea* | 80 | Yes | FACW |
| 2. *Solidago altissima* | 10 | No | FACU |
| 3. *Eupatorium altissimum* | 5 | No | UPL |
| 4. *Scirpus atrovirens* | 5 | No | OBL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 5 | x 1 = | 5 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 10 | x 4 = | 40 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals | 100 (A) | | 230 (B) |

Prevalence Index = B/A = 2.30

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 1C

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-11 | 10YR 2/1 | 95 | 10YR 3/6 | 2 | C | M | Loamy/Clayey | Prominent redox concentrations |
| 11-26 | 10YR 6/3 | 100 | | | | | Loamy/Clayey | Gravel @ 24" |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
X FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 1D

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
All indicators not met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Solidago altissima* | 85 | Yes | FACU |
| 2. *Phalaris arundinacea* | 10 | No | FACW |
| 3. *Bidens connata* | 5 | No | OBL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 85 | x 4 = | 340 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 95 (A) | | 360 (B) |

Prevalence Index = B/A = 3.79

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Unknown Poa spp. 5%.

## SOIL

Sampling Point: 1D

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-19 | 10YR 2/1 | 100 | | | | | Loamy/Clayey | |
| 19-28 | 10YR 6/3 | 100 | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): _____
Water Table Present? Yes ____ No X Depth (inches): _____
Saturation Present? Yes ____ No X Depth (inches): _____
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 1E

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No | **Is the Sampled Area within a Wetland?** **Yes** X **No** |
| Hydric Soil Present? | Yes X | No | |
| Wetland Hydrology Present? | Yes X | No | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Phragmites australis* | 85 | Yes | FACW |
| 2. *Phalaris arundinacea* | 10 | No | FACW |
| 3. *Solidago altissima* | 5 | No | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 95 | x 2 = | 190 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 100 (A) | | 210 (B) |

Prevalence Index = B/A = 2.10

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 1E

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-5 | 10YR 2/1 | 100 | | | | | Loamy/Clayey | |
| 5-11 | 10YR 2/1 | 95 | 10YR 5/4 | 5 | C | M | Loamy/Clayey | |
| 11-17 | 10YR 2/1 | 100 | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
X FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ___ No X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? Yes ___ No X Depth (inches): ___
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 1F

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
Two indicators not met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Phragmites australis* | 70 | Yes | FACW |
| 2. *Urtica dioica* | 10 | No | FACW |
| 3. *Solidago altissima* | 5 | No | FACU |
| 4. *Cirsium arvense* | 5 | No | FACU |
| 5. *Lathyrus venosus* | 5 | No | FAC |
| 6. *Solanum carolinense* | 5 | No | FACU |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 15 | x 4 = | 60 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 100 (A) | | 235 (B) |

Prevalence Index = B/A = 2.35

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 1F

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-14 | 10YR 3/1 | 100 | | | | | Loamy/Clayey | |
| 14-24 | 10YR 4/2 | 100 | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
X FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): _____
Water Table Present? Yes ____ No X Depth (inches): _____
Saturation Present? Yes ____ No X Depth (inches): _____
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 2A

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 2-4 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Varna silt loam (223C2) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No | **Is the Sampled Area within a Wetland?** **Yes** X **No** |
| Hydric Soil Present? | Yes X | No | |
| Wetland Hydrology Present? | Yes X | No | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Salix amygdaloides* | 20 | Yes | FACW |
| 2. *Populus deltoides* | 20 | Yes | FAC |
| 3. *Crataegus mollis* | 10 | Yes | FAC |
| 4. | | | |
| 5. | | | |
| | 50 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | =Total Cover | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Phalaris arundinacea* | 100 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 | =Total Cover | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 120 | x 2 = | 240 |
| FAC species | 30 | x 3 = | 90 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 150 (A) | | 330 (B) |

Prevalence Index = B/A = 2.20

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 2A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-3 | 10YR 3/1 | 100 | | | | | Loamy/Clayey | |
| 3-9 | 10YR 3/1 | 95 | 10YR 5/4 | 5 | C | M | Loamy/Clayey | Distinct redox concentrations |
| 9-10 | 10YR 5/2 | 95 | 10YR 5/6 | 5 | C | M | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
X Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Thick Root Mat
Depth (inches): 10

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
X Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
X Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No X | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): ___ |

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 2B

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 4-6 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Varna silt loam (223C2) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
No indicators met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Gleditsia triacanthos* | 30 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 30 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | =Total Cover | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Bromus inermis* | 60 | Yes | FACU |
| 2. *Solidago altissima* | 5 | No | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 65 | =Total Cover | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 95 | x 4 = | 380 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 95 (A) | | 380 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 2B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-8 | 10YR 3/1 | 100 | | | | | Loamy/Clayey | |
| 8-16 | 10YR 3/4 | 100 | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Thick Root Mat
Depth (inches): 16

**Hydric Soil Present?** Yes ____ No X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 2C

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 2-4 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Markham silt loam (531C2) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Typha angustifolia* | 100 | Yes | OBL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 100 | x 1 = | 100 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 100 (A) | | 100 (B) |

Prevalence Index = B/A = 1.00

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 2C

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-8 | 10YR 3/2 | 95 | 10YR 3/6 | 5 | C | M | Loamy/Clayey | Prominent redox concentrations |
| 8-24 | 10YR 4/2 | 95 | 10YR 3/4 | 5 | C | M | Loamy/Clayey | Distinct redox concentrations |
| 24-36 | 10YR 5/4 | 100 | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes X | No ___ | Depth (inches): 24 |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): ___ |

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 2D

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 4-6 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Markham silt loam (531C2) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
No indicators met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Bromus inermis* | 50 | Yes | FACU |
| 2. *Solidago altissima* | 50 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 100 | x 4 = | 400 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 100 (A) | | 400 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 2D

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-18 | 10YR 2/1 | 100 | | | | | Loamy/Clayey | |
| 18-24 | 10YR 6/4 | 100 | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 3A

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: R4SBC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No | **Is the Sampled Area within a Wetland?** Yes X No |
| Hydric Soil Present? | Yes X | No | |
| Wetland Hydrology Present? | Yes X | No | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. *Salix interior* | 10 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 10 =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Phragmites australis* | 75 | Yes | FACW |
| 2. *Setaria viridis* | 15 | No | UPL |
| 3. *Cirsium arvense* | 5 | No | FACU |
| 4. *Astragalus cicer* | 5 | No | UPL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 85 | x 2 = | 170 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 20 | x 5 = | 100 |
| Column Totals | 110 (A) | | 290 (B) |

Prevalence Index = B/A = 2.64

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 3A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-6 | 10YR 2/1 | 100 | | | | | Loamy/Clayey | |
| 6-10 | 10YR 2/1 | 98 | 10YR 5/4 | 2 | C | M | Loamy/Clayey | Distinct redox concentrations |
| 10-22 | 10YR 4/1 | 95 | 10YR 3/4 | 5 | C | M | Loamy/Clayey | Distinct redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No X | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): ___ |

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 3B

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
No indicators met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Elymus repens* | 80 | Yes | FACU |
| 2. *Hordeum jubatum* | 15 | No | FAC |
| 3. *Eupatorium altissimum* | 5 | No | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 15 | x 3 = | 45 |
| FACU species | 80 | x 4 = | 320 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals | 100 (A) | | 390 (B) |

Prevalence Index = B/A = 3.90

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 3B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-19 | 10YR 3/2 | 50 | 10YR 5/2 | 50 | C | M | Loamy/Clayey | Faint redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 3C

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: R4SBC

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Phalaris arundinacea* | 95 | Yes | FACW |
| 2. *Sonchus arvensis* | 5 | No | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 95 | x 2 = | 190 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 100 (A) | | 210 (B) |

Prevalence Index = B/A = 2.10

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 3C

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-9 | 10YR 3/1 | 95 | 10YR 5/4 | 5 | C | M | Loamy/Clayey | Distinct redox concentrations |
| 9-18 | 10YR 6/4 | 98 | 10YR 5/4 | 2 | C | M | Loamy/Clayey | Faint redox concentrations |
| 18-24 | 10YR 6/4 | 50 | 10YR 6/2 | 50 | C | M | Loamy/Clayey | Distinct redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No X | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): ___ |

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 3D

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 0-2 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ashkum silty clay loam (232A) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
No indicators met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Gleditsia triacanthos* | 5 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 5 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | =Total Cover | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Bromus inermis* | 75 | Yes | FACU |
| 2. *Solidago altissima* | 10 | No | FACU |
| 3. *Eupatorium altissimum* | 10 | No | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 95 | =Total Cover | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 90 | x 4 = | 360 |
| UPL species | 10 | x 5 = | 50 |
| Column Totals | 100 (A) | | 410 (B) |

Prevalence Index = B/A = 4.10

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 3D

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-13 | 10YR 2/1 | 100 | | | | | Loamy/Clayey | |
| 13-19 | 10YR 5/4 | 98 | 10YR 6/4 | 2 | C | M | Loamy/Clayey | Faint redox concentrations |
| 19-25 | 10YR 5/6 | 70 | 10YR 7/3 | 30 | C | M | Loamy/Clayey | Distinct redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): _____
Water Table Present? Yes ____ No X Depth (inches): _____
Saturation Present? Yes ____ No X Depth (inches): _____
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery | City/County: Elwood/Will | Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs | State: IL | Sampling Point: 4A

Investigator(s): Alex Yellick, Ben Hodapp | Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain | Local relief (concave, convex, none): Concave

Slope (%): 20-30 | Lat: 41.396816 | Long: -88.137940 | Datum:

Soil Map Unit Name: Ozaukee silt loam (530F) | NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** Yes X No ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer negundo* | 30 | Yes | FAC |
| 2. *Acer saccharinum* | 30 | Yes | FACW |
| 3. *Ulmus rubra* | 30 | Yes | FAC |
| 4. | | | |
| 5. | | | |
| | 90 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | | =Total Cover | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Pilea pumila* | 40 | Yes | FACW |
| 2. *Bidens frondosa* | 30 | Yes | FACW |
| 3. *Persicaria hydropiperoides* | 10 | No | OBL |
| 4. *Leersia oryzoides* | 10 | No | OBL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 90 | =Total Cover | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20 | x 1 = | 20 |
| FACW species | 100 | x 2 = | 200 |
| FAC species | 60 | x 3 = | 180 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 180 (A) | | 400 (B) |

Prevalence Index = B/A = 2.22

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Unknown immature woodland grass groundcover species <10%.

## SOIL

Sampling Point: 4A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-23 | 10YR 2/1 | 95 | 7.5YR 4/4 | 5 | C | M | Loamy/Clayey | Prominent redox concentrations |
| 23-24 | 10YR 5/2 | 100 | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No X | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes X | No ___ | Depth (inches): 10 |

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 4B

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 20-30 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ozaukee silt loam (530F) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Carya cordiformis* | 20 | Yes | FACU |
| 2. *Acer saccharinum* | 20 | Yes | FACW |
| 3. *Ulmus rubra* | 20 | Yes | FAC |
| 4. | | | |
| 5. | | | |
| | 60 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. *Lonicera tatarica* | 10 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 10 | =Total Cover | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | | =Total Cover | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. *Parthenocissus quinquefolia* | 3 | No | FACU |
| 2. | | | |
| | 3 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 20 | x 2 = | 40 |
| FAC species | 20 | x 3 = | 60 |
| FACU species | 33 | x 4 = | 132 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 73 (A) | | 232 (B) |

Prevalence Index = B/A = 3.18

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Unknown immature woodland grass groundcover species @ 75%.

## SOIL

Sampling Point: 4B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-10 | 10YR 3/2 | 100 | | | | | Loamy/Clayey | |
| 10-16 | 10YR 5/2 | 100 | | | | | Loamy/Clayey | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): _____
Water Table Present? Yes ____ No X Depth (inches): _____
Saturation Present? Yes ____ No X Depth (inches): _____
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 5A

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 4-6 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ozaukee silt loam (530C2) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Gleditsia triacanthos* | 20 | Yes | FACU |
| 2. *Quercus macrocarpa* | 10 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 30 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. *Lonicera tatarica* | 50 | Yes | FACU |
| 2. *Phragmites australis* | 50 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 100 | =Total Cover | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Leersia oryzoides* | 40 | Yes | OBL |
| 2. *Pilea pumila* | 30 | Yes | FACW |
| 3. *Carex lacustris* | 30 | Yes | OBL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 | =Total Cover | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 70 | x 1 = | 70 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 70 | x 4 = | 280 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 230 (A) | | 540 (B) |

Prevalence Index = B/A = 2.35

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 5A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-8 | 10YR 3/1 | 95 | 10YR 5/4 | 5 | C | M | Loamy/Clayey | Distinct redox concentrations |
| 8-18 | 10YR 5/2 | 95 | 10YR 5/6 | 5 | C | M | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No X | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): ___ |

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 5B

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 4-6 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ozaukee silt loam (530C2) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
No indicators met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Gleditsia triacanthos* | 40 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 40 | =Total Cover | |
| **Sapling/Shrub Stratum** (Plot size: 15 feet) | | | |
| 1. *Ribes cynosbati* | 10 | Yes | FAC |
| 2. *Lonicera tatarica* | 10 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 20 | =Total Cover | |
| **Herb Stratum** (Plot size: 5 feet) | | | |
| 1. *Poa pratensis* | 40 | Yes | FAC |
| 2. *Solidago altissima* | 40 | Yes | FACU |
| 3. *Eupatorium altissimum* | 10 | No | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 90 | =Total Cover | |
| **Woody Vine Stratum** (Plot size: 30 feet) | | | |
| 1. | | | |
| 2. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 50 | x 3 = | 150 |
| FACU species | 90 | x 4 = | 360 |
| UPL species | 10 | x 5 = | 50 |
| Column Totals | 150 (A) | | 560 (B) |

Prevalence Index = B/A = 3.73

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 5B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-14 | 10YR 3/1 | 100 | | | | | Loamy/Clayey | |
| 14-28 | 10YR 3/1 | 98 | 10YR 5/4 | 2 | C | M | Loamy/Clayey | Distinct redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): _____
Water Table Present? Yes ____ No X Depth (inches): _____
Saturation Present? Yes ____ No X Depth (inches): _____
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 6A

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 20-30 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ozaukee silt loam (530F) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No | **Is the Sampled Area within a Wetland?** **Yes** X **No** |
| Hydric Soil Present? | Yes X | No | |
| Wetland Hydrology Present? | Yes X | No | |

Remarks:
All indicators met; area is a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Typha angustifolia* | 50 | Yes | OBL |
| 2. *Eupatorium altissimum* | 35 | Yes | UPL |
| 3. *Poa pratensis* | 10 | No | FAC |
| 4. *Sonchus arvensis* | 5 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 50 | x 1 = | 50 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 5 | x 4 = | 20 |
| UPL species | 35 | x 5 = | 175 |
| Column Totals | 100 (A) | | 275 (B) |

Prevalence Index = B/A = 2.75

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** **Yes** X **No**

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 6A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-10 | 10YR 3/1 | 98 | 10YR 5/3 | 2 | C | M | Loamy/Clayey | Distinct redox concentrations |
| 10-18 | 10YR 5/2 | 95 | 10YR 5/4 | 5 | C | M | Loamy/Clayey | Distinct redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ___ | No X | Depth (inches): ___ |
| Water Table Present? | Yes ___ | No X | Depth (inches): ___ |
| Saturation Present? (includes capillary fringe) | Yes ___ | No X | Depth (inches): ___ |

**Wetland Hydrology Present?** **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/12/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: 6B

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 4-6 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Ozaukee silt loam (530C2) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No X | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No X | |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks:
No indicators met; area is not a wetland.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. *Lonicera tatarica* | 15 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15 =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Solidago altissima* | 95 | Yes | FACU |
| 2. *Poa pratensis* | 5 | No | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 5 | x 3 = | 15 |
| FACU species | 110 | x 4 = | 440 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals | 115 (A) | | 455 (B) |

Prevalence Index = B/A = 3.96

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: 6B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-12 | 10YR 3/1 | 100 | | | | | Loamy/Clayey | |
| 12-32 | 10YR 3/1 | 98 | 10YR 5/4 | 2 | C | M | Loamy/Clayey | Distinct redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): _____
Water Table Present? Yes ____ No X Depth (inches): _____
Saturation Present? Yes ____ No X Depth (inches): _____
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E
## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery | City/County: Elwood/Will | Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs | State: IL | Sampling Point: IA-A

Investigator(s): Alex Yellick, Ben Hodapp | Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain | Local relief (concave, convex, none): Concave

Slope (%): 2-4 | Lat: 41.396816 | Long: -88.137940 | Datum:

Soil Map Unit Name: Elliott silt loam (146B) | NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** Yes ____ No X |
| Hydric Soil Present? | Yes ____ | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | |

Remarks:
One indicator not met; area is not a wetland. Area is located on non-native fill material.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Persicaria hydropiper* | 75 | Yes | OBL |
| 2. *Phalaris arundinacea* | 10 | No | FACW |
| 3. *Hordeum jubatum* | 10 | No | FAC |
| 4. *Setaria viridis* | 5 | No | UPL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 75 | x 1 = | 75 |
| FACW species | 10 | x 2 = | 20 |
| FAC species | 10 | x 3 = | 30 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals | 100 (A) | | 150 (B) |

Prevalence Index = B/A = 1.50

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: IA-A

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-28 | 10YR 3/2 | 60 | 10YR 4/3 | 40 | C | M | Loamy/Clayey | Faint redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

**Indicators for Problematic Hydric Soils[3]:**

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** ____

Remarks:

Soils appeared to be non-native and likely fill material.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

## Site-Specific Environmental Assessment - Appendix E

## WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Abe Lincoln National Cemetery City/County: Elwood/Will Sampling Date: 09/11/2018

Applicant/Owner: Veterans Affairs State: IL Sampling Point: IA-B

Investigator(s): Alex Yellick, Ben Hodapp Section, Township, Range: Sec. 31, Twp. 34N, Rng. 10E

Landform (hillside, terrace, etc.): Till Plain Local relief (concave, convex, none): Concave

Slope (%): 2-4 Lat: 41.396816 Long: -88.137940 Datum:

Soil Map Unit Name: Elliott silt loam (146B) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil X , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

### SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No | **Is the Sampled Area within a Wetland?** Yes No X |
| Hydric Soil Present? | Yes | No X | |
| Wetland Hydrology Present? | Yes X | No | |

Remarks:

One indicators not met; area is not a wetland. Area is located on non-native fill material.

### VEGETATION – Use scientific names of plants.

| Tree Stratum (Plot size: 30 feet) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Sapling/Shrub Stratum (Plot size: 15 feet)** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | =Total Cover | | |
| **Herb Stratum (Plot size: 5 feet)** | | | |
| 1. *Echinochloa crus-galli* | 80 | Yes | FACW |
| 2. *Persicaria hydropiper* | 15 | No | OBL |
| 3. *Dichanthelium linearifolium* | 5 | No | UPL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| | 100 =Total Cover | | |
| **Woody Vine Stratum (Plot size: 30 feet)** | | | |
| 1. | | | |
| 2. | | | |
| | =Total Cover | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 15 | x 1 = | 15 |
| FACW species | 80 | x 2 = | 160 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 5 | x 5 = | 25 |
| Column Totals | 100 (A) | | 200 (B) |

Prevalence Index = B/A = 2.00

**Hydrophytic Vegetation Indicators:**

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Hydrophytic Vegetation Present?** Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: IA-B

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth | Matrix | | Redox Features | | | | | |
|---|---|---|---|---|---|---|---|---|
| (inches) | Color (moist) | % | Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
| 0-25 | 10YR 3/2 | 60 | 10YR 4/3 | 40 | C | M | Loamy/Clayey | Faint redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Loamy Mucky Mineral (F1)
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**Indicators for Problematic Hydric Soils[3]:**

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)
___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____
Depth (inches): _____

**Hydric Soil Present?** **Yes** ____ **No** X

Remarks:

Area is within a disturbed, non-native landscape.

## HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
X Geomorphic Position (D2)
X FAC-Neutral Test (D5)

**Field Observations:**

Surface Water Present? Yes ____ No X Depth (inches): _____
Water Table Present? Yes ____ No X Depth (inches): _____
Saturation Present? Yes ____ No X Depth (inches): _____
(includes capillary fringe)

**Wetland Hydrology Present?** **Yes** X **No** ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

# APPENDIX C

## Site Photographs

**Photo 1.** Wetland 1 – View to the North

**Photo 2.** Wetland 2/Waterway A – View to the Northeast

**Photo 3.** Wetland 2/Waterway A – View to the Northeast

**Photo 4.** Wetland 3 – View to the West

**Photo 5.** Wetland 3 – View to the North

**Photo 6.** Wetland 4/Waterway B – View to the South

**Photo 7.** Wetland 5/Waterway C – View to the South

**Photo 8.** Wetland 6/Waterway C – View to the North

**Photo 9.** Waterway B – View to the North

**Photo 10.** Waterway C – View to the South

**Photo 11.** Waterway D (Grant Creek) – View to the East

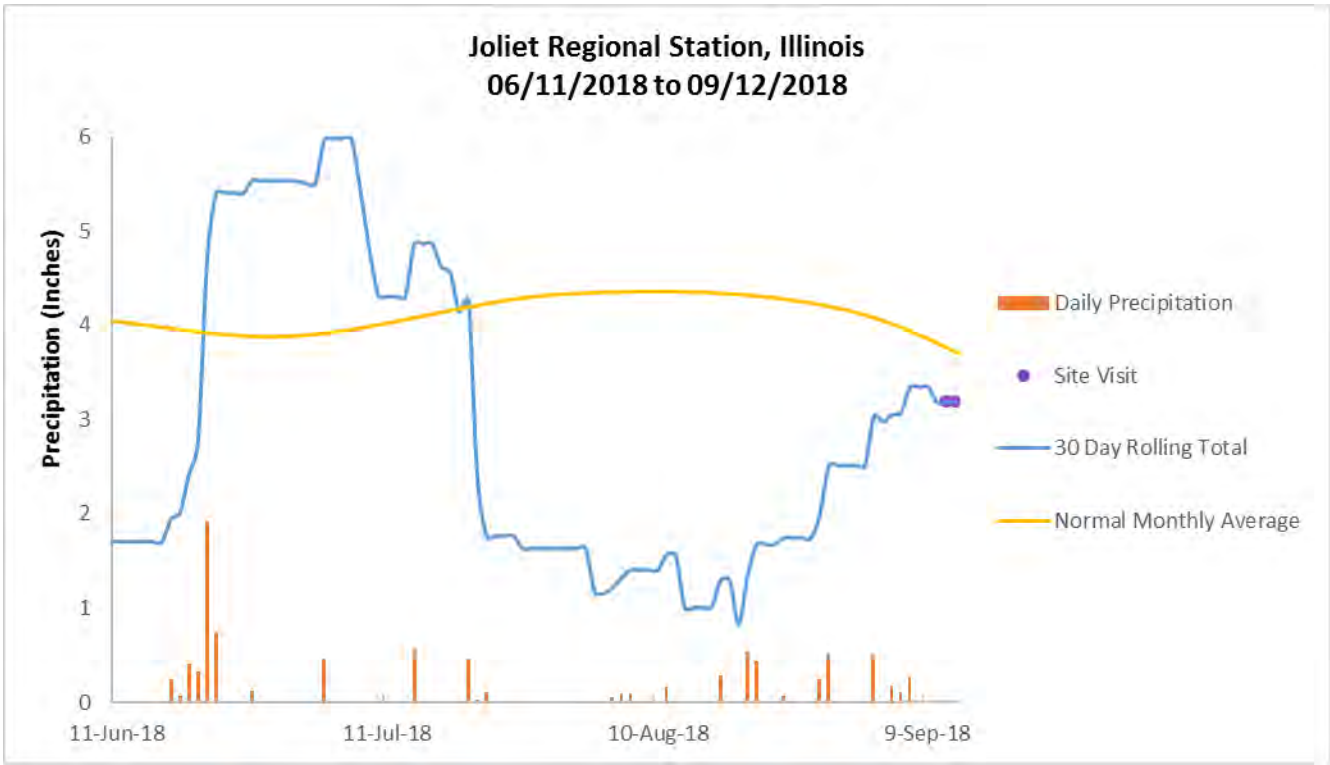
**Photo 12.** Investigation Area A – View to the East

**Photo 13.** Investigation Area B – View to the South

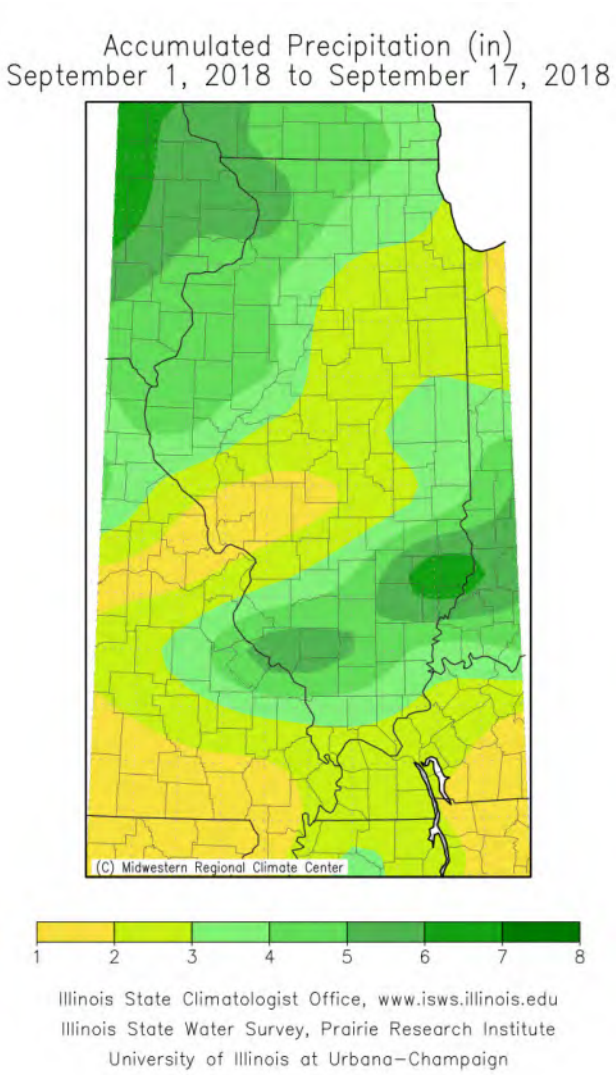
# APPENDIX D

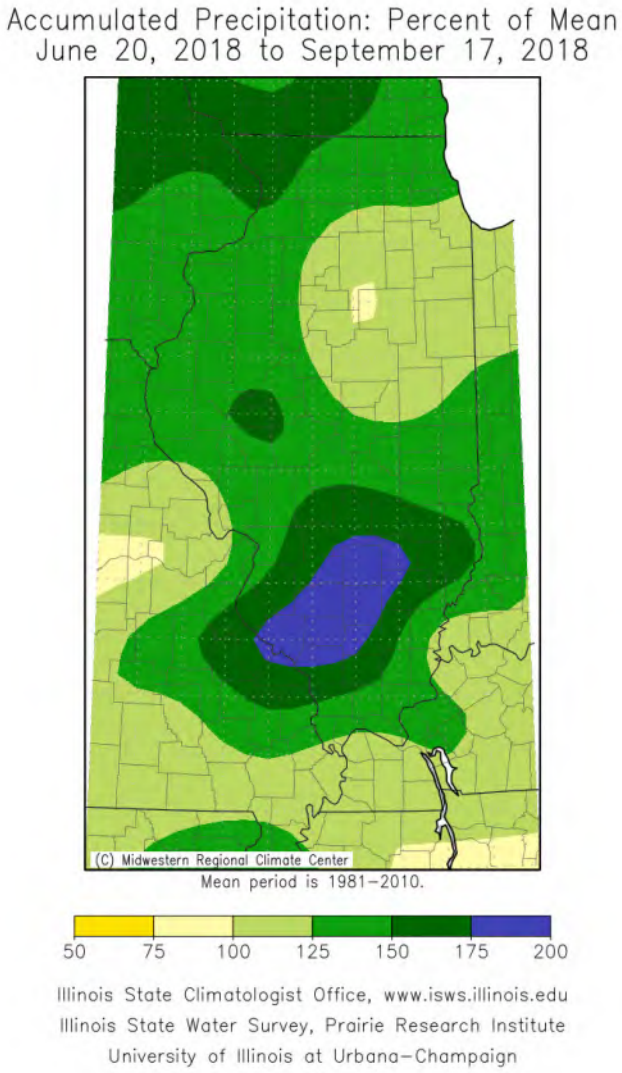
## Antecedent Precipitation Record

# 30 Day Rolling Total Precipitation Graph




Precipitation Data Sources:
https://www.wunderground.com/history/monthly/us/il/joliet/KJOT/date/2018-6
https://www.isws.illinois.edu/statecli/newnormals/normals.USC00114530.txt




Source: https://www.isws.illinois.edu/statecli/Current/current.htm