DRAFT ENVIRONMENTAL ASSESSMENT

OF THE PROPOSED COLUMBARIUM CEMETERY FOR THE ABRAHAM LINCOLN NATIONAL CEMETERY

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EXECUTIVE SUMMARY

The Department of Veterans Affairs (VA) is proposing to acquire 15 acres of usable land in South Barrington, Illinois for a new columbarium cemetery to support the Abraham Lincoln National Cemetery. This Environmental Assessment (EA) evaluates the potential impacts of the Proposed Action on the environment, including natural and historical resources, social and economic aspects, and environmental justice. The information presented in this EA, along with input from the public, will assist VA in its decision-making process prior to committing resources for the Proposed Action.

This document has been prepared in compliance with the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [USC] 4321 et seq.), the President's Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508), and Environmental Effects of the Department of Veterans Affairs Actions (38 CFR Part 26).

The purpose of the Proposed Action is to continue to enable the National Cemetery Administration to provide enhanced service to eligible Veterans and their families by providing a preferred burial option to eligible Veterans nearer to the urban core of Chicago and on the north side of Chicago metropolitan area the next 100 years.

The Proposed Action is needed to meet the National Cemetery Administration's goal of providing eligible Veterans with reasonable access to burial options. The expansion will accommodate cremated remains in a columbaria cemetery and will be developed as a branch of the existing Abraham Lincoln National Cemetery located in Elwood, Illinois.

In this EA, the following resource areas are evaluated: aesthetics; air quality; cultural, historic, and archaeological resources; geology and soils; hydrology and water quality; wildlife and habitat; noise; land use; wetlands, floodplains, and coastal zone management; socioeconomics; community services; solid and hazardous waste; transportation and parking; utilities; environmental justice; and other environmental concerns. Cumulative effects and potential for generating substantial controversy are also discussed. A summary of the Preferred Action Alternative's environmental impacts for each resource area is presented in Chapter 2, Table 2-1.

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ACRONYMS

AADT	Annual Average Daily Traffic
ALNC	Abraham Lincoln National Cemetery
AQI	Air Quality Index
BACOG	Barrington Area Council of Governments
BCFPD	Barrington Countryside Fire Protection District
BMP	Best Management Practices
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CO	Carbon Monoxide
ComEd	Commonwealth Edison Company
CZMA	Coastal Zone Management Act of 1972
EA	Environmental Assessment
EcoCAT	Ecological Compliance Assessment Tool
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FPPA	Farm Protection Policy Act
HAP	Hazardous Air Pollutant
IDNR	Illinois Department of Natural Resources
IDPH	Illinois Department of Public Health
IEPA	Illinois Environmental Protection Agency

IPaC	Information for Planning and Conservation
msl	mean sea level
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NCA	National Cemetery Administration
NHPA	National Historic Preservation Act
NO_2	Nitrogen Dioxide
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
O_3	Ozone
Pb	Lead
$PM_{2.5}$	Particulate Matter 2.5
PM_{10}	Particulate Matter 10
ppm	parts per million
REC	Recognized Environmental Conditions
SHPO	State Historic Preservation Office
SIP	State Implement Plan
SO_2	Sulfur Dioxide
tpy	tons per year
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank
VA	U.S. Department of Veterans Affairs

CHAPTER 1: INTRODUCTION

Introduction

This chapter provides the reader with necessary introductory and background information concerning the Proposed Action for proper analytical context; identifies the purpose of and the need for the Proposed Action; and identifies relevant environmental documents. Chapter 4 provides a summary of public and agency involvement as well as key issues and concerns identified.

This Environmental Assessment (EA) has been prepared to identify, analyze, and document the potential physical, environmental, cultural, and socioeconomic effects associated with the action proposed by the Department of Veterans Affairs (VA), a Federal agency. VA proposes to acquire 15 acres of usable land located at 10 South Freeman Road, South Barrington, Illinois for a new columbarium national cemetery (See Figure 1-1).

Preparation of this EA is required in accordance with the National Environmental Policy Act of 1969 (NEPA) (42 USC 4321 *et seq.*), the President's Council on Environmental Quality (CEQ) Regulations Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), and Environmental Effects of the Department of Veterans Affairs Action (38 CFR Part 26). This EA has also been prepared in accordance with VA's NEPA Interim Guidance for Projects (VA 2010).

This EA examines two alternatives, the Action Alternative and the No Action Alternative as defined below:

- **Action Alternative**: Acquire approximately 15 acres of land to develop for a new columbarium cemetery.
- **No Action Alternative**: VA would not acquire land and a new columbarium cemetery would not be constructed.

Figure 1-1: Site Location

Background

The VA National Cemetery Administration (NCA) honors Veterans and their families with final resting places in national shrines and with lasting tributes that commemorate their service and sacrifice to the nation. NCA maintains approximately 3.3 million gravesites at 136 national

cemeteries, and 33 soldiers' lots and monument sites in 40 states and Puerto Rico (VA 2014a). VA's Office of Construction and Facility Management's mission is to advance VA's mission in support of the nation's Veterans by planning, designing, constructing, and acquiring major facilities, and setting design and construction standards.

In order to provide burial options closer to Veterans, the NCA is in the process of developing columbarium-only sites. The project, called the Urban Initiative, would provide burial options for Veterans and their family who choose cremation close to a city core. The initiative seeks to establish a columbarium-only cemetery site in Chicago.

In this EA, VA is seeking developable land in the northern Chicago metropolitan area on which to develop the columbaria cemetery. A Master Plan is in the process of being developed to eventually accommodate approximately 50,000 niches developed in approximate 10-year increments over a 100-year period. The initial construction project would include columbarium walls providing approximately 5,000 niches and the necessary support facilities to provide for cemetery operations and maintenance.

Purpose and Need

The purpose of the Proposed Action is to continue to enable the NCA to provide enhanced service to eligible Veterans and their families by providing a preferred burial option to eligible Veterans nearer to the urban core of the city and on the North side of Chicago for the next 100 years. The Proposed Action is needed to meet the NCA's goal of providing eligible Veterans with reasonable access to VA burial options. The expansion will accommodate cremated remains in a columbaria cemetery and will be developed as a branch of the existing Abraham Lincoln National Cemetery located in Elwood, Illinois approximately 47 miles southwest of downtown Chicago.

Decision-Making

This EA has been prepared to identify, analyze, and document the potential physical, environmental, cultural, and socioeconomic effects associated with VA's proposed expansion of the FBNC.

VA, as a Federal agency, is required to incorporate environmental considerations into its decision-making process for the actions it proposes to undertake. This is done in accordance with the regulations identified in Section 1.1.

In accordance with the NEPA regulations described above, this EA: allows for public input into the Federal decision-making process; provides Federal decision-makers with an understanding

of potential environmental effects of their decisions, before making these decisions; identifies measures the Federal decision-maker could implement to reduce potential adverse environmental effects; and documents the NEPA process.

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

CHAPTER 2: ALTERNATIVES

Introduction

This section provides the reader with necessary information regarding the Proposed Action and any alternatives. The Proposed Action Alternative is presented alongside a No Action Alternative to provide a baseline for comparing the environmental impacts. VA did not evaluate and dismiss any other alternatives.

Evaluated Alternatives

2.1 Proposed Action Alternative

Under the Proposed Action Alternative, VA would acquire 15-acres of land north of the Chicago metropolitan area on which to develop the columbaria cemetery facility. The project would include columbarium walls providing approximately 5,000 niches and the necessary support facilities to provide for cemetery operations and maintenance. The peaceful, dignified, and contemplative site will include a main entrance wall and gate feature, natural and ornamental landscaping features with an irrigation system to maintain beautiful grounds for the visiting public, a US Flagpole, a funeral cortege parking area, a Committal Service Shelter, a Memorial Marker Wall, and a small Public Restroom building with electronic gravesite locator and small maintenance storage room.

2.2 No Action Alternative

Under the No Action Alternative, VA would not acquire land for a new columbaria cemetery facility. The ALNC would not be expanded, no new buildings would be constructed, and no burials would occur on the Site. The Site would continue to be for sale. The existing housing structures would remain.

Summary of Environmental Impacts

Table 2-1 below summarizes the environmental impacts that would occur from the implementation of the Proposed Action Alternative and the No Action Alternative. Mitigation measures are summarized in Chapter 5.

Table 2-1: Environmental Impacts of the Alternatives

Impact Topic	Proposed Action Alternative	No Action Alternative
Aesthetics	Minor, short-term, adverse impacts from construction equipment and activities; minor, long-term adverse impacts from removal of vegetation.	None
Air Quality	Minimal, short-term, adverse impacts from fugitive dust and emissions from construction activities and vehicles; long-term, negligible adverse impacts due to emissions from visitors to and from the project area.	None
Cultural, Historical, and Archaeological Resources	None	None
Geology and Soils	Minor, short-term, adverse impacts from construction exposing soils to erosion and sedimentation. Long-term adverse impacts to topography from leveling to build facilities.	None
Hydrology and Water Quality	Irrigation of the columbaria cemetery facility would result in a long-term, minor adverse impact on groundwater.	None
Wildlife and Habitat	Vegetative clearing would result in minimal, long-term, adverse impacts.	None
Noise	Temporary minimal adverse impacts to noise from construction activities. Long-term increase in noise levels from operational activities at the facility including ceremonial rifle volleys.	None
Land Use	None	None
Wetlands, Floodplains, and Coastal Zone Management	None	None
Socioeconomics	Minimal, beneficial impacts from jobs at the facility for the long-term.	None
Community Services	Long-term, negligible adverse impact from increased need from emergency services. Short-term, negative impacts to the Paul Douglass Forest Preserve from noise.	None
Solid and Hazardous Waste	None	None

Impact Topic	Proposed Action Alternative	No Action Alternative
Transportation and Parking	Temporary increase of construction vehicles on local roadways would have minimal, short-term, adverse impact to transportation.	None
Utilities	Negligible, long-term, adverse impacts from increased demand on electricity.	None
Environmental Justice	None	None

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CHAPTER 3: AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Introduction

This section analyzes the existing environmental conditions in the project area and the potential environmental effects of the Action Alternative and the No Action Alternative.

The terms "effect" and "impact" are synonymous as used in this EA and can be considered either beneficial or adverse. A summary of potential environmental impacts of the Alternatives can be found in Chapter 2, Table 2-1. The terms direct, indirect, and cumulative are used to describe the environmental effects. The following definitions as defined in NEPA (40 CFR 1508) are:

- **Direct effects –** those effects which are caused by the action and occur at the same time and place as the action.
- **Indirect effects –** those effects which are caused by the action and occur later in time or further removed in distance but are still reasonably foreseeable and causally linked to the action.
- **Cumulative effects –** impacts to the environment which result from incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such action.

The term "significant" has specific meaning as defined in NEPA (40 CFR 1508.27) that includes both context and intensity. The effects/impacts are further characterized by their relative magnitude and for this EA are separated into three categories.

- Areas of No or Negligible Impacts
- Areas of Minor, Less Than Significant Impacts
- Areas of Moderate, Less Than Significant Impacts

Effects are also expressed in terms of duration. Definitions for short-term and long-term are:

- **Short-term –** Used here to indicate the time during which construction is ongoing, until the proposed action has been implemented.
- **Long-term –** Time interval after the proposed action has been implemented, following construction, during which there are only normal operation and maintenance activities.

Aesthetics

The project area is located within the Village of South Barrington and is surrounded by the South Barrington Homestead residential community to the west, the Paul Douglas Forest Preserve to the east, an undeveloped property to the north, and FANUC America Corporation to the south. The project area is located north of the village of Hoffman Estates and approximately 25 miles northwest of Chicago.

The project area is comprised of two residential properties and their associated manicured lawns with several scattered trees. A small pond is located between the two residential properties. Trees line the west, south, and east sides of the project area.

Impacts of the Action Alternative

The acquisition of approximately 15 acres of land by VA would not result in direct impacts to aesthetics. The expansion of ALNC would include the construction of new columbarium walls, a Committal Service Shelter, a Memorial Marker Wall, a small maintenance/restroom building, and a funeral cortege parking area. Construction vehicles and equipment would also temporarily impact views of the project area. Vegetative clearing would be required depending on the location of the structures; however, the columbaria cemetery facility would incorporate natural and ornamental landscaping features. Construction of the new structures within the project area would result in permanent changes to aesthetic quality of the site. The existing tree line between the South Barrington Homestead residential community and the project area would provide some visual screening of the new facility. The columbaria cemetery facility would be designed to enhance and preserve views of the natural landscape and would be in compliance with all applicable State, County, and Municipal planning regulations. The proposed action would result in minor short- and long-term, adverse impacts to the aesthetics of the project area and its surroundings.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land for a new columbaria cemetery facility. The ALNC would not be expanded, no new buildings would be constructed, and no cemeterial services would occur on the project area. Existing structures on the project area would remain. Therefore, the aesthetic quality of the project area would remain the same. There are currently no plans that exist to develop the project area; however, the property is for sale and may be purchased and redeveloped in the future. No impacts to aesthetics would result from the No Action Alternative.

Mitigation/Management Measures

The structures would be designed to enhance and preserve views of the natural landscape and would be in compliance with all applicable planning documents.

Air Quality

Under the authority of the Clean Air Act (CAA) (42 U.S.C. §7401 et seq.), the U.S. Environmental Protection Agency (EPA) regulates air emissions and pollutants. The EPA has set National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: ozone (O_3), particulate matter ($PM_{2.5}$ and PM_{10}), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), and lead (Pb). If any of these standards are exceeded in a geographic area (City, County, etc.), the area is considered a non-attainment area for that pollutant (EPA 2016).

Each State (or regional government) is required by the EPA to develop a State Implementation Plan (SIP) that identifies the NAAQS attainment status for each pollutant. Under the CAA, a Conformity Determination is required when a Federal action occurs in or affects a non-attainment area for any criteria pollutant. Cook County is designated as a moderate non-attainment area for O_3. A moderate classification is used for areas where the parts per million (ppm) is between 0.086 and 0.100 (EPA 2018).

The EPA has also identified 187 air toxics known as Hazardous Air Pollutants (HAPs). A Title V Operating Permit is required for any major source of HAPs or criteria pollutants. Any emissions source that has the potential to emit more than 10 tons per year (tpy) of a single HAP or 25 tpy of any combination of HAPs is considered a major source. Major sources are defined as having the potential to emit more than 100 tpy of any criteria pollutant in an attainment area. Lower levels of emissions may qualify a source as major if the area is designated as non-attainment for any criteria pollutants (EPA 2017). No sources of regulated air emissions currently exist at the project area.

The Bureau of Air of the of the Illinois Environmental Protection Agency (IEPA) monitors and evaluates air quality in Illinois. The Bureau of Air provides an annual report using 140 instruments at 65 locations to monitor air quality. Using the Air Quality Index (AQI), which measures the daily air pollution health risk on a six-category scale from “Good” to “Hazardous”, the 2016 Annual Air Quality Report stated that AQI for the North and West Suburbs of Chicago sector was “Good” or “Moderate” for 62.8 percent or 33.3 percent of the year. The AQI was listed as “Unhealthy for Sensitive Groups” 13 times in 2016 and “Unhealthy” once; the occurrence of “Unhealthy” air quality was due to elevated levels of 0_3. No 0_3 advisories were issued in 2016 (IEPA 2016).

Impacts of the Action Alternative

The acquisition of approximately 15 acres of the project area by VA would not result in direct impacts to air quality. The expansion of ALNC would include the construction of new columbarium walls, a Committal Service Shelter, a Memorial Marker Wall, a small maintenance/restroom building, and a funeral cortege parking area. Construction of the new

structures within the property area would result in a temporary increase in fugitive dust and emissions from construction activities and vehicles. Best management practices (BMPs) would be implemented to minimize the impact to air quality to the extent practicable. There would be no permanent emission sources on the site after construction is completed. Construction activities would result in minimal, short-term adverse impacts to air quality. After construction, air quality would be affected by emissions from vehicles of visitors to the site including funeral corteges. These emissions would result in minor, long-term adverse impacts to air quality.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land for a new columbaria cemetery facility and the expansion of ALNC would not occur. No new structures would be constructed, and there would be no increase in emissions from construction activities. The No Action Alternative would not result in an increase in visitors to the ALNC. No impacts to air quality would result from the No Action Alternative.

Mitigation/Management Measures

BMPs, such as the watering of exposed, disturbed soil, would be implemented to minimize the impact to air quality during construction.

Cultural, Historic, and Archaeological Resources

Cultural Resources

The National Historic Preservation Act (NHPA) of 1966 governs Federal agencies in their handling of historic properties. Section 106 of the NHPA requires that federal agencies consider the effects of their actions on historic resources. Under the NHPA, VA must evaluate impacts to any district, site, building, structure, or object listed in or eligible for listing on the National Register of Historic Places (NRHP) that may be affected by the Proposed Action. Section 106 encourages preservation of historic properties; however, at times, impacts to historic resources cannot be avoided. When the government must impact historic resources, they are required to consult with local and Federal agencies responsible for historic preservation, Native American Tribes, local citizens, and other groups with an interest in historic preservation. As design progresses, VA will initiate consultations with the Illinois State Historic Preservation Office (SHPO), the Citizen Potawatomi Nation, the Forest County Potawatomi Community of Wisconsin, the Hannahville Indian Community, the Kickapoo Tribe of Oklahoma, the Little Traverse Bay Bands of Odawa Indians, the Menominee Indian Tribe of Wisconsin, the Miami Tribe of Oklahoma, and the Prairie Band Potawatomi Nation.

Historic Resources

In March 2018, an initial cultural resource impact study was completed. As identified in the 2018 study, the project area is improved with two private single-family houses, both of which were constructed circa 1953 according to county tax assessment records. Because these buildings exceed fifty years of age, the buildings could be eligible for NRHP listing; however, based on a reconnaissance level survey, the buildings most likely do not meet one or more of the National Register Criteria for Evaluation, as defined by the National Park Service, and would not be determined eligible for NRHP listing. Because these resources exceed fifty years of age, the SHPO may require additional information or a formal Determination of Eligibility.

Although no previous formal surveys or evaluations of aboveground resources within the study area were located, the potential for NRHP-eligible resources cannot be eliminated; however, based on a reconnaissance-level survey and a study of historic maps, with the exception of the two residential structures within the boundaries of the project area, no built resources that are directly visible from the project area that are greater than fifty years of age were identified. Another single-family house located at 81 West Mundhank Road appears to be contemporaneous with the residential structures within the project area but will not be directly affected by the proposed action.

According to available data, there are no listed, determined eligible, or previously surveyed historic resources (objects, structures, buildings, districts, or sites) within a 0.25-mile radius of the project area. The closest listed individual property is the Sunderlage Farm Smokehouse, located approximately 1.2 miles to the south in Hoffman Estates, Cook County, Illinois.

Archaeological Resources

The site file review indicated that the project area had not been surveyed for the presence of archaeological resources. Three archaeological surveys have been conducted within a 0.25-acre radius of the project area, two of which resulted in the identification of two archaeological sites in the vicinity of the project area: the Vinegar Farmstead Site (11CK782) and Site 11CK832. Both are the remains of historic farmsteads.

The Vinegar Farmstead site is located approximately .37 miles to the west of the proposed site. At that time of the survey, the site was an abandoned farmstead with standing structures, structural remains, and an artifact scatter. The structures, both standing and demolished, included the frame farmstead house, sheds, barns, a silo, an outhouse, a garage, wells, and concrete foundations. A total of 106 artifacts were collected, consisting mainly of bottle glass, ceramics, animal bone, and architectural materials, mainly dating from the late nineteenth and twentieth centuries. The Vinegar Farmstead appears to have been founded by the late

nineteenth century and was occupied into the late twentieth century before its abandonment. This site was found to be not eligible for NRHP listing.

Site 11CK832 is located approximately 0.26 miles to the south of the project area. The site consisted of artifacts recovered from a one-acre woodlot and from the surface of an adjacent agricultural field. A total of 45 artifacts, mainly twentieth century ceramics and bottle glass, were recovered from the site area. Historic maps indicate that a structure was present at this location as early as 1861, but that structure is not depicted on subsequent maps. However, another structure is depicted at this location on early through late twentieth century maps. The archeological survey concluded that the artifacts recovered are most likely associated with this later occupation. The site was found to be not eligible for NRHP listing.

A review of soil survey maps suggested that any archaeological resources that may be present would likely be restricted to the initial eight inches or so below the ground surface through most of the project area; however, the southeast corner of the project area could contain archaeological materials to as much as twelve inches below the ground surface. A review of historic maps and photographs suggest limited development within the project area; the only known improvements on site remain extant and date from the early 1950s.

Impacts of the Action Alternative

Historic Resources

Based on the scope of the site acquisition and development, the Area of Potential Effect (APE) for direct effects is limited to the project area and a 0.25-mile radius surrounding the project area for indirect effects. The assumed scale and character of the Proposed Action minimizes visibility of the new development beyond a 0.25-mile radius.

There are no properties currently listed in or determined eligible for listing in the NRHP within the APE based on the March 2018 study. The proposed action would require the demolition of two residences that exceed fifty years of age but are not currently determined eligible. Although an official determination is required from the SHPO, it is likely that these resources are not eligible for NRHP listing.

Indirect effects on aboveground historic properties are not anticipated because no built resources that are fifty years of age or older were identified within the APE. Because of the assumed scale and character of the development, it is unlikely that SHPO will require a formal architectural survey of the surrounding area for this undertaking. VA will coordinate with SHPO for an official determination of eligibility.

Archaeological Resources

Based on a review of historic maps, soils, proximity to sources of water, the results of previous archaeological investigations, and the presence and location of previously identified archaeological sites within or near the project area, there is a low potential for archaeological resources dating to the Historic period within the project area.

There also appears to be a low potential for archaeological resources associated with Native Americans. No prehistoric Native American sites have been located during the three archaeological surveys conducted within a 0.25-acre radius of the project area. Given that the project area is not located near drainages or marshes, the suitability for Native American habitation can be characterized as low. While there are no examples in the immediate vicinity of the project area, sites on upland landforms at some distance from drainages have occurred. However, such sites tend to be small in size and consist of relatively few artifacts. Given that the project area had been plowed for ninety years or more (ca. 1860 to 1950), and that the soil types describe a typical soil profile as consisting of a plow zone over B horizon soils, it would be unlikely that intact prehistoric Native American deposits would be present within the acquisition parcel.

If prehistoric Native American archaeological resources are present, such materials would have been subjected to plowing for minimally ninety years and most likely would lack depositional integrity. If lacking in depositional integrity, such resources would likely not be eligible for NRHP listing. Based on the low probability for the presence of archaeological resources that pre-date 1953 within the 15-acre acquisition parcel, therefore, no further archaeological investigations are warranted, and no impacts are anticipated from the Proposed Action.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land for the columbaria cemetery facility and the expansion of ALNC would not occur. The project area would remain with two housing structures. No changes would occur; therefore, no impacts to cultural, historic, or archaeological resources would occur.

Mitigation/Management Measures

VA would consult with the Illinois SHPO and tribes as design progresses.

Geology, Topography, and Soils

Geology and Topography

The project area is underlain by silurian dolostone, which comprises most of the top of the bedrock in Cook County (Leetaru et al. 2004). The project area is located within the Wheaton

Morainal Country subsection of the Central Lowland physiographic province (ISGS 2018). Wheaton Morainal Country contains physiographic features formed by continental glaciation, such as moraines, kettle topography, kames, eskers, and lakes, as well as plains and basins that were once glacier-bordered lakes (Willman 1971).

The topography of Cook County was formed from the deposition of glacial processes. The topography generally slopes down towards Lake Michigan with the highest point in the County approximately 1,000 feet above mean sea level (msl) (Leetaru et al. 2004). The project area is within the area covered by the Laurentide Ice Sheet during the Wisconsinian Glaciation (Willman 1971) resulting in topography that is rolling, moderately hilly, and containing numerous drumlins. The project area is generally gently sloped towards the east or towards the pond on site. The highest point of the site is located to the southwest and is 845 feet above msl; the lowest point is towards the northeast, where the property slopes to 816 ft above msl (Cook County, 2018). The topography surrounding the project area is similarly defined by rolling hills with wetland or ponds forming in low areas.

Soils

According to the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey, the project area contains five soil types: Ashkum silty clay loam 0 to 2 percent slopes; Peotone silty clay loam 0 to 2 percent slopes; Markham silt loam, 2 to 4 percent slopes; Markham silt loam, 4 to 6 percent slopes, eroded; and Muskego and Houghton mucks, 0 to 2 percent slopes (USDA 2018a).

Approximately 12.4 acres of the site, or 82.5 percent of the project area, contains Markham silt loam with 4 to 6 percent slopes eroded. Comprising most of the interior of the site, these soils are moderately well-drained and are on ground moraines, or areas of glacier-deposited till. Located in the southeastern corner of the project area along South Freeman Road, the Ashkum silty clay loam soils with 0 to 2 percent slopes account for 10.6 percent of the soils, or 1.6 acres. These poorly drained soils are frequently ponded and are located on ground moraines on uplands. The Peotone silty clay loam series is located in the northeastern corner of the project area by the intersection of East Mundhank Road and South Freeman Road; these soils account for 4.7 percent of the soils on the site, or approximately 0.7 acres. Peotone silty clay loam is located within depressions on till plains and drainage is very poor, resulting in frequent ponding. The Markham silt loam soils with 2 to 4 percent slopes and the Muskego and Houghton mucks with 0 to 2 percent slopes each account for approximately 2 acres within the project area. The Markam silt loam with 2 to 4 percent slopes are located in pockets along the western boundary of the project area and are moderately well drained soils on ground moraines. The Muskego and Houghton mucks are in the southeasternmost corner of the project area and are situated on

depressions; these soils are frequently ponded and are very poorly drained (USDA 2018b) (see Table 3-1 and Figure 3-1).

Prime and Unique Farmland Soils are regulated in accordance with the Farmland Protection Policy Act (FPPA) (7 USC 4201, *et seq.*) to ensure preservation of agricultural lands that are of statewide or local importance. Soils designated as prime farmland are capable of producing high yields of various crops when managed using modern farming methods. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops. According to the Web Soil Survey, the majority of soils present at the site are considered prime farmland or have the potential to become prime farmland. Both Markham silt loams are considered prime farmland in all areas and comprise 83.7 percent of the project area. Both the Ashkum and the Peotone silty clay loam have the potential to become prime farmland if properly drained; together, these soils account for 15.3 percent of the project area. The Muskego and Houghton mucks are considered farmland of statewide importance, meaning that they do not qualify as prime farmland, but are important statewide for the production of food, feed, fiber, forage, and oilseed crops (USDA 2018b).

Table 3-2: Soil Types and Distribution

Map Unit Symbol	Soil Type	Acres in Study Area	Percent in Study Area	Farmland Classification
232A	Ashkum silty clay loam, 0 to 2 percent slopes	1.6	10.6%	Prime Farmland if Drained
330A	Peotone silty clay loam, 0 to 2 percent slopes	0.7	4.7%	Prime Farmland if Drained
531B	Markham silt loam, 2 to 4 percent slopes	0.2	1.2%	All Areas are Prime Farmland
531C2	Markham silt loam, 4 to 6 percent slopes	12.4	82.5%	All Areas are Prime Farmland
903A	Muskego and Houghton mucks, 0 to 2 percent slopes	0.2	1.0%	Farmland of Statewide Importance

Source: USDA 2018a, USDA 2018b

Impacts of the Action Alternative

Acquisition of the project area by VA would not result in direct geology or soils effects. Construction of the columbaria cemetery facility and the expansion of the ALNC would impact soils and topography. The proposed columbaria cemetery facility would be designed in concert

with the natural topography and drainage patterns of the project area to the extent possible; however, land may need to be leveled in order to build the facilities or the columbaria walls, resulting in long-term adverse impacts to topography. Construction activities would cause exposure of soils that could cause erosion and sedimentation leading to short-term adverse impacts to soils. Appropriate BMPs would be implemented to reduce erosion and sedimentation during construction. Once construction is complete, no long-term erosion and sedimentation would be expected due to the nature of the proposed action.

Under the proposed action, impervious area associated with the existing residences on site would be removed. Construction of the columbaria cemetery facility, including the funeral cortege parking area, would result in an increase in impervious surfaces on the site. To minimize stormwater runoff from impervious surfaces which could cause erosion of soils, the new facilities would be designed to drain to a suitable, site-specific, stormwater management facility as defined in a stormwater management plan. Therefore, the proposed action would not result in long-term impacts to soils.

Approximately 83.7 percent of soils in the project area are Prime Farmland soils; however, the project area is located within an urbanized area according to the U. S. Census (U.S. Census Bureau 2012). The FPPA does not apply to land within urbanized areas; therefore, the proposed action would have no impact on Prime Farmland.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land for the new columbaria cemetery facility, and the expansion of ALNC would not occur. There are currently no plans that exist to develop the project area; however, the property is for sale and may be purchased and redeveloped in the future. No impacts to geology, topography, and soils would result from the No Action Alternative.

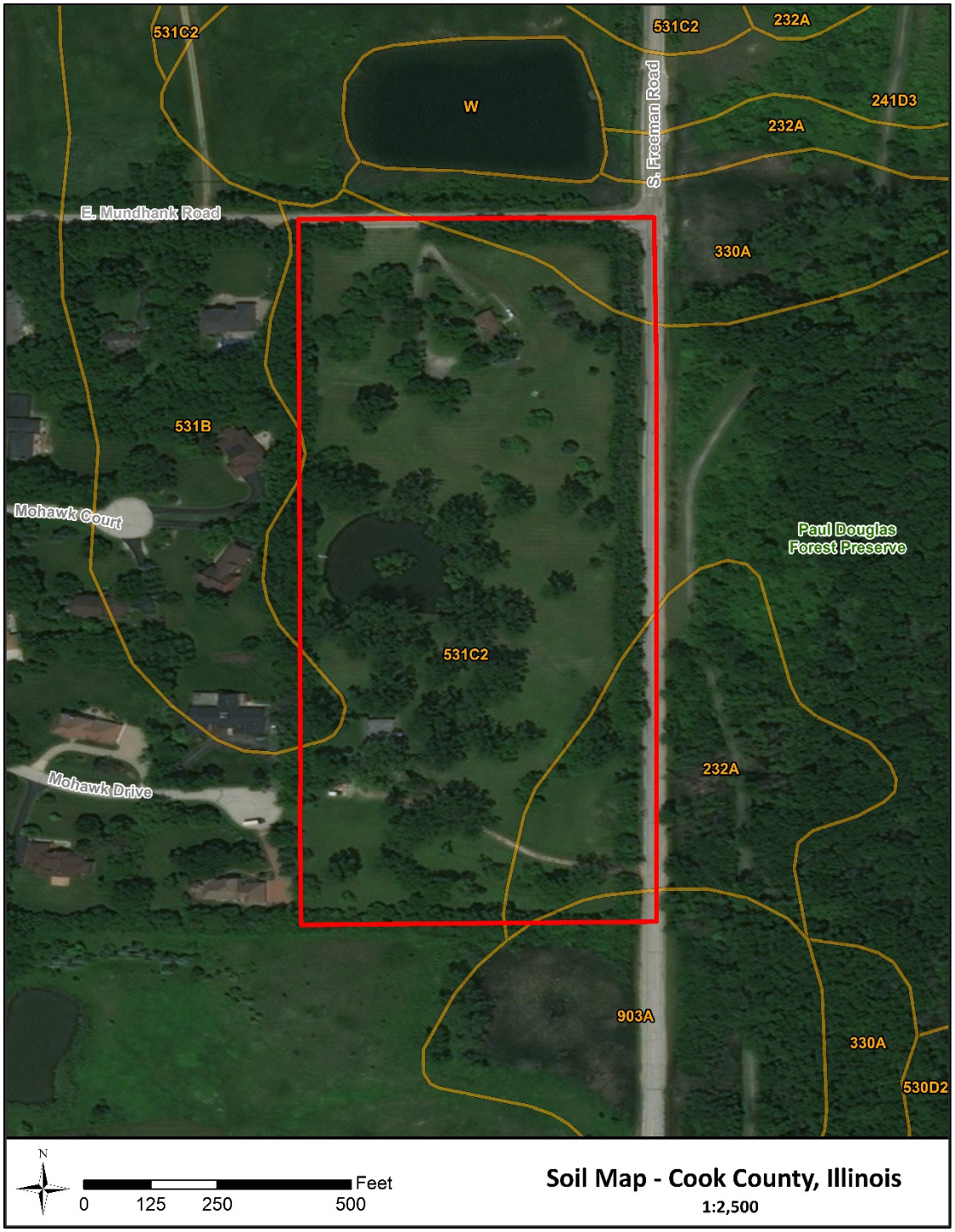

Figure 3-1: Soil Types and Locations within the Project Area

Mitigation/Management Measures

A sediment and erosion control plan would be developed to reduce and control soil and stormwater runoff. BMPs would be used to control and minimize erosion and sedimentation, including but not limited to: silt fencing and sediment traps, construction staging, applying water to disturbed soils to control dust, and seeding exposed soil areas for revegetation.

Hydrology and Water Quality

The project area is located within the Poplar Creek subwatershed of the Upper Fox watershed. The Poplar Creek watershed is approximately 44 square miles. Poplar Creek is listed by the IEPA as impaired, meaning it no longer supports the creek's designated uses for aquatic life and primary contact recreation (CMAP 2007).

Stormwater within the project area flows towards the onsite pond or off site towards the northeast. The uppermost soil in the project area has slow infiltration rates with fine-grain soil layers that may impede downward infiltration. The two nearest water wells encountered bedrock at 220 and 224 feet below grade surface. The pond onsite indicates shallow groundwater may be present at a 3- to 6-foot depth. The shallow water table is often a subdued expression of surface topography. Shallow groundwater generally flows from areas of groundwater recharge, such as hills and broad uplands, to areas of groundwater discharge, such as wetlands, rivers, and lakes. Based on the local surface topography, local shallow groundwater is expected to flow towards wetland areas on or west of the project area. The depth to shallow groundwater is estimated to be less than six feet below grade surface (Stantec 2018). The project area is located in a region of very poor groundwater recharge (BACOG 2018).

Impacts of the Action Alternative

Under the proposed action, the acquisition of approximately 15 acres of the project area by VA would not result in direct impacts to hydrology and water quality. Construction of the columbaria cemetery facility and its associated features may lead to soil erosion and sedimentation that could impact the water quality of the pond on site depending on the final design; however, erosion and sediment control measures would prevent sedimentation to the pond.

Under the proposed action, impervious area associated with the existing residences on site would be removed. Construction of the columbaria cemetery facility, including the funeral cortege parking area, would result in an increase in impervious surfaces on the site. Stormwater runoff from the addition of impervious area would be mitigated through the implementation of an approved stormwater management plan. Stormwater management facilities would allow for the reinfiltration of stormwater runoff into the groundwater. Natural vegetation would be retained or replaced on site after construction and would require an irrigation system.

No in-ground burials would occur at the proposed facility; therefore, activities of the facility would not lead to impacts to water quality. The existing residences' well systems would be decommissioned following IEPA and Illinois Department of Public Health (IDPH) guidelines and requirements to prevent impacts to the groundwater. The columbaria cemetery facility would require a new well to supply water to the facilities, such as the public restroom building; installation of the well would be conducted following State, County, and municipal regulations. If an irrigation system is needed for landscape features of the columbaria cemetery facility, the system would use water from the well system. This could be an increased tax on the aquifer, which has poor groundwater recharge; however, irrigation water would over time, ultimately infiltrate back into the underlying aquifer. Therefore, the proposed action is anticipated to have a long-term, minor adverse impact on groundwater.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land for the columbaria cemetery facility, and the expansion of ALNC would not occur. Therefore, the No Action Alternative would not result in an additional demand for water, and there would be no impacts to hydrology or water quality.

Mitigation/Management Measures

During construction, BMPs would be employed to minimize erosion and sedimentation. Runoff from the addition of impervious surfaces would be addressed in a stormwater management plan. Any well systems removed or installed would be done so following State and local requirements and guidelines.

Wildlife and Habitat

Vegetation and Wildlife

The project area is located within the Valparaiso-Wheaton Morainal Complex ecoregion of Illinois, a subcategory of the Central Corn Belt Plains. The Central Corn Belt Plains are characterized largely by agriculture but was once prairies over vast glacial plains. Most of the agricultural uses are corn, soybean, and livestock. The Valparaiso-Wheaton Morainal Complex is hilly land with marshes and lakes that commonly exists pastureland or urban/suburban development; wooded areas and wetlands are common as well. Common vegetation includes oak-hickory forest and bluestem prairie. Bur oak (*Quercus macrocarpa*), white oak (*Quercus alba*), sugar maple (*Acer saccharum*), basswood (*Tilia americana*), red oak (*Quercus rubra*), American elm (*Ulmus americana*), and white ash (*Fraxinus americana*) are typical dominant species (Woods et al. 2006).

Many wildlife species also inhabit this region. Common Mammals include white-tailed deer (*Odocoileus virginianus*), black bear (*Ursus americanus*), coyote (*Canis latrans*), racoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), wolf (*Canis lupus*), pocket gopher (*Geomys bursarius*), bobcat (*Lynx rufus*), mountain lion (*Puma concolor*), Virginia possum (*Didelphis virginiana*), beaver (*Castor canadensis*), eastern cottontail (*Sylvilagus floridanus*), red fox (*Vulpes vulpes*), feral swine (*Sus scrofa*), and muskrat (*Ondatra zibethicus*), as well as several species of mice, squirrels, and bats (University of Illinois Extension 2018).

There are 61 species of reptiles and 41 species of amphibians native to Illinois. These include the eastern box turtle (*Terrapene carolina*), brown snake (*Stroreria dekayi*), snapping turtle (*Chelydra serpentina*), northern water snake (*Neroidia sipedon*), American toad (*Bufo americanus*), bullfrog (*Rana catesbeiana*), and the tiger salamander (*Ambystoma tigrinum*). Additionally, Illinois is home to four species of venomous snakes. Numerous bird species are found in Illinois, including game birds like the eastern wild turkey (*Melagris gallopavo silvestris*) and waterfowl such as the mallard (*Anas platyrhynchos*) (University of Illinois Extension 2018). In total, there have been 441 species of birds recorded in Illinois (IOS 2018).

The project area is located west of the Paul Douglass Forest Preserve across South Freeman Road. The preserve has marshes, wetlands, and grasslands associated with the preserve are home to beavers, northern harrier (*Circus hudsonius*), red-eyed vireo (*Vireo olivaceus*), rough-legged hawk (*Buteo lagopus*), black-throated green warbler (*Setophaga virens*), Henslow's sparrow (*Ammodramus henslowii*), savannah sparrow (*Passerculus sandwichensis*), bobolink (*Dolichonyx oryzivorus*), Eastern meadowlark (*Sterna neglecta*), pied-billed grebe (*Podilymbus podiceps*), ruddy duck (*Oxyura jamaicensis*), and great blue heron (*Ardea heodias*). The State-endangered yellow-headed blackbird (*Xanthocephalus xanthocephalus*), has been noted as nesting in wetlands along Poplar Creek (FPDCC 2018a).

Many aquatic species, including fish, bivalves, gastropods, and crustaceans, are found in Illinois. Aquatic species within the project area would be limited to species within the pond on site.

The Migratory Bird Treaty Act (MBTA) prohibits the unauthorized or unintentional take of migratory birds, their nests and their eggs. The United States Fish and Wildlife (USFWS) Service has identified 21 species of migratory birds that have the potential to be affected by the proposed action (See Appendix A for complete list).

Threatened and Endangered Species

The Federal Endangered Species Act of 1973, administered by the USFWS, protects federally listed threatened and endangered species and their habitats. Under Section 7 of the ESA, Federal agencies are required to consult with USFWS to evaluate whether an undertaking would adversely affect any federally listed species or critical habitat. The USFWS Information for

Planning and Conservation (IPaC) web application was consulted to identify any known threatened or endangered species that have the potential to occur in the project area. The IPaC generated an official species list which identified 10 species (See Appendix A for official species list). The VA initiated consultation with the USFWS regarding threatened and endangered species on July 9, 2018 (See Appendix A).

In Illinois, the Endangers Species Protection Act of 1972 established the Illinois Endangered Species Protection Board to protect native Illinois species in danger of being lost in the wild (IDNR 2018a). The Illinois Department of Natural Resources (IDNR) Ecological Compliance Assessment Tool (EcoCAT) website was used to identify Illinois endangered and threatened species that may occur within the project area. An EcoCAT review determined that two State-endangered species, the black-crowned night-heron (*Nycticorax nycticorax*) and the yellow-headed blackbird, may be in the vicinity of the project area (IDNR 2018b). A June 2018 correspondence from IDNR stated that while these species may forage at the pond on site, it is unlikely that they would nest at this location (IDNR 2018c).

Impacts of the Action Alternative

The acquisition of approximately 15 acres of the project area by VA would not result in direct impacts to wildlife. Construction of the columbaria cemetery facility would require the permanent removal of vegetation, though naturally occurring vegetation would be retained to the extent possible. This would result in minimal, long-term adverse impacts to vegetation. Erosion and sediment controls would be established to prevent sedimentation into the pond on site during construction. Therefore, the proposed action is not anticipated to impact the pond's suitability as habitat for aquatic species.

Due to the high abundance of large mature woodland trees (namely cottonwood), there is a possibility for potential summer roosting habitat for the Northern Long-Eared Bat. This species requires roosting habitat in the exfoliated tree bark of large trees. Further consultation and coordination with the USFWS prior to project permitting would be required to obtain further guidance, however, if tree removal is conducted during the winter months (October 31-April 1), it is likely that this project will have no effect on this species.

Two federally listed or endangered species may be present in this portion of Cook County: the Black-Crowned Night-Heron and the Yellow-Headed Blackbird. The vegetation around Wetland 1 is mowed, leaving only a thin buffer of wetland species surrounding the edge of an unvegetated pond. Wetland 2 receives runoff from the adjacent roadway and contains wetland vegetation mixed with woody species, such as European Buckthorn. Neither of these areas contain suitable habitats for the Black-Crowned Night-Heron or the Yellow-Headed Blackbird. Therefore, it is likely that this project will have no effect on either of these species. However, prior to construction, VA would conduct surveys to identify the presence of federally listed rare,

threatened, or endangered species or their habitat within the project area. Of the species listed in the official species list, eight have no critical habitat designated. Two species, the piping plover (*Charadrius melodius*) and the Hine's emerald dragonfly (*Somatochlora hineana*), have defined final critical habitat; the project area is outside of the critical habitat. If rare, threatened, or endangered species are located within the project area, further coordination would occur between VA and the USFWS to avoid impacts to the species. Therefore, it is unlikely that the proposed action would affect federally listed species.

Additionally, the project area would be surveyed for the existence of migratory bird species. If identified with the project area, nesting trees would be retained to the extent feasible. No vegetative clearing or other construction activities would occur during the nesting period of identified migratory bird species. There would be no impacts to migratory bird species under the proposed action.

Impacts of the No Action Alternative

VA would not acquire the 15 acres of land of the project area, and the expansion of ALNC would not occur under the No Action Alternative. No new structures for the columbaria cemetery facility would be constructed, and therefore no vegetation would be cleared from the project area. No impacts to wildlife and habitat would result from the No Action Alternative.

Mitigation/Management Measures

Erosion and sediment controls would be used to prevent impacts to the aquatic habitat on site. Existing vegetation would be preserved to the extent possible or replaced after construction. VA would coordinate with USFWS if rare, threatened, or endangered species are determined to be present within the project area after surveys. Similarly, if migratory birds are documented as nesting with the project area, no vegetative clearing or construction activities would occur during the species' nesting periods.

Noise

Existing sources of noise in the vicinity of the project area are limited to those typical of a low-density residential neighborhood. Noise from traffic on South Freeman Road and East Mundhank Road is intermittent due to traffic volume and masked somewhat by the trees that line the property. The Paul Douglass Forest Preserve, located to the east of the project area across South Freeman Road, and the South Barrington Homestead residential community immediately to the west are considered sensitive noise receptors in the area.

Impacts of the Action Alternative

The acquisition of approximately 15 acres of the project area by VA would not result in a direct increase in noise. Construction of new structures for the columbaria cemetery facility would

result in a temporary increase in noise from construction activities and equipment. Impacts from construction activities on sensitive noise receptors including residential areas and the Paul Douglass Forest Preserve would be reduced by mitigation measures, such as time-of-day restrictions on work. This increase in noise would be temporary and limited to the duration of construction, resulting in short-term, minimal adverse impacts to noise. The activities at the completed facility would include operational noise from maintenance and ceremonial activities, such as Honor Guard rifle volleys. Honor Guard rifle volleys would occur on average of three to five times per weekday. However, rifle volleys would be limited to work hours between 10 am and 3 pm. Therefore, the columbaria cemetery facility would adversely contribute to sound levels in the immediate area.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would construct the columbaria cemetery facility within the project area, and the expansion of ALNC would not occur. No new structures would be constructed, and therefore there would be no noise generated by construction activities. No noise impacts would result from the No Action Alternative.

Mitigation/Management Measures

Construction activities would be limited to work Monday through Friday during weekday work hours. Equipment used during construction would be properly maintained and monitored as well as shut down when not needed in order to minimize noise they produce. Rifle volleys would be conducted with the shootings away from any houses. The VA could also interpose a structure between the Columbarium and the houses to deflect the noise.

Land Use

Based on a review of historical topographic maps, the project area was undeveloped dating back to 1923. By 1953, three buildings were located within the project area, two of which were located in the northern portion of the project area. By 1961, the second building by the north residence had been removed. Mohawk Drive was constructed on the property to the west of the project area by 1980; by 1993, the single-family residences were constructed along Mohawk Drive. At this time, the pond on the project area had been added. Since this time, no significant changes occurred to the project area or the surrounding area (Stantec 2018).

The project area is within the village of South Barrington in Cook County, Illinois. According to the South Barrington zoning ordinance, the project area is zoned as A-3 Single Family Residential (1 acre) (South Barrington 2017). South Barrington completed a comprehensive plan in 1985 that was updated and expanded upon in a report detailing the future of the village in 1992. Both plans sought to maintain the low density residential and natural character of South Barrington (South Barrington 1985, Barrington Group Limited 1992). South Barrington is part of the

Barrington Area Council of Governments (BACOG) along with the villages and townships of Barrington, North Barrington, Lake Barrington, Barrington Hills, Tower Lake, and Cuba. The BACOG outlined its policies in a comprehensive regional plan, updated in 1998. The plan focused on retaining the natural characteristics of the Barrington area and managing the development and new growth of the area (BACOG 1998). Additionally, Cook County provided its own consolidated plan for the County in 2015 called Planning for Progress. These plans do not mention any plans for the project area specifically.

Impacts of the Action Alternative

The project area is zoned as A-3 Single Family Residential (1 acre). According the to the Municipal Code of South Barrington, cemeteries are permitted in an A-3 district, "providing that the tract of land has a minimum area of one hundred sixty (160) acres (South Barrington Village Code 10 §11-5)." The Proposed Action is consistent with the existing zoning. Zoning would remain A-3 in keeping with the residential surroundings, resulting in no long-term impacts to land use. None of the available planning documents have any plans for the project area, and the proposed action does not conflict with any of the developmental guidelines established in local comprehensive plans.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land, and the expansion of ALNC would not occur. The area would remain zoned residential and the two residences would remain on site. No impacts to land use would result from the No Action Alternative.

Mitigation/Management Measures

No mitigation measures for land use and zoning are required.

Wetlands, Floodplains, and Coastal Zone Management

Wetlands

The USFWS National Wetlands Inventory online mapping tool lists the only wetland in the project area as the freshwater pond. The pond is classified as PAB4F, or palustrine, semi-permanently flooded wetland with an aquatic bed and the potential for floating vascular plants (USFWS 2018b) and is approximately 0.85 acres. A June 2018 wetland delineation determined that an additional wetland is located along South Freeman Road in the southeast corner of the site and is approximately 0.18 acres (See Figure 3-2). This wetland is a depression that receives water from a curb cut on South Freeman Road (Stantec 2018).

Floodplains

The project area is located on the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) Panel 17031C0178J, effective August 19, 2008. According to the FIRM, the entire project area is outside of the 100-year floodplain within Zone X (See Figure 3-3). Zone X includes areas that are determined to be outside the 0.2 percent chance of flood. A mapped floodplain associated with the Paul Douglass Forest Preserve is located east of the Site (FEMA 2008).

Figure 3-2: Wetlands

Figure 3-3: 100-year Floodplain

Coastal Zone Management

The Coastal Zone Management Act of 1972 (CZMA), as amended, encourages states to "preserve, protect, develop, and where possible, restore or enhance the resources of the nation's coastal zone" (16 USC § 1451 et seq.). All Federal undertakings occurring within a designated coastal zone are subject to a Federal consistency review. The coastal zone in Illinois and Cook County is largely associated with Lake Michigan; the project area is not within the coastal zone. Therefore, a Federal consistency review is not required for the proposed action.

Impacts of the Action Alternative

The acquisition of 15 acres for use as a columbaria cemetery facility by VA would not result in direct impacts to wetlands, floodplains, or the coastal zone. The facilities would be designed to avoid impacts on the pond mapped by National Wetlands Inventory as well as the wetland area delineated in the June 2018 wetland delineation. Erosion and sediment control would prevent sedimentation from impacting the pond on site during construction. The project area is not within the 100-year floodplain nor is it within the portions of the coastal zone within Cook County. Therefore, the proposed action would have no impact on wetlands, floodplains, or the coastal zone.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not construct the columbaria cemetery facility, and the expansion of ALNC would not occur. No construction activities would occur in floodplains, coastal zones, or in or near wetlands. No impacts to these resources would result from the No Action Alternative.

Mitigation/Management Measures

Erosion and sediment controls would prevent impacts to the pond located on site. The proposed action would be designed to avoid impacts to both the pond and the delineated wetland in southeast corner of the site to the extent possible.

Socioeconomics

Demographics

The project area is located within the village of South Barrington in Cook County, Illinois. South Barrington is about 25 miles northwest of Chicago. South Barrington is a member of the Barrington Council of Governments, which includes other townships and villages in the area including Barrington, North Barrington, Lake Barrington, Barrington Hills, Tower Lakes, and Cuba (BACOG 2018). Numerous other townships or villages are in close proximity to South Barrington,

including Schaumburg and Hoffman Estates. Table 3-2 shows the population totals for South Barrington, Cook County, and Illinois.

The population of Illinois has been increasing since 2000. Cook County, which includes the city of Chicago, has been increasing since 2010 after a decrease in population from 2000. South Barrington's population has been steadily increasing (U.S. Census Bureau 2018).

Table 3-3: Demographic Statistics from 2010 through 2016

Area	2000 Census	2010 Census	2016 Estimate
South Barrington	3,760	4,565	4,766
Cook County	5,376,741	5,194,675	5,227,575
Illinois	12,419,293	12,830,632	12,851,684

Source: U.S. Census Bureau 2018.

Table 3-3 presents the racial composition of the population of South Barrington, Cook County, and Illinois according to 2016 estimates. Approximately one third of the population in South Barrington identifies as Asian, which is a percentage nearly five or six times greater than that of the surrounding State and County, respectively. However, South Barrington has a lower percentage of the population that identifies under other minority groups, such as Black/African-American or Hispanic/Latino (U.S. Census Bureau 2018).

Table 3-4: Racial Composition of South Barrington, Cook County, and Illinois

Area	All	White (%)	Black or African-American (%)	American Indian and Alaska Native (%)	Asian (%)	Native Hawaiian or Pacific Islander (%)	Other (%)	Hispanic or Latino (%)
South Barrington	4,766	64.9	0	0	33.4	0	0	4.2
Cook County	5,227,575	56.7	23.9	0.3	6.8	0	9.9	24.9
Illinois	12,851,684	72.1	14.3	0.2	5.1	0	5.9	16.6

Source: U.S. Census Bureau 2018.

Educational attainment statistics for South Barrington, Cook County, and Illinois are listed below in Table 3-4. Overall, Cook County and the State of Illinois have similar rates of attainment at each educational level. South Barrington has a higher rate than both the County and the State in terms of population attaining a bachelor's degree or higher (U.S. Census Bureau 2018).

Table 3-5: Educational Attainment in South Barrington, Cook County, and Illinois

Educational Attainment	South Barrington (%)	Cook County (%)	Illinois (%)
Less than high school	2.8	14.1	11.9
High school graduate (or equivalent)	7.8	24.0	26.7
Some college or Associates degree	16.7	27.9	31.0
Bachelor's degree or higher	72.7	34.0	30.4

Source: U.S. Census Bureau 2018.

Employment and Income

The majority of employment in South Barrington are in management, business, science, and arts occupations, accounting for over half of the employed population. Sales and office occupations account for a third of the employed occupations. There are 872 companies based in South Barrington (U.S. Census Bureau 2018).

Selected income statistics are listed below in Table 3-5. The median income in South Barrington is substantially higher than the rest of the County and State. Additionally, the unemployment and percentage of the population below the poverty level in South Barrington is lower than the rates in Cook County and Illinois (U.S. Census Bureau 2018).

Table 3-6: Selected Employment and Income Statistics

Area	Number of Households	Median Household Income	Population Below Poverty Level	Unemployment Rate
South Barrington	1,493	$184,141	6.1%	6.4%
Cook County	1,951,606	$56,902	16.7%	9.7%
Illinois	4,802,124	$59,196	14%	8.2%

Source: U.S. Census Bureau 2018.

Housing

Selected housing characteristics in South Barrington, Cook County, and Illinois are listed below in Table 3-6. The rate of owner-occupied housing and the median value of homes are substantially greater in South Barrington than Illinois and Cook County. The occupancy rate of housing units is also greater in South Barrington (U.S. Census Bureau 2018).

Table 3-7: Housing Statistics

Area	Total Housing Units	Occupied	Owner-Occupied	Median Value
South Barrington	1,530	97.6%	99.3%	$804,800
Cook County	2,177,342	89.6%	56.6%	$219,800
Illinois	5,310,327	90.4%	66.0%	$174,800

Source: U.S. Census Bureau 2018.

Protection of Children

Executive Order 13045, *Protection of Children From Environmental Health Risks and Safety Risks*, was introduced to ensure that children do not suffer disproportionately from these risks caused by Federal actions. This section describes the distribution of children and locations where the number of children may be higher (schools, childcare facilities, etc.) near the project area.

The project area currently houses two residences, but it is unknown if children live in these homes. Children are likely present in the surrounding residential neighborhoods, such as South Barrington Homestead west of the project area. Children may temporarily visit the Paul Douglass Forest Preserve, which is located east of the site across South Freeman Road, to access the trail system or for other outdoor recreation activities. Children account for approximately 22.3 percent of the population in Illinois, which is similar to that of South Barrington and Cook County. Table 3-7 below describes the number and percent of the population of children (U.S. Census Bureau 2018).

Table 3-7: Population under 18 in South Barrington, Cook County, and Illinois

Area	Total Population	Population under 18	
		Number	Percent
South Barrington	4,766	1,129	23.7%
Cook County	5,227,575	1,186,398	22.7%
Illinois	12,851,684	2,990,629	23.3%

Source: (U.S. Census Bureau 2018)

Impacts of the Action Alternative

The acquisition of approximately 15 acres of the Site by VA would not result in direct impacts to demographics. The expansion of ALNC would not alter the demographics of the surrounding area. Construction would result in a temporary increase in employment in Cook County due to the demand for construction workers. The facility would create a few permanent jobs in the form of caretakers at the facility. The cemetery grounds would be maintained by contracted effort, which would add to additional jobs. Therefore, the proposed action would have a

minimal, short-term beneficial impact to employment, and a negligible beneficial impact over the long-term.

The proposed action would not add any housing to the project area or the surrounding area. Construction of the columbaria cemetery facility would require the removal of the two residences on site; however, the two buildings are currently vacant. The proposed expansion would not disproportionately affect children in the vicinity of the project area. No other impacts to the socioeconomics of the project area or the surrounding area would occur as a result of the proposed action.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not construct the columbaria cemetery facility, and the expansion of ALNC would not occur. The demographics and economic conditions of the surrounding area would not be altered. No new jobs would be created, and no children would be affected. No impacts to the socioeconomics of the project area or the surrounding area would occur as a result of the No Action Alternative.

Mitigation/Management Measures

No mitigation measures are required for socioeconomics.

Community Services

The project area is located within the Barrington Community Unit School District 220 which consists of one high school, two middle schools, eight elementary schools, and one early childhood center. The closest school to the project area is Barbara Rose Elementary School, located in South Barrington (Barrington 220, 2018).

Fire and emergency medical services are provided to the project area by the Barrington Countryside Fire Protection District (BCFPD). The BCFPD headquarters is located at 22222 N. Pepper Road in Lake Barrington, approximately eight miles from the project area (BCFPD 2018). The closest hospitals to the project area are the Advocate Good Shepard Hospital, approximately 8.5 miles north, and Saint Alexius Medical Center, located 2 miles southwest. Police protection is provided by the South Barrington Police Department, located at 30 South Barrington Road (South Barrington 2018).

Numerous parks are located within Cook County; the parks closest to the project area include High Point Park, Cottonwood Park, Poplar Park, Douglas Park, Lincoln Park, Meadow Park, and Charlemagne Park. Additionally, Cook County is home to the Forest Preserve District of Cook County, which is the largest forest preserve district in the country with over 69,000 acres. This includes the Paul Douglass Forest Preserve, which is located east of the project area across South Freeman Road. The Paul Douglass Forest Preserve is encircled by a 7.2-mile paved trail

and provides opportunities for birdwatching; an 18-hole public golf course, the Highland Woods Golf Course, is located to the east of the preserve (FPDCC 2018a). Additional forest preserves proximal to the project area include the Arthur L. Janura Forest Preserve and the Crabtree Nature Center (FPDCC 2018b). Figure 3-3 provides a map of the community services near the proposed site.

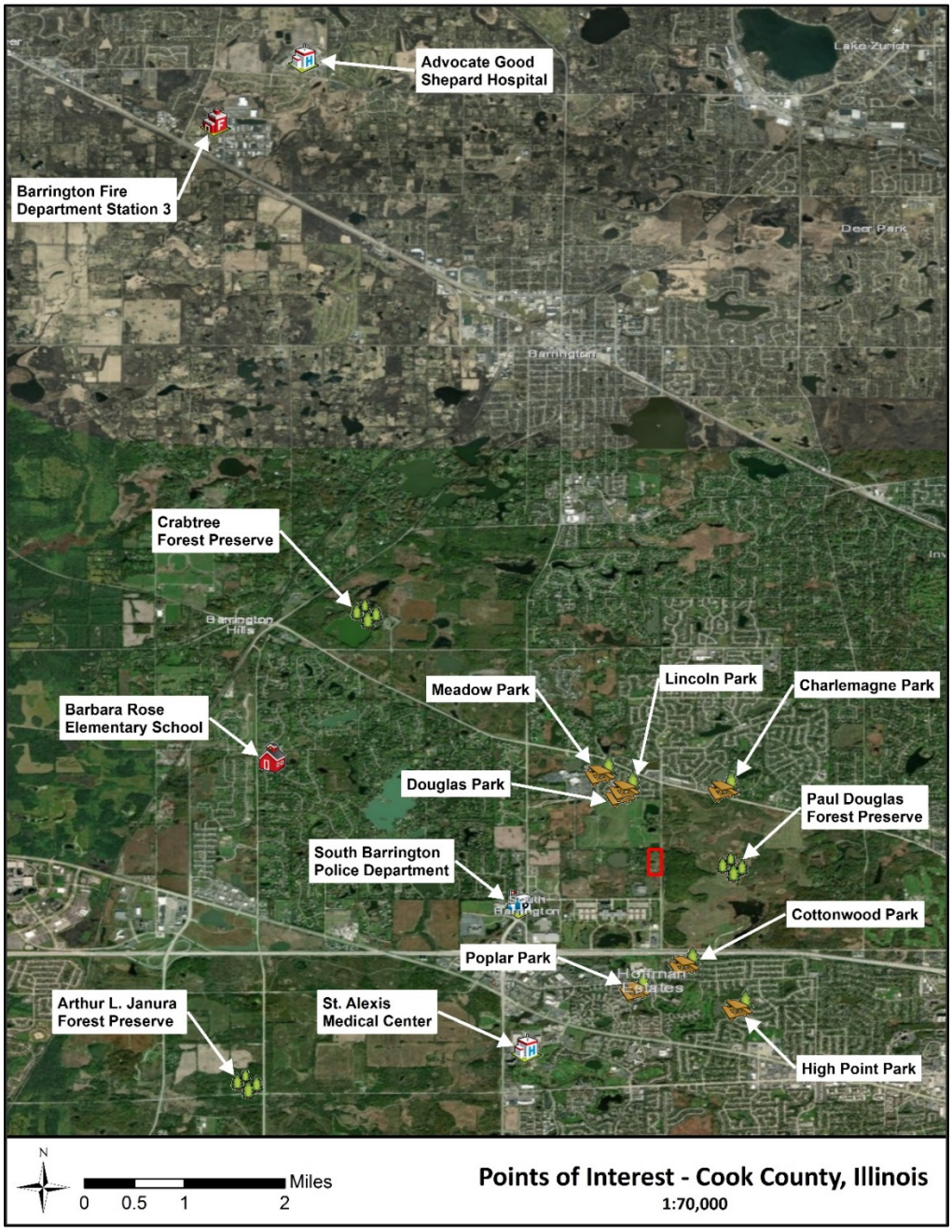

Figure 3-3: Community Services Near Proposed Site

Impacts of the Action Alternative

The acquisition of approximately 15 acres of the Site by VA would not result in direct impacts to community services. The columbaria cemetery facility, once constructed, would see new visitors to the project area and the surrounding area; the local police and fire departments could potentially see a small increase in emergency response call from the new visitors. This would provide a long-term, negligible adverse impact to community services. Under the proposed action, the increased number of visitors would not have any impacts to schools that serve the project area. As described under Noise, the Paul Douglass Forest Preserve may be temporarily negatively impacted during construction by noise potentially disrupting the serenity of the preserve. Post construction, there would be no impacts to parks in the vicinity of the study area.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land to construct the columbaria cemetery facility, and the expansion of ALNC would not occur. There would be no increased demand for any community services, and therefore there would be no impacts to community services as a result of the No Action Alternative.

Mitigation/Management Measures

No mitigation measures for impacts to community services are needed.

Solid and Hazardous Waste

Hazardous materials are generally defined as materials, liquids, or other substances that are capable of having a harmful effect on human health or the environment. A Phase I Environmental Site Assessment (ESA) was conducted for the Site in April 2018. Phase I ESAs identify Recognized Environmental Conditions (RECs) on a site to assess the potential for environmental contamination. The Phase I ESA identified one potential REC; an unidentified metal pipe near the north residential property may potentially be a vent or a remote fill pipe for an underground storage tank (UST). Potential releases from USTs may impact the soil, groundwater, and soil vapor within the project area. Additionally, access to the two residences was not granted during the conducting of the Phase I ESA, preventing the assessment of these areas for additional RECs (Stantec 2018).

Two debris piles containing household or farm-type solid waste were observed within the project area. Additionally, two empty 55-gallon drums we located on site and did not show evidence of once containing hazardous chemicals or petroleum. Residential trash is collected by Groot (Stantec 2018).

Impacts of the Action Alternative

The acquisition of approximately 15 acres for the new columbaria cemetery by VA would not result in direct impacts from solid or hazardous materials. The exact location of the columbarium features have not been finalized; however, the residential structures on site would be removed. Material removed from the residential structures, as well as the debris piles and drums on site, would be transported off site and disposed of following federal and state requirements. The potential presence of a UST associated with the residences would need to be further investigated before the buildings are removed. If present, VA would take the appropriate steps and consult with EPA and IEPA to properly remove the UST and remediate any contamination associated with the UST. Solid waste generated by the operation of the columbaria cemetery facility would not greatly add to the overall waste generation in the vicinity. Therefore, there would be no impacts from solid and hazardous materials from the implementation of the proposed action.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land to develop the new columbaria cemetery facility, and the expansion of ALNC would not occur. No construction or excavation activities would occur as a result of the proposed expansion, and therefore no impacts related to solid and hazardous materials would result from the No Action Alternative.

Mitigation/Management Measures

Additional site investigation would determine whether the REC identified during the Phase I ESA is a UST. If a UST if found on the site, it would be removed, and any residual contamination would be remediated following appropriate standards.

Transportation and Parking

The project area is located southwest of the intersection of East Mundhank Road and South Freeman Road. Both roads are two-lane local roads designated as minor collectors that do not have shoulders and do not provide parking. One of the residences on site is accessed via East Mundhank Road; the other is accessed from South Freeman Road. South Freeman Road connects with Illinois Route 62 to the north and Interstate 90, also known as the Jane Adams Memorial Tollway, via West Central Road, to the south.

According to 2014 Annual Average Daily Traffic (AADT) estimates, East Mundhank Road experiences approximately 1,850 trips per day. South Freeman Road experiences approximately 2,050 trips per day along the project area. North of East Mundhank Road, South Freeman Road has an AADT of 3,900 trips per day (IDOT 2018). O'Hare international Airport is approximately 13 miles from the project area. The village of Schaumburg, located approximately 3.5 miles

southeast of the project area, has both a public regional airport and a public-use helipad (Village of Schaumburg, 2018).

Impacts of the Action Alternative

The acquisition of approximately 15 acres of the project area by VA would not result in direct impacts to transportation and parking. A temporary increase in construction vehicles delivering supplies to the project area could occur during construction of the columbaria cemetery facility. The increase traffic would be temporary and result in minimal, short-term adverse impacts to local roadways. No road closures would occur during or after construction. Once the facility is constructed, South Freeman Road and East Mundhank Road would experience an increase in traffic from visitors to the site including funeral corteges; however, the increase in traffic would be infrequent and would not greatly impact AADT. The new facility would include a funeral cortege parking area; therefore, parking along East Mundhank Road and South Freeman Road should not be required. Therefore, no long-term impacts to local roadways would occur after the expansion is complete.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land to develop the new columbaria cemetery facility, and the ALNC would not be expanded. No construction activities would occur, and ALNC would not experience a substantial increase in visitors. The AADT for South Freeman Road and East Mundhank Road would remain the same. No impacts to transportation and parking would occur as a result of the No Action Alternative.

Mitigation/Management Measures

No mitigation measures for transportation or parking are necessary.

Utilities

The Village of South Barrington relies primarily on private well and septic systems (South Barrington 2018). The two residences in the project area are on water wells, and sewage disposal is provided via septic fields. The Commonwealth Edison Company (ComEd) provides electric service to the project area (Stantec 2018).

Since most of BACOG is reliant on private or subdivision wells, the area is largely reliant on the aquifer system, with no alternate water supply. As such, BACOG monitors groundwater levels; a monitoring well was drilled in South Barrington in 2015. The project area is located in a region with very poor groundwater recharge (BACOG 2018). The estimated depth to groundwater is 3 to 6 feet below grade surface and flows westward (Stantec 2018).

Impacts of the Action Alternative

The acquisition of approximately 15 acres of the project area by VA would not result in direct impacts to utilities. Construction of the columbaria cemetery facility would require access to electric service and water. New electric lines may need to be run to support the facility. The columbaria cemetery facility could contribute to a negligible increase in demand of electricity depending on how the facility is lit. Sewage from the facility would require the use of septic fields.

Water service within the project area would be provided by a private well system. In order to remove the existing wells and install new well system within the project area, VA will coordinate with IDPH and the Village of South Barrington to acquire the proper permits and undergo reviews as necessary. A licensed contractor will be selected form IDPH's approved list of contractors to construct water wells. The proposed action would not result in adverse impacts to utilities in the vicinity of the project area.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land for the new columbaria cemetery facility, and the expansion of ALNC would not occur. No increase in the demand for electricity, sewer, or water would occur, and therefore there would be no impacts to utilities as a result of the No Action Alternative.

Mitigation/Management Measures

A permit for the removal and installation of water wells would be acquired from the IDPH and the Village of South Barrington.

Environmental Justice

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations was issued on February 11, 1994. This order directs Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority or low-income populations. A low-income individual is defined as any individual receiving a total family income below the applicable poverty threshold.

As discussed under *Socioeconomics*, minority populations are located in the vicinity of the project area; and it is not known if minority or low income populations are located in the existing dwellings. Although the Asian population in the vicinity of the project area is greater than that of the surrounding county and state, construction and operation of the columbaria cemetery facility would not disproportionally impact minority populations. The percentage of the population that is low-income is lower in the vicinity of the project area than that of the

county and the state; therefore, the proposed action would not disproportionally impact low-income populations.

Impacts of the Action Alternative

The acquisition of the project area by VA would not result in disproportionate impacts to low-income or minority populations. As no low-income or minority populations have been identified in the vicinity of the project area, construction and operation of the proposed facility would not result in disproportionately adverse impacts to any low-income or minority populations.

Impacts of the No Action Alternative

Under the No Action Alternative, VA would not acquire land, and the expansion of ALNC would not occur; the columbaria cemetery facility would not be constructed within the project area. No minority or low-income populations would be affected as a result of the No Action Alternative.

Mitigation/Management Measures

No mitigation measures for environmental justice are necessary.

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 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, or set of actions, on resources that may often be manifested only at the cumulative level, such as traffic congestion, air quality, noise, biological resources, cultural resources, socioeconomic conditions, utility system capacities, and others.

The current land use of the project area is residential. No future land use is outlined in the planning documents for South Barrington, the BACOG, or Cook County; however, the planning documents stress that retaining the natural environment and residential character be considered for future land development.

The Proposed action would result in impacts to the study area that have been identified in Section 3. Current and future development in the area, including a proposed high-density residential project in Hoffman Estates (BACOG 2018), would continue to result in a loss of

vegetation, putting pressure on natural habitats and adversely affecting wildlife. In addition, with development comes an increase in impervious surfaces, which in turn increases stormwater runoff. Additional development would put pressure on community services and increases demand for utilities, particularly water supplies, which are limited due to the shallow aquifer. Continued development would adversely cumulatively affect the region's water supply by increasing the competition for water resources. Finally, the proposed action and future development may present views of a more densely developed environment and could cumulatively affect historical and archaeological resources.

Beneficial cumulative impacts associated with the proposed action in conjunction with past, current, and future development include negligible short- and long-term increased job opportunities associated with construction and operation of the facility, respectively. As such, a short- and long-term, minimally beneficial, cumulative impact to the local economy is anticipated from the expansion of the ALNC.

Potential for Generating Substantial Controversy

As discussed in Section 4.0, VA has solicited input from various Federal, State, and local government agencies regarding the proposed action. Several of these agencies have provided input and none of the input has identified opposition or controversy related to the proposed columbarium. Additional potential controversy for the proposed action could arise from adjacent neighbors.

VA will publish and distribute the Draft EA for a 30-day public comment period as announced by a Notice of Availability (NOA) published in a local newspaper for general circulation (*South Barrington News – Daily Herald*). Review copies will also be made available for public review at community libraries in the region (*Barrington Area Public Library*). The EA is also located on VA's website for the Urban Initiative Cemetery: https://www.cem.va.gov/ea.asp.

The VA will also be holding a public meeting during the 30-day public comment period. This meeting will be held on November 8, 2018 at the Hilton Garden Inn – Hoffman Estates located at 2425 Barrington Road, Hoffman Estates, IL 60195 from 6:30-8:30 pm. Anyone interested in learning more about this project is encouraged to attend.

Based on comments received from the public review of the Draft EA, VA will respond to provided comments within the Final EA and will issue a Finding of No Significant Impact (FONSI), presuming that there are no substantive public comments that would warrant additional analysis and no significant, effects are identified that cannot be mitigated.

CHAPTER 4: PUBLIC INVOLVEMENT

Agency and Tribal Consultation

During the development of the EA; Federal, State, and local agencies with oversight responsibilities related to the Proposed Action were contacted. These agencies included the Illinois Department of Natural Resources, US Fish and Wildlife Service, and the IDNR Historic Preservation Division.

Public Involvement

As stated in VA's NEPA Interim Guidance for Projects (VA 2010), public involvement for an EA may include public engagement during scoping, drafting, and finalizing the EA through publication of notices or public meetings. The public involvement process for this EA consists of the publication and distribution of the Draft EA for a 30-day public comment period as announced by an NOA published in a local newspaper for general circulation (*South Barrington News – Daily Herald*). Review copies will also be made available for public review at the community library in the region (*Barrington Area Public Library*). The EA is also located on VA's website for the Urban Initiative Cemetery: https://www.cem.va.gov/ea.asp.

The VA will also be holding a public meeting during the 30-day public comment period. This meeting will be held on November 8, 2018 at the Hilton Garden Inn – Hoffman Estates located at 2425 Barrington Road, Hoffman Estates, IL 60195 from 6:30-8:30 pm. Anyone interested in learning more about this project is encouraged to attend.

Based on comments received from the public review of the Draft EA, VA would respond to provided comments within the Final EA and will issue a FONSI, presuming that there are no substantive public comments that would warrant additional analysis and no significant, effects are identified that cannot be mitigated.

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CHAPTER 5: MANAGEMENT AND MITIGATION MEASURES

Management and Mitigation Measures

The following table summarizes the management and mitigation measures that would be implemented in order to ensure the Proposed Action would have less than significant impacts on the potential physical, environmental, cultural, and socioeconomic environment.

Table 5-1: Management and Mitigation Measures for the Proposed Action

Impact Topic	Management and Mitigation Measures
Aesthetics	The buildings would be designed to enhance and preserve views of the natural landscape and would be in compliance with all applicable planning documents.
Air Quality	BMPs, such as the watering of exposed, disturbed soil, would be implemented to minimize the impact to air quality to the extent practicable.
Cultural, Historical, and Archaeological Resources	VA would consult with the Illinois SHPO and tribes as design progresses.
Geology and Soils	A sediment and erosion control plan would be developed to reduce and control soil and stormwater runoff. BMPs would be used to control and minimize erosion and sedimentation, including but not limited to: silt fencing and sediment traps, applying water to disturbed soils to control dust, and revegetation of soils as soon as possible after disturbance.
Hydrology and Water Quality	During construction, BMPs would be employed to minimize erosion and sedimentation. Runoff from the addition of impervious surfaces would be addressed in a stormwater management plan and would be done so following State and local requirements and guidelines.
Wildlife and Habitat	Erosion and sediment controls would be used to prevent impacts to the aquatic habitat on site. Existing vegetation would be preserved to the extent possible or replaced after construction. VA would coordinate with USFWS if rare, threatened, or endangered species are determined to be present within the project area after surveys. Similarly, if migratory birds are documented as nesting with the project area, no vegetative clearing or construction activities would occur during the species' nesting periods.

Impact Topic	Management and Mitigation Measures
Noise	Construction activities would be limited to work Monday through Friday during weekday work hours. Equipment used during construction would be properly maintained and monitored as well as shut down when not needed in order to minimize noise they produce. Rifle volleys would be conducted with the shootings away from any houses. The VA could also interpose a structure between the Columbarium and the houses to deflect the noise.
Land Use	No mitigation necessary
Wetlands, Floodplains, and Coastal Zone Management	Erosion and sediment controls would prevent impacts to the pond located on site. The proposed action would be designed to avoid impacts to both the pond and the delineated wetland in southeast corner of the site to the extent possible.
Socioeconomics	No mitigation necessary.
Community Services	No mitigation necessary.
Solid and Hazardous Waste	Additional site investigation would determine whether the REC identified during the Phase I ESA is a UST. If a UST if found on the site, the site would be tested for releases from the UST into the soils, groundwater, and soil vapor. If releases are determined, the UST would be removed, and any residual contamination would be remediated following appropriate standards. Asbestos sampling is recommended for the purposes of demolition/renovation design.
Transportation and Parking	No mitigation necessary.
Utilities	A permit for the removal and installation of water wells would be acquired from the IDPH and the Village of South Barrington.
Environmental Justice	No mitigation necessary.

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CHAPTER 7: REFERENCES

Barrington 220, 2018. Barrington 220 Community Unit School District website. Available online: Accessed https://www.barrington220.org/aboutbarrington220. April 5, 2018.

Barrington Area Council of Governments (BACOG), 1998. Comprehensive Plan Update**.**

Barrington Area Council of Governments (BACOG), 2018. Barrington Area Council of Governments website. Available online: http://bacog.org/. Accessed April 2, 2018.

Barrington Countryside Fire Protection District (BCFPD), 2018. "About Us". Availbable online: http://www.bcfpd.org/. Accessed April 5, 2018.

Barrington Group Limited, 1992. South Barrington 2005 – A Report Detailing the Future of the Village and the Commensurate Municipal Service Requirements. Inverness, Illinois. July 16, 1992.

Chicago Metropolitan Agency for Planning (CMAP), 2007. Poplar Creek Watershed Action Plan. July, 2007

Cook County, 2018. Cook County Viewer. Available online: https://maps.cookcountyil.gov/cookviewer/index.html. Accessed March 30, 2018.

Federal Emergency Management Agency (FEMA), 2008. Flood Insurance Rate Map Panel 17031C0178J. Map revised August 19, 2008.

Forest Preserve District of Cook County (FPDCC), 2018a. "Paul Douglas Forest Preserve". Available online: http://fpdcc.com/paul-douglas-forest-preserve/. Accessed April 4, 2018.

Forest Preserve District of Cook County (FPDCC), 2018b. "Interactive Map". Available online: https://map.fpdcc.com/. Accessed April 4, 2018.

Illinois Department of Natural Resources (IDNR) 2018a. "Illinois Endangered Species Protection Board". Available online: https://www.dnr.illinois.gov/ESPB/Pages/default.aspx. Accessed April 3, 2018.

Illinois Department of Natural Resources (IDNR), 2018b. Ecological Compliance Assessment Tool (EcoCAT) - Natural Resource Review Results. April 3, 2018.

Illinois Department of Natural Resources (IDNR), 2018c. Email message from Keith M. Shank, Chief, Impact Assessment Section, to Michael P. Sybert, Environmental Scientist, Stantec Consulting Services Inc., June 22, 2018, regarding state-listed species.

Illinois Department of Transportation (IDOT), 2018. Getting Around Illinois Interactive Map. Available online: https://www.gettingaroundillinois.com/gai.htm?mt=sby. Accessed March 30, 2018.

Illinois Environmental Protection Agency (IEPA), 2016. Illinois Annual Air Quality Report 2016. Illinois Environmental Protection Agency, Bureau of Air. Springfield, IL.

Illinois Ornithological Society (IOS), 2018. "Birds of Illinois". Available online: http://www.illinoisbirds.org/. Accessed April 5, 2018.

Illinois State Geologic Survey (ISGS), 2018. "Physiographic Divisions of Illinois" Map. Available online: http://isgs.illinois.edu/sites/isgs/files/maps/statewide/physio-w-color-8x11.pdf. Accessed March 30, 2018.

Leetaru, Hannes E., Michael L. Sargent, and Dennis R. Kolata (Leetaru et al.), 2004. Geologic Atlas of Cook County for Planning Purposes. Ilinois State Geologic Survey. Champaign, IL. July 27, 2004.

Stantec, 2018. *Phase I Environmental Site Assessment of 10 South Freeman Road, South Barrington, Illinois 60010*. April 2, 2018.

University of Illinois Extension, 2018. "Directory of Illinois Wildlife". Available online: http://web.extension.illinois.edu/wildlife/directory.cfm. Accessed April 5, 2018.

U.S. Census Bureau, 2012. "2010 Census – Urbanized Area and Reference Map: Chicago, IL – IN."

U.S. Census Bureau, 2018. American Fact Finder. Available online: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed April 3, 2018.

U.S. Department of Agriculture (USDA), 2018a. Custom Soil Resource Report for Cook County, Illinois. Natural Resources Conservation Service, Web Soil Survey. Available online: https://websoilsurvey.sc.egov.usda.gov/. Accessed March 29, 2018.

U.S. Department of Agriculture (USDA), 2018b. Natural Resources Conservation Service, Web Soil Survey. Available online: https://websoilsurvey.sc.egov.usda.gov/. Accessed March 30, 2018.

U.S. Environmental Protection Agency (EPA), 2016. NAAQS Table. https://www.epa.gov/criteria-air-pollutants/naaqs-table. Accessed April 5, 2018.

U.S. Environmental Protection Agency (EPA), 2017. Hazardous Air Pollutants. https://www.epa.gov/haps. Accessed April 5, 2018.

U.S. Environmental Protection Agency (EPA), 2018. Current Nonattainment Counties for All Criteria Pollutants. https://www3.epa.gov/airquality/greenbook/ancl.html. Accessed April 5, 2018.

U.S. Fish and Wildlife Service (USFWS), 2018a. National Wetland Inventory – Wetlands Mapper. Available online: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed March 29, 2018.

U.S. Fish and Wildlife Service (USFWS), 2018b. Species List: Chicago Ecological Service Field Office. March 29, 2018.

Village of Schaumburg, 2018. "Schaumburg Regional Airport Home". Available online: http://www.villageofschaumburg.com/depts/transport/airport/default.htm. Accessed March 30, 2018.

Village of South Barrington, IL (South Barrington), 1985. Village of South Barrington Comprehensive Land Use and Policies Plan of 1985.

Village of South Barrington, IL (South Barrington), 2017. Village of South Barrington Zoning Map. Adopted January 12, 2017.

Village of South Barrington, IL (South Barrington), 2018b. Village of South Barrington, Illinois official website. Available online: http://www.southbarrington.org/home.html. Accessed March 30, 2018.

Willman, H.B., 1971. Summary of the Geology of the Chicago Area. Prepared for the Illinois State Geological Survey, Circular 460. Urbana, Illinois.

Woods, Alan J., James M. Omernik, Charles L. Pederson, and Brian C. Moran (Woods et al.), 2006. Level III and IV Ecoregions of Illinois. Prepared for U.S. Environmental Protection Agency, Washington, DC. EPA/600/R-06/104. September, 2006.

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APPENDIX A: THREATENED AND ENDANGERED SPECIES CONSULTATION

APPENDIX B: SECTION 106 CONSULTATION