

**Environmental Assessment
Crown Hill National Cemetery Expansion in Indianapolis,
Washington Township, Marion County, Indiana**

By

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Alycia Giedd, MA, Archaeologist;
Ross Nelson, MA, MS, Architectural Historian; and
Ulrika S. Zay, Environmental Specialist**



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425 I Street Northwest
Washington, D.C. 20001**

Lead Agency: U.S. Department of Veterans Affairs

September 9, 2015

**Final Environmental Assessment
Crown Hill National Cemetery Expansion
Indianapolis, Indiana**



United States Department of Veterans Affairs

September 9, 2015

EXECUTIVE SUMMARY AND CONCLUSIONS

In this environmental assessment (EA), the U.S. Department of Veterans Affairs, National Cemetery Administration (NCA) identifies, analyzes, and documents the potential physical, environmental, cultural, and socioeconomic impacts associated with expanding the Crown Hill National Cemetery by purchasing a 14.75-acre wooded parcel north of the existing national cemetery. The proposed expansion project would create an entrance and roadway system to accommodate the construction of columbarium walls, a main flagpole area, and a small public information and restroom building. The cemetery would be developed in phases with each phase accommodating approximately 10 years of cremation capacity. Existing forested areas will be removed as each phase of development occurs; there will be some tree buffers and forested areas that are left undisturbed to retain the character and serenity of the site.

The purpose of the Proposed Action is to continue to enable the NCA to provide eligible Veterans and their families with a national cemetery of sufficient size and capacity to serve the projected needs in the central Indiana region 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.

Two alternatives are analyzed in this EA:

- The Proposed Action to expand the Crown Hill National Cemetery by purchasing a nearby wooded area north of the existing national cemetery property and constructing columbarium walls, an access drive, flagpole area, and public information and restroom facilities.
- The No Action alternative to not expand and improve the Crown Hill National Cemetery.

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

Summary of Impact Analysis

Resource / Issue	Proposed Action	No Action
Meets Purpose of and Need for Action	Yes	No
Aesthetics	Minor temporary impact from presence of heavy equipment and unfinished work during construction.	No impact
Air Quality	Particulate emissions during construction are below the <i>de minimis</i> threshold level, emissions would comply with all permit requirements and regulations. No significant impact.	No impact
Cultural Resources	It is expected that the proposed action would have no effect to historic properties. State Historic Preservation Office (SHPO) concurrence was received on July 21, 2015	No impact
Geology and Soils	Minor short-term potential for erosion and sedimentation during construction; impacts would be minimized through Best Management Practices (BMPs) and conformance with National Pollutant Discharge Elimination System (NPDES) permit requirements.	No impact
Hydrology and Water Quality	Minor short-term potential for erosion and sedimentation during construction; impacts would be minimized through BMPs and conformance with NPDES permit requirements.	No impact
Wildlife and Habitat	Not likely to adversely affect legally protected plant and animal species providing tree removals do not occur between April 1–September 30; indirect impact would occur to migratory birds and local wildlife due to habitat removal. Potential impacts will be minimized by incorporating the Indiana Department of Natural Resources (IDNR) recommendations during project design.	No direct impact. Potential indirect impact by leaving property for sale and vulnerable to more extensive development than the currently proposed action.
Noise	Minor short-term adverse noise impacts during construction. Continued minor intermittent long-term adverse noise impacts during operation from ceremonial M-16 rifle salutes and grounds maintenance equipment.	No impact

Resource / Issue	Proposed Action	No Action
Land Use	No change to designated land use will occur as the property is within an existing, privately owned, cemetery property. Upon development of the site, large portions of the woodland will be removed and removal will occur in phases.	No impact
Floodplains, Wetlands, and Coastal Zone Management	No floodplains or jurisdictional wetlands are present. The project is not within the Indiana Coastal Zone Management Area. Impacts to three isolated wetlands will be avoided, minimized, and/or mitigated for, as needed, based on projected impacts determined during the design phase.	No impact
Socioeconomics and Environmental Justice	No adverse impact. Possible short-term localized beneficial impact to employment during construction.	No impact
Community Services	Beneficial impact by providing burial services for Veterans and their families.	Adverse impact because Veteran's families must travel long distances for burial and visitation.
Solid and Hazardous Materials	Minor increase in solid waste during construction, and continued generation at current levels from operations. No significant impact.	No impact
Transportation and Parking	Short-term adverse impact from construction traffic, less than significant	No impact
Utilities	No adverse impacts.	No impact
Potential for Generating Substantial Controversy	None identified	If the property is purchased and developed for a <u>non-cemetery use</u> , then significant public controversy may be generated.

No significant cumulative adverse effects to any resources are anticipated. No public comments were received during the public comment period.

TABLE OF CONTENTS

EXECUTIVE SUMMARY AND CONCLUSIONS..... i

TABLE OF CONTENTS..... iv

LIST OF TABLES vii

LIST OF FIGURES vii

LIST OF PHOTOGRAPHS vii

ABSTRACT viii

ACRONYMS AND ABBREVIATIONS ix

1.0 INTRODUCTION 1

 1.1 Purpose and Need for the Proposed Action 4

 1.2 Project Background and Existing Site 4

 1.3 Decision-Making..... 5

2.0 ALTERNATIVES..... 6

 2.1 Development of Alternatives 6

 2.2 Alternatives 6

 2.2.1 Proposed Action: Expansion and Improvement 6

 2.2.2 No Action..... 7

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES 14

 3.1 Aesthetics 14

 3.1.1 Existing Environment 14

 3.1.2 Environmental Consequences 14

 3.1.2.1 Proposed Action..... 14

 3.1.2.2 No Action..... 14

 3.2 Air Quality 14

 3.2.1 Existing Environment 14

 3.2.1.1 Regional Climate 14

 3.2.1.2 National Ambient Air Quality Standards..... 15

 3.2.1.3 General Conformity Requirements 18

 3.2.1.4 State and Local Air Quality Requirements 18

 3.2.1.5 Existing Emissions Sources 18

 3.2.1.6 Sensitive Receptors..... 18

 3.2.2 Environmental Consequences 19

 3.2.2.1 Proposed Action..... 19

 3.2.2.2 No Action..... 20

 3.3 Cultural Resources 20

 3.3.1 Existing Environment 21

 3.3.2 Environmental Consequences 22

3.3.2.1 Proposed Action.....	22
3.3.2.2 No Action.....	22
3.4 Geology and Soils.....	22
3.4.1 Existing Environment.....	22
3.4.2 Environmental Consequences.....	24
3.4.2.1 Proposed Action.....	24
3.4.2.2 No Action.....	24
3.5 Hydrology and Water Quality.....	24
3.5.1 Existing Environment.....	24
3.5.2 Environmental Consequences.....	25
3.5.2.1 Proposed Action.....	25
3.5.2.2 No Action.....	25
3.6 Wildlife and Habitat.....	25
3.6.1 Existing Environment.....	25
3.6.2 Environmental Consequences.....	26
3.6.2.1 Proposed Action.....	26
3.6.2.2 No Action.....	27
3.7 Noise.....	27
3.7.1 Existing Environment.....	27
3.7.2 Environmental Consequences.....	27
3.7.2.1 Proposed Action.....	27
3.7.2.2 No Action.....	28
3.8 Land Use.....	28
3.8.1 Existing Environment.....	28
3.8.2 Environmental Consequences.....	30
3.8.2.1 Proposed Action.....	30
3.8.2.2 No Action.....	30
3.9 Floodplains, Wetlands, and Coastal Zone Management.....	30
3.9.1 Existing Environment.....	30
3.9.2 Environmental Consequences.....	33
3.9.2.1 Proposed Action.....	33
3.9.2.2 No Action.....	33
3.10 Socioeconomics and Environmental Justice.....	33
3.10.1 Existing Environment.....	33
3.10.2 Environmental Consequences.....	33
3.10.2.1 Proposed Action.....	33
3.10.2.2 No Action.....	34
3.11 Community Services.....	34
3.11.1 Existing Environment.....	34
3.11.2 Environmental Consequences.....	34
3.11.2.1 Proposed Action.....	34
3.11.2.2 No Action.....	34
3.12 Solid Waste and Hazardous Materials.....	34
3.12.1 Existing Environment.....	34
3.12.2 Environmental Consequences.....	35
3.12.2.1 Proposed Action.....	35

3.12.2.2 No Action.....	35
3.13 Transportation and Parking.....	35
3.13.1 Existing Environment	35
3.13.2 Environmental Consequences	36
3.13.2.1 Proposed Action.....	36
3.13.2.2 No Action.....	36
3.14 Utilities.....	36
3.14.1 Existing Environment	36
3.14.2 Environmental Consequences	37
3.14.2.1 Proposed Action.....	37
3.14.2.2 No Action.....	37
3.15 Cumulative Impacts	37
3.16 Potential for Generating Substantial Controversy	37
4.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT	38
4.1 Agency and Tribal Coordination	38
4.2 Public Involvement	41
4.2.1 Public Review of Draft Environmental Assessment.....	42
5.0 BEST MANAGEMENT PRACTICES AND MONITORING	42
5.1 Aesthetics	42
5.2 Air Quality	42
5.3 Geology and Soils	42
5.4 Hydrology and Water Quality.....	43
5.5 Wildlife and Habitat.....	43
5.6 Noise	44
5.7 Wetlands	44
5.8 Solid Waste and Hazardous Materials	44
5.9 Transportation and Parking.....	45
6.0 LIST OF PREPARERS.....	46
7.0 REFERENCES	47
8.0 GLOSSARY	49

LIST OF TABLES

Table 3-1. Federal and Indiana Ambient Air Quality Standards15
Table 3-2. Applicable *de minimis* Emission Levels for Nonattainment Areas under General
Conformity Rule17
Table 3-3. Estimate of Annual Particulate Emissions from Construction19
Table 3-4. Estimate of Annual Non-Road Emissions of Criteria Pollutants19
Table 3-5. Crown Hill Cemetery Soils23
Table 3-6. Federally Protected Species in Marion County, Indiana25
Table 4-1. Agency and Tribal Coordination for Expansion and Improvements at Crown Hill
Cemetery37

LIST OF FIGURES

Figure 1-1. Crown Hill Cemetery – General Location Map2
Figure 1-2. Existing Crown Hill National Cemetery3
Figure 2-1. Proposed Action – Property Location8
Figure 2-2. Crown Hill Cemetery Proposed Property - Aerial Photograph.....9
Figure 3-1. Crown Hill Cemetery Soil Survey23
Figure 3-2. Marion County Land Use Designations in Area of Crown Hill Cemetery29
Figure 3-3. Designated Flood Zones31
Figure 3-4. Surveyed Wetland Boundaries32

LIST OF PHOTOGRAPHS

Photograph 1. View of woods, looking northwest..... 10
Photograph 2. View of woods, looking northwest..... 10
Photograph 3. View of east side of woods, looking northwest..... 11
Photograph 4. View of woods, looking west. 11
Photograph 5. View within woods, looking southwest..... 12
Photograph 6. Coopers hawk within woods, looking south..... 12
Photograph 7. Hawk and squirrel on branch, looking south..... 13
Photograph 8. View of woods from 42nd Street, looking south. 13

ABSTRACT

LEAD AGENCY: U.S. Department of Veterans Affairs (VA), National Cemetery Administration (NCA)

COOPERATING AGENCIES: None

TITLE OF PROPOSED ACTION: Expansion and Improvements at Crown Hill National Cemetery, Indianapolis, Indiana

AFFECTED JURISDICTION: Marion County, Indiana

POINT OF CONTACT: Mr. Paul Rau, Realty Specialist, Real Property Service (003C1E) Office of Construction & Facilities Management, Department of Veterans Affairs - Central Office, 202.632.5693, Paul.Rau@va.gov

PROPONENT: NCA

DOCUMENT DESIGNATION: Final Environmental Assessment

This environmental assessment (EA) identifies, analyzes, and documents the potential physical, environmental, cultural, and socioeconomic impacts associated with expanding and improving the Crown Hill National Cemetery by purchasing a 14.75-acre wooded parcel north of the existing national cemetery. The proposed expansion project would create an entrance and roadway system to accommodate the construction of columbarium walls, a main flagpole area, and a small public information and restroom building. The cemetery would be developed in phases with each phase accommodating approximately 10 years of cremation capacity. Existing forested areas will be removed as each phase of development occurs; there will be some tree buffers and forested areas that are left undisturbed to retain the character and serenity of the site.

The purpose of the Proposed Action is to continue to enable the NCA to provide eligible Veterans and their families with a national cemetery of sufficient size and capacity to serve the projected needs in the central Indiana region 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.

This EA concludes that no significant impacts would be associated with the Proposed Action.

ACRONYMS AND ABBREVIATIONS

ASEL	A-weighted sound exposure level
BMP	Best Management Practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
dba	A-weighted decibel
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
USFWS	U.S. Fish and Wildlife Service
L _{max}	A-weighted maximum sound level
NAAQS	National Ambient Air Quality Standards
NCA	National Cemetery Administration
NEPA	National Environmental Policy Act
NOA	Notice of Availability
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
PM	Particulate Matter; PM _{2.5} and PM ₁₀ have average diameter less than 2.5 and 10 micrometers, respectively
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
USACE	U.S. Army Corps of Engineers
VA	U.S. Department of Veterans Affairs
VOC	Volatile Organic Compound

1.0 INTRODUCTION

The U.S. Department of Veterans Affairs (VA) National Cemetery Administration (NCA) honors Veterans and their families with final resting places in national shrines and with lasting tributes that commemorate their service and sacrifice to the nation. NCA maintains approximately 3.3 million gravesites at 131 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.

The existing Crown Hill National Cemetery is at capacity and cannot accept additional veterans for burial. The existing national cemetery is located approximately one mile south of the proposed new property. Figures 1-1 and 1-2 depict the location of the proposed expansion area and the existing national cemetery within Crown Hill Cemetery.

In this environmental assessment (EA), the NCA identifies, analyzes, and documents the potential physical, environmental, cultural, and socioeconomic impacts associated with expanding and improving the Crown Hill National Cemetery by purchasing a 14.75-acre wooded parcel north of the existing national cemetery. The proposed expansion project would create an entrance and roadway system to accommodate the construction of columbarium walls, a main flagpole area, and a small public information and restroom building. The cemetery would be developed in phases with each phase accommodating approximately 10 years of cremation capacity. The site is expected to accommodate up to 10 phases. Existing forested areas will be removed as each phase of development occurs; there will be some tree buffers and forested areas that are left undisturbed to retain the character and serenity of the site.

The purpose of the Proposed Action is to continue to enable the NCA to provide eligible Veterans and their families with a national cemetery of sufficient size and capacity to serve the projected needs in the central Indiana region 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.

Two alternatives are analyzed in this EA:

- The Proposed Action to expand the Crown Hill National Cemetery by purchasing a nearby wooded area north of the existing national cemetery property and constructing columbarium walls, an access drive, flagpole area, and public information and restroom facilities.
- The No Action alternative to not expand and improve the Crown Hill National Cemetery.



Figure 1-1. Crown Hill Cemetery General Location Map.

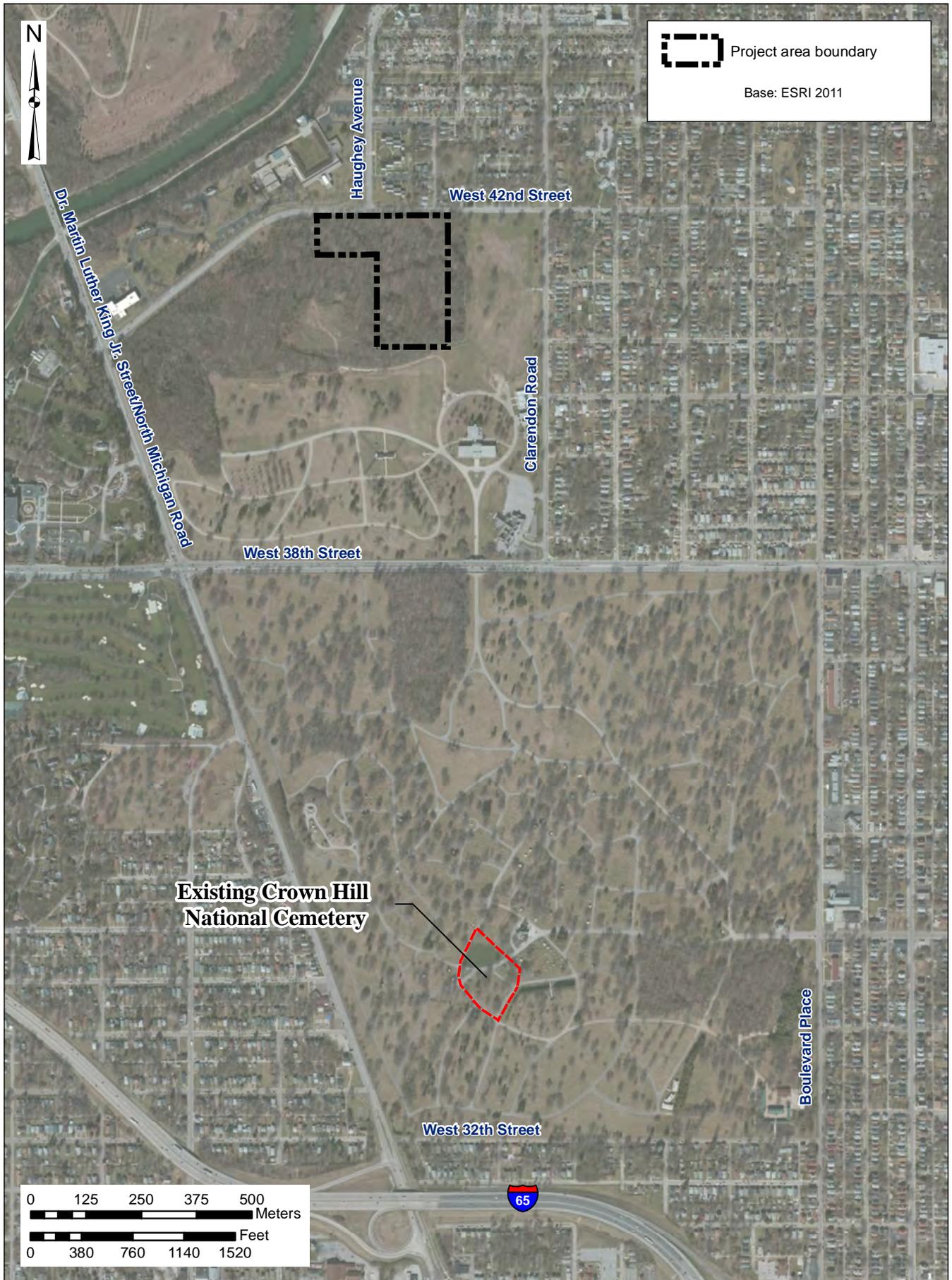


Figure 1-2. Existing Crown Hill National Cemetery.

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

This EA presents the purpose of and need for the Proposed Action and the project background (Section 1), provides details of the alternatives (Section 2), and describes the affected environmental and evaluates potential environmental consequences (Section 3). The remainder of the document provides a summary of agency coordination and public involvement (Section 4), best management practices and monitoring (Section 5), a list of preparers (Section 6), references (Section 7), and a glossary (Section 8).

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the Proposed Action is continue to enable the NCA to provide eligible Veterans and their families with a national cemetery of sufficient size and capacity to serve the projected needs in the central Indiana area 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.

1.2 PROJECT BACKGROUND AND EXISTING SITE

The existing Crown Hill National Cemetery is located within an older area of the privately owned historic Crown Hill Cemetery in Marion County, Indiana, within the city limits of Indianapolis. Crown Hill Cemetery occupies approximately 555 acres and was established in 1863 and officially dedicated in 1864.

Approximately 1.4 acres is currently managed as the national cemetery for Veterans. Situated on the gently sloping hill behind the Gothic Chapel, the national cemetery property was purchased by the U.S. Government in 1866 for the purpose of reburying 707 Union soldiers from City Cemetery. The cemetery is the resting place of 2,135 soldiers. The last soldier buried in the cemetery was Maj. Robert W. Hayes, an Air Force pilot killed in Vietnam in 1969. The existing Crown Hill National Cemetery is at capacity.

The proposed property to be purchased from Crown Hill for expansion of the national cemetery is not immediately adjacent, but is approximately one mile north of the existing national cemetery in an undeveloped part of the Crown Hill property. The proposed property is wooded with many large trees. It appears to have remained undisturbed for a very long time; possibly for more than 300 years given the size and probable age of some of the trees. The only apparent disturbances are a moderate amount of dumping of cemetery landscape waste on the south edge of the woods and the presence of an unpaved access road. This is a relatively large, old growth forest within the Crown Hill Cemetery property near downtown Indianapolis. The Crown Hill Cemetery and the nearby Indianapolis Museum of Art and Butler University properties contain some of the largest contiguous acreages of greenspace surrounded by a fully developed urban environment in the state of Indiana and possibly the Midwest.

1.3 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 and improvements to the Crown Hill National Cemetery in Indianapolis, Indiana. The analysis presented within this EA is primarily to determine if the purchase and proposed development of the undisturbed wooded parcel will have significant social, economic, and environmental negative impacts.

The 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 and guidance identified in Section 1.0. This EA:

- Informs the public of the possible environmental impacts of the Proposed Action and its considered alternatives, as well as methods to reduce these effects
- Provides for public, state, inter-agency, and tribal input into VA's planning and evaluation
- Documents the NEPA process
- Supports informed decision-making by the federal government

The decision for this proposed federal undertaking also identifies the actions to which VA would commit to minimize environmental effects, as required under NEPA, its implementing regulations from CEQ (40 CFR 1500-1508) and VA (38 CFR Part 26), and VA's NEPA guidance (VA 2010).

The decision to be made is whether—having considered the potential physical, environmental, cultural, and socioeconomic effects—VA should implement the Proposed Action including, as appropriate, measures to reduce adverse effects.

2.0 ALTERNATIVES

This section provides information on the Proposed Action and the No Action, which were the only two alternatives considered by the NCA and VA. NEPA, and the regulations of CEQ and VA for implementing NEPA, require all reasonable alternatives to be rigorously explored and objectively evaluated.

2.1 DEVELOPMENT OF ALTERNATIVES

The expansion area evaluated under the Proposed Action and the No Action alternatives were the only options considered by NCA and VA due to the availability of the proposed parcel for sale within the existing Crown Hill Cemetery in relatively close proximity to the existing national cemetery. To determine areas of the country in need of enhanced service, VA analyzed whether time and distance factors resulted in significantly lower utilization rates at national cemeteries and lower customer satisfaction levels among the client population. NCA's Urban Initiative criteria requires that the cemetery must be at least 50 miles from the urban core (center of the city) and requires a travel time of one hour or greater from the urban core to be considered for enhanced service under this initiative.

The NCS introduced a number of new burial policies targeting increased access and availability of burial options to our Nation's Veterans in the Department's fiscal year (FY) 2011 budget submission (Volume 3, pages 1C-3 to 1C-5). One of the new policies was the columbarium-only Urban Initiative to enhance service to Veterans and their families by establishing columbarium-only urban satellite cemeteries within the service area of existing national cemeteries. The establishment of a columbarium closer to the urban core will better serve Veterans and families currently facing distance and times challenges regarding the existing national cemeteries within their service areas.

2.2 ALTERNATIVES

The alternatives evaluated in this EA are the Proposed Action and No Action. The No Action alternative serves as the baseline for identifying the impacts from the Proposed Action.

2.2.1 Proposed Action: Expansion and Improvement

Under the Proposed Action, the Crown Hill National Cemetery would be expanded and improved to extend burial operations through the purchase of a 14.75-acre wooded parcel located one mile north of the existing national cemetery site. The proposed property to be purchased is privately owned by Crown Hill Cemetery and located at the far north end of their property line. If purchased, the property would be developed to include the following:

- Columbarium: columbarium walls would be constructed. No details regarding the capacity, dimensions, or exact location are available at this time.
- Flagpole Area
- Public Information and Restroom Building: utility infrastructure such as electric, water, and sewer would be constructed. Water and sewer would be connected to the city services.
- Roadway and Parking

Indianapolis is one of five columbaria locations NCA seeks to build as part of the Urban Initiative. It is intended to help better serve the Indianapolis veteran community who currently must travel in excess of 50 miles and more than one hour drive time to Marion National Cemetery for burials.

2.2.2 No Action

The No Action alternative serves as a benchmark against which the effects of the Proposed Action can be evaluated. For this project, No Action is defined as not purchasing the 14.75-acre wooded parcel in Crown Hill Cemetery.

The No Action alternative would challenge NCA's goal of providing eligible Veterans with reasonable access to VA burial options in the central Indiana area and, therefore, would not meet the purpose and need for action. Veterans and their families residing in the Indianapolis metropolitan area would be underserved and require Veterans and their families to travel in excess of 50 miles and more than one hour drive time to Marion National Cemetery or to use a private cemetery. The distribution of national cemeteries in the region would be unequal, and VA would not be in compliance with the requirements of the *Service Members Civil Relief Act*. Furthermore, the No Action alternative would create a hardship for the survivors attending the funerals and for visitations of deceased veterans interred in other national cemeteries, because of the distances between homes and the burial sites. If Veterans and their families must resort to private burials, they are deprived of the honor and privilege bestowed upon them by a grateful nation for their service to the United States of America.

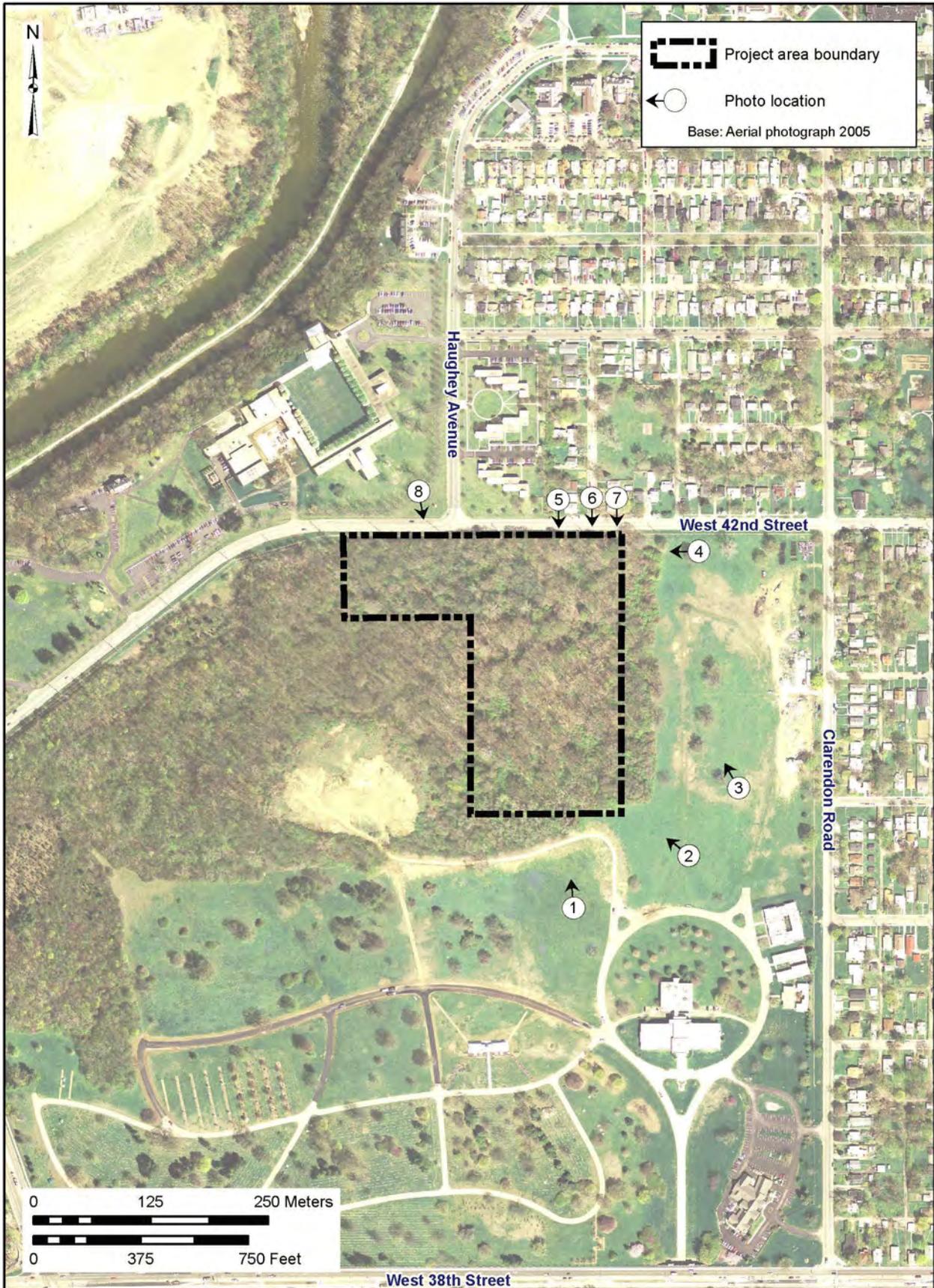


Figure 2-2. Proposed Action – Aerial Photograph.



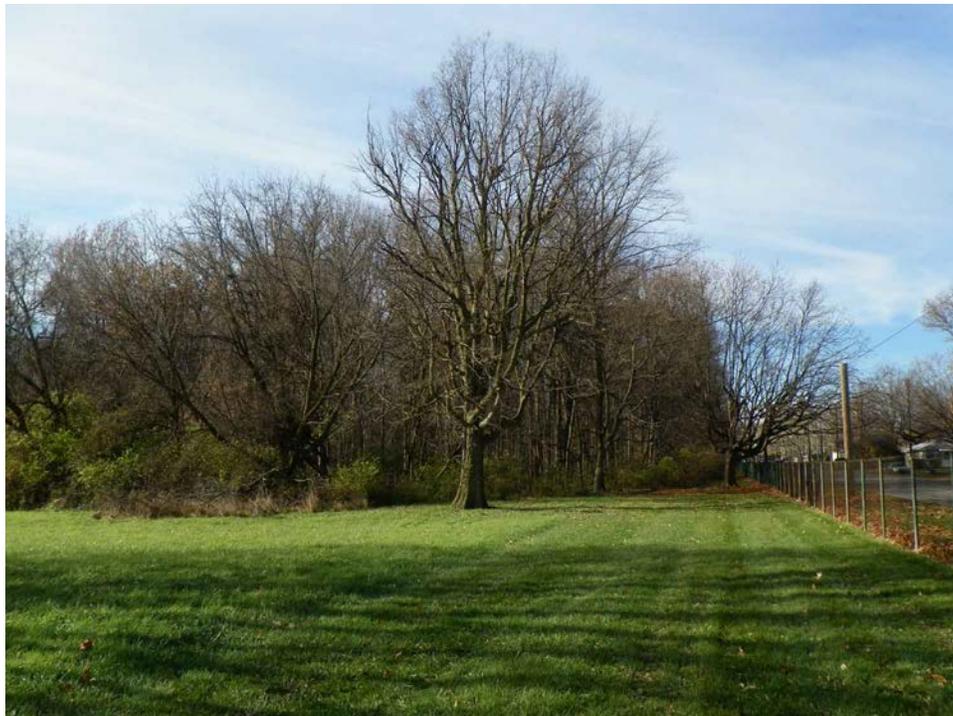
Photograph 1. View of woods, looking northwest.



Photograph 2. View of woods, looking northwest.



Photograph 3. View of east side of woods, looking northwest.



Photograph 4. View of woods, looking west.



Photograph 5. View within woods, looking southwest.



Photograph 6. Cooper's hawk within woods, looking south.



Photograph 7. Hawk and squirrel on branch, looking south.



Photograph 8. View of woods from 42nd Street, looking south.

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 AESTHETICS

3.1.1 Existing Environment

The project site consists of undeveloped land within the existing property boundary of the privately owned Crown Hill Cemetery, in a forested parcel with many old growth trees in excellent health. The Crown Hill Cemetery and the nearby Indianapolis Museum of Art and Butler University properties contain some of the largest contiguous acreages of greenspace surrounded by a fully developed urban environment in the state of Indiana. The land use surrounding the cemetery property is urban, residential, and institutional.

The wooded parcel is visible to residences and a seminary along 42nd Street, which runs along the north side property line of Crown Hill Cemetery. Residences along Clarendon Road on the east side of the Crown Hill Cemetery property line have a slightly more distant view of the project site. There is a large grassy field between Clarendon and the proposed wooded parcel.

Currently, there is no source of nighttime lighting at this property. The Crown Hill Cemetery Funeral Home is located approximately 200 meters southeast of the proposed parcel and has nighttime security lighting. The residences along West 42nd Street and Clarendon have basic residential lighting and street lights.

There are no designated wild and scenic rivers or scenic roadways in the project vicinity.

3.1.2 Environmental Consequences

3.1.2.1 Proposed Action

Details regarding the proposed site development are not available at this time. However, most of the site will change from an undisturbed forest to a manicured cemetery landscape. It is anticipated that some areas of undeveloped woodland would remain. If a buffer area of undisturbed forest is left around the perimeter, then a change in the existing aesthetics for neighboring residences will not occur.

The opportunity for the public to comment on potential aesthetic impacts was provided during the public involvement phase of the EA process. No public comments were received.

3.1.2.2 No Action

No changes to the visual character would occur from No Action. Therefore, there would be no impact to aesthetics.

3.2 AIR QUALITY

3.2.1 Existing Environment

3.2.1.1 Regional Climate

Weather and climate are important influences on air resources. Crown Hill Cemetery is located in Marion County, Indianapolis, Indiana. Indianapolis enjoys a moderate climate with warm

summers and cool weather during the winter months. The Indianapolis seasons of spring and autumn are usually pleasant, with temperatures between 18°C/65°F. Summer in Indianapolis can be hot, with a fairly humid climate. The warmest weather of the year is between the months of July and August, with temperatures between 31°C/90°F.

The winter months of December, January and February are the coolest of the year, and temperatures can drop to below freezing. Wintertime in Indianapolis can also bring snowfalls, especially during January and February. The average Indianapolis annual snowfall is 58 cm / 23 inches.

The city’s average annual precipitation is 102 cm/40 inches. The average July high is 86°F (30°C), with the low being 61°F (16°C). January highs average 34°F (1°C), and lows 18°F (-8°C). The record high for Indianapolis is 104.0°F (40°C), on July 14th, 1954. The record low is -27°F (-33°C), on January 19th, 1994. Snowfall varies from about 20 to 30 inches (500-760 mm) a year.

3.2.1.2 National Ambient Air Quality Standards

The National Ambient Air Quality Standards (NAAQS) (Table 3-1) established by the U.S. Environmental Protection Agency (EPA) and adopted by the Indiana Department of Environmental Management (IDEM) define the maximum allowable concentrations of pollutants that may be reached but not exceeded within a given time period to protect human health with a reasonable margin of safety. The ambient standards are for the criteria pollutants of carbon monoxide, nitrogen dioxide, ozone, lead, particulate matter (PM), and sulfur dioxide (SO₂). Particulate matter is further defined by size – less than 10 micrometers in diameter (PM₁₀) and less than 2.5 micrometers in diameter (PM_{2.5}). While ozone is a regulated pollutant, it is not emitted directly from sources but is formed by a combination of nitrogen oxides and volatile organic compounds (VOCs) reacting with sunlight in the atmosphere. Exceeding any of the NAAQS constitutes nonattainment of the standard in the area. A federally enforceable state implementation plan (SIP) is required for areas of nonattainment, and an EPA-approved maintenance plan is required when an area is reclassified from nonattainment to attainment.

The Crown Hill Cemetery, located in Marion County, is within the Indianapolis Metropolitan Planning Organization (MPO). The Indianapolis MPO lies within or partly within areas previously classified as non-attainment by the US EPA. In July 2013, the nine county area including Marion County was classified as in attainment of the NAAQS for ozone (2008 8-hour standard). In the same month, the area including Marion County was classified as maintenance for the fine particulate matter (PM 2.5) under the 1997 standard.

Table 3-1. Federal and Indiana Ambient Air Quality Standards.

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Carbon monoxide	Primary	8-hour	9 ppm	Not to be exceeded more than once per year
		1-hour	35 ppm	Not to be exceeded more than once per year

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
Lead	Primary and Secondary	rolling 3-month average	3 ¹	Not to be exceeded
Nitrogen dioxide	Primary and Secondary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		annual	53 ppb ²	Annual mean
Ozone	Primary and Secondary	8 hour	3	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
PM _{2.5}	Primary	annual	12 µg/m ³	Annual mean, averaged over 3 years
	Secondary	annual	12 µg/m ³	Annual mean, averaged over 3 years
	Primary and Secondary	24 hour	35 µg/m ³	98th percentile, averaged over 3 years
PM ₁₀	Primary and Secondary	24 hour	150 µg/m ³	Not to be exceeded more than once per year on average over 3 years
Sulfur dioxide	Primary	1 hour	75 ppb ⁴	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
	Secondary	2 hour	0.5 ppm	Not to be exceeded more than once per year

Pollutant	Primary/ Secondary	Averaging Time	Level	Form
<p>Sources: 40 CFR 50, OAC 3745-25-02</p> <p>¹ Final rule signed October 15, 2008. The 1978 lead standard (1.5 µg/m³ as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the previous standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.</p> <p>² The official level of the annual nitrogen dioxide standard is 0.053 ppm, equal to 53 ppb, which is shown here for the purpose of clearer comparison to the 1-hour standard.</p> <p>³ Final rule signed March 12, 2008. The 1997 ozone standard (0.08 ppm, annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years) and related implementation rules remain in place. In 1997, EPA revoked the 1-hour ozone standard (0.12 ppm, not to be exceeded more than once per year) in all areas, although some areas have continued obligations under that standard (“anti-backsliding”). The 1-hour ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above 0.12 ppm is less than or equal to 1.</p> <p>⁴ Final rule signed June 2, 2010. The 1971 annual and 24-hour SO₂ standards were revoked in that same rulemaking. However, these standards remain in effect until one year after an area is designated for the 2010 standard, except in areas designated nonattainment for the 1971 standards, where the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standard are approved.</p> <p>ppb = parts per billion; ppm = parts per million; µg/m³ = micrograms per cubic meter</p>				

3.2.1.3 General Conformity Requirements

General conformity requirements (EPA 2014) apply to all federal actions to ensure that:

- Federal activities do not cause or contribute to new violations of a NAAQS
- Actions do not cause additional or worsen existing violations of the NAAQS, or contribute to new violations
- Attainment of the NAAQS is not delayed

The implementing regulations for the general conformity rule establish *de minimis* thresholds for criteria pollutants and precursors (40 CFR 93 Subpart B). A “conformity determination” is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a nonattainment or maintenance area caused by a federal action would equal or exceed any of the *de minimis* thresholds (40 CFR 93.153(b)). Table 3-2 lists the *de minimis* emissions levels for the nonattainment areas that are applicable to the Indianapolis MPO.

Table 3-2. Applicable *de minimis* Emission Levels for Nonattainment Areas under General Conformity Rule

Area Designation	Pollutant	Precursor	<i>de minimis</i> level (tons/year)
All SO ₂ nonattainment areas	SO ₂	none	100
All lead nonattainment areas	Lead	none	25
Ozone nonattainment areas outside an ozone transport region other than one designated as Serious, Severe, or Extreme	Ozone	VOC or nitrogen oxides	100

3.2.1.4 State and Local Air Quality Requirements

State-wide air compliance and enforcement activities are coordinated by the IDEM, Air Compliance and Enforcement Branch. Indiana rules for air quality requires reasonably available control measures to prevent fugitive dust from becoming airborne during construction and demolition. Control measures generally include water or chemical dust suppression (IAC 326).

City and county-level air quality requirements fall under the Indianapolis MPO, serving nine central Indiana counties including Marion County. The MPO focuses on air quality engineering, enforcement, and monitoring; however, it directs users to the IDEM and defers to their regulations (IAC 326, Title 2).

3.2.1.5 Existing Emissions Sources

The Crown Hill National Cemetery does not have any current emission sources. Power and heat to existing structures are supplied from the local utility service.

3.2.1.6 Sensitive Receptors

CEQ's NEPA regulations require evaluation of the degree to which the proposed action affects public health (40 CFR 1508.27). Children, elderly people, and people with illnesses are especially sensitive to the effects of air pollutants; therefore, hospitals, schools, convalescent facilities, and residential areas are considered to be sensitive receptors for air quality impacts. The area surrounding Crown Hill Cemetery contains residential and institutional land uses. The Indianapolis Canal and the White River are approximately .25 mile northwest of the property separated by roads, the Christian Theological Seminary, and residences. Within Crown Hill Cemetery, immediately adjacent to the proposed project area, is a continuation of the forest to the west. Large, mowed grassy fields are present to the south and east. No schools or hospitals are located within one mile of the cemetery.

3.2.2 Environmental Consequences

The proposed project is located in an air quality control region designated as attainment and maintenance.

3.2.2.1 Proposed Action

Marion County is in maintenance status for Ozone (O₃), Carbon Monoxide (CO), and Fine Particulate Matter (PM_{2.5}). The proposed project is exempt from conformity determination because it is a cemetery expansion project that is for passive use. The proposed project would not increase O₃, CO, and PM_{2.5} emissions.

The proposed action will not require an air emissions permit, registration, or license during construction or during normal operations after site development.

The proposed action will not release objectionable odors, smoke, dust, suspended particles, or noxious gases into the air during construction or during normal operations after site development.

The proposed action will not expose sensitive receptors to pollutants during construction or during normal operations after the site development. Potential construction could include approximately 60 days of earthwork activities (excavation and grading). Particulates are the main air pollutant of concern from construction projects. Project activities would comply with state requirements (IAC 326) by implementing reasonably available control measures (generally including water or chemical dust suppression) to prevent fugitive dust from becoming airborne. Still, construction activities would generate both coarse and fine particulate emissions from soil excavation and removal, grading and sloping, and small-scale road construction. The amount of particulate emissions can be estimated from the amount of ground surface exposed, the type and intensity of activity, soil type and conditions, wind speed, and dust control measures used. Total suspended particulates were calculated using the emission factor for heavy construction activity operations from "AP-42, Compilation for Air Pollutant Emission Factors" (EPA 1995), to provide a conservative estimate of PM emissions. Estimates are shown in Table 3-3.

Table 3-3. Estimate of Annual Particulate Emissions from Construction.

Total Area (acres)	Exposed Area (acres)	Construction Duration (months)	Emission Factor (tons/acre/month)	Control Efficiency (%)	Total Suspended Particulate Emissions (tons)
14.75	14.75	2	1.2	80	14.4
Emission factor for "Heavy Construction Operations (EPA 1995).					

Non-road construction vehicles would emit less than significant amounts of SO₂ and the ozone precursors VOCs and NO_x. They would not emit lead. Criteria pollution emissions from construction equipment were calculated assuming the use of three backhoes, one grader, and one bulldozer operating for approximately eight hours per day for a total of 60 days. Emissions were estimated using "Off-Road-Model Mobile Source Emission Factors" from the California South Coast Air Quality Management District because Indiana and federal EPA emission factors are not available. Table 3-4 shows estimated emissions and calculations. Emissions of SO_x, lead, NO_x, and VOCs are below *de minimis* thresholds; therefore, conformity determinations are not required.

Table 3-4. Estimate of Annual Non-Road Emissions of Criteria Pollutants.

Criteria Pollutant ²	SO _x	NO _x	Estimated Emissions ¹ VOCs ³	CO	Lead
Emissions (tons)	0.0015	1.0954	0.1440	0.6599	0
<i>de minimis</i> level (tons/year)	100	100	100	NA	25
¹ Calculated using "Off-road Mobile Source Emission Factors (Scenario Years 2007 – 2025) (SCAQMD 2014). ² PM emissions from non-road construction vehicles are included in the general construction emissions factor applied in the estimates in Table 3-3, and therefore non-road emissions of PM are not included in this table. ³ VOCs are assumed to be equivalent to Reactive Organic Gases for calculating non-road construction equipment emissions.					

3.2.2.2 No Action

The No Action alternative would result in no change to the existing air quality.

3.3 CULTURAL RESOURCES

Cultural resources include both historic and prehistoric archaeological resources, as well as historic structures in the built environment. This impact analysis focused on sites and structures listed in or eligible for nomination to the National Register of Historic Places (NRHP), and the regulations (36 CFR Part 800) for implementing Section 106 of the *National Historic Preservation Act of 1966*.

3.3.1 Existing Environment

The project area is located in Marion County on the 1998 Indianapolis West quadrangle in the: NW ¼ of the SW ¼ of Section 14 (SW corner alignment), Township 16N, Range 3E in Washington Township. The project area is set in a forested tract with relatively sparse undergrowth located in Crown Hill Cemetery.

The land that may be acquired by VA for expansion of the Crown Hill National Cemetery, consisting of 14.75 acres, was surveyed in its entirety for archaeological resources and was investigated by pedestrian survey, shovel probing, and soil coring (Giedd et al. 2015). The survey was conducted to identify and evaluate any archaeological resources that might have been adversely affected by development of the cemetery. Pedestrian survey, using transects spaced at 10 m (32.8 ft) intervals, identified six sites (12Ma0982–12Ma0984 and 12Ma0986–2Ma0988). Shovel probes were excavated every 15 m (49.2 ft) when ground surface visibility was less than 30 percent. A total of 52 shovel probes were excavated, none of which found any cultural material. All six sites were observed and recorded through pedestrian survey. These sites consist of the remnants of historic structures, artifact scatters, and dump areas that are not likely to produce significant information.

There is no potential for any archaeological information to be gained from the dump sites (12Ma0982, 12Ma0983 and 12Ma0987). They lack significance and integrity; therefore, further archaeological investigation is not recommended. Site 12Ma0984 is located within an area containing disturbed soil and consisted of a small fenced-in enclosure with a few artifacts on the surface. The site lacks integrity and significant information potential. There is nothing notable about the fenced-in enclosure. Further archaeological investigation is not recommended. Site 12Ma0986 consists of two dirt piles, one manhole, and one wooden stake. Nothing about this site is notable and it lacks integrity and significant information potential. Therefore, further archaeological investigation is not recommended. Site 12Ma0988 is a large scattered pile of rocks, sewer debris, and structural debris. There is nothing notable about the rock pile or the sewer and structural debris. Further archaeological investigation is not recommended.

Shovel probing did not encounter any large areas of deep alluvium so it is unlikely that deeply buried sites could be present in the project area. A copy of the report (Giedd et al. 2015) was sent to the Indiana SHPO on June 17, 2015. The SHPO had 30 days to review the report and respond with their opinion of the significance of the six sites (12Ma0982–12Ma0984 and 12Ma0986–12Ma0988). In a letter dated July 14, 2015, the SHPO confirmed that none of the six sites are NRHP-eligible.

The Area of Potential Effect (APE) consists of an area consistent with the project area boundaries, because the undertaking will result in the purchase of the wooded parcel. Crown Hill Cemetery was listed on the NRHP in 1973 under Criterion C, Criteria Consideration D, for its significance in the fields of landscape architecture and architecture. However, its NRHP boundaries do not extend north of West 38th Street and do not include the project area. The portion of Crown Hill Cemetery north of West 38th Street is not included in the NRHP-listed portion of the cemetery, as it was not designed with a planned landscape and is mostly of recent origin. Examination of the Indiana State Historic Architectural and Archaeological Research Database (SHAARD) and the

Washington Township, Marion County Interim Report (Historic Landmarks Foundation of Indiana [HLFI] 1998) identified no previously documented properties within the APE. The NRHP Criteria for Evaluation have not previously been formally applied to any properties within the APE. According to the Indiana Historic Bridge Inventory, no bridge or small structure within the project area is present in the project area.

3.3.2 Environmental Consequences

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

3.3.2.1 Proposed Action

Since the proposed parcel to be purchased and developed is not within or immediately adjacent to the existing national cemetery, it would result in no adverse effect to the existing NRHP-eligible national cemetery property. A letter report pursuant to consultation required by Section 106 of the National Historic Preservation Act was sent on June 26, 2015, presenting the assessment and findings and requesting SHPO concurrence with a conclusion of No Adverse Effect to historic properties as well as consulting party invitation.

3.3.2.2 No Action

No property purchase and construction activity would occur under the No Action alternative. Therefore, there would be no impact to cultural resources.

3.4 GEOLOGY AND SOILS

3.4.1 Existing Environment

The proposed parcel is located in the Central Till Plain Region of Indiana. Two soil types are mapped on site: Miami silt loam (MmA, 0–2 percent slopes), which is well-drained, and Miami silt loam (MmB2, 2–6 percent slopes), which is moderately well-drained.

The Crown Hill Cemetery is located in seismic zone 1, indicating some earthquakes have occurred and are expected, but little or no damage should result. The site is generally flat with very gradual sloping on the west and east sides of the proposed parcel. Site drainage is moderate as there are some areas of water retention, and three isolated forested wetlands are present.

Figure 3-1 shows the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) National Cooperative Soil Survey for the cemetery project. Table 3-5 presents the acreages associated with each soil type.

The early coordination response received from the Indiana Geological Survey (IGS) did not identify any issues associated with the site geology and soils.

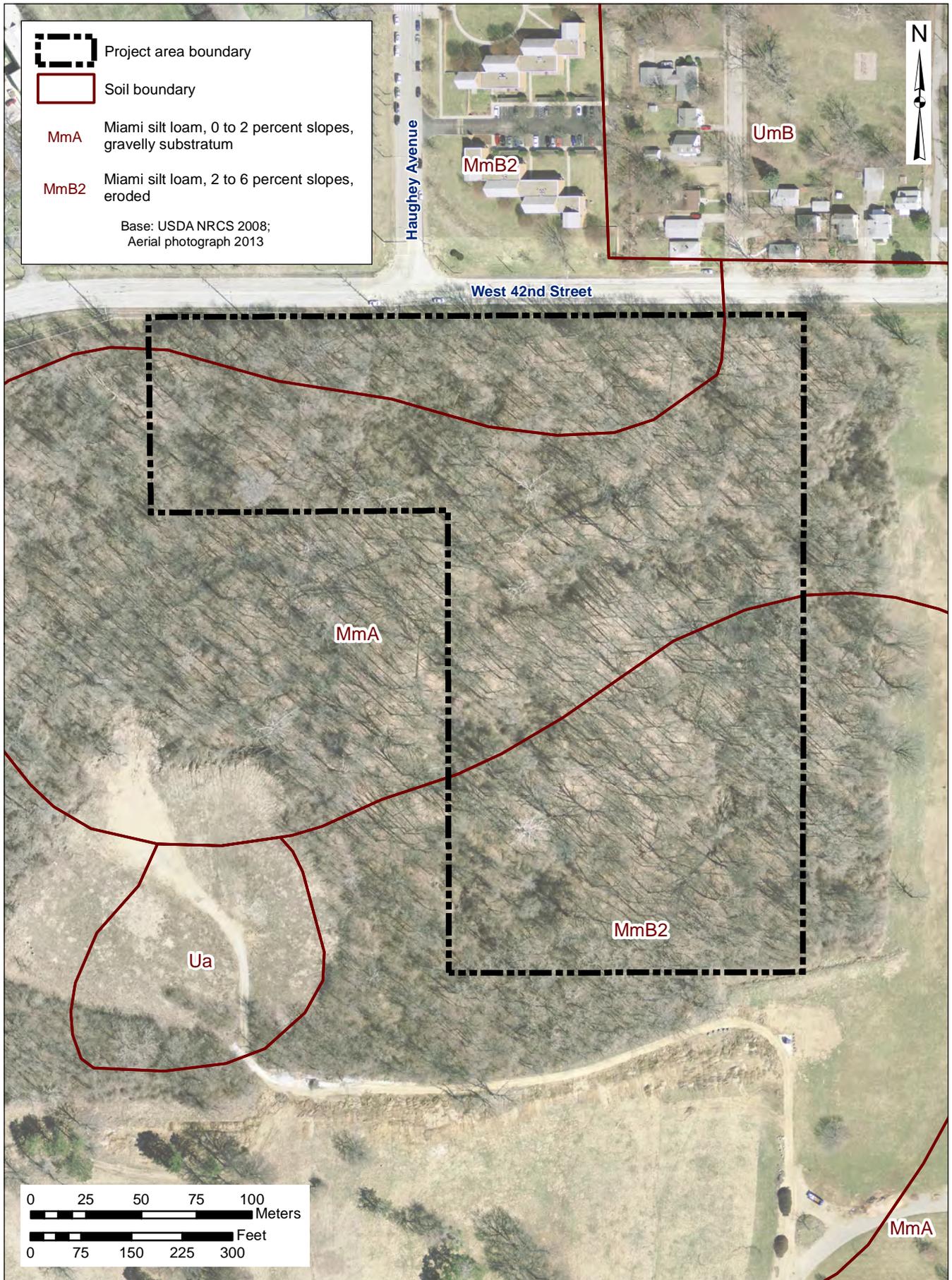


Figure 3-1. Crown Hill Cemetery Soils.

Table 3-5. Crown Hill Cemetery Soils.

Soil Map Unit	Soil Name	Acres	Percent
MmA	Miami silt loam (0–2 percent slopes)	7.25	49
MmB2	Miami silt loam (2–6 percent slopes)	7.50	51

3.4.2 Environmental Consequences

Soil characteristics in the proposed project area would not preclude cemetery use.

3.4.2.1 Proposed Action

The proposed action would occur in an area of minimal sloping toward natural site drainages. Soils generated during excavation would be reutilized in areas requiring fill material or transported offsite. Site topography would not be substantially altered. Drainage changes resulting from changes to site topography are anticipated to be minimal and would be monitored for erosion potential through routine site stormwater management practices.

Minor short-term adverse erosion and sedimentation impacts would be possible during both the construction and operational phases of the project. Construction activities (including vegetative clearing, adjustments to site grading, new roadway construction, and construction of small structures) would disturb and expose subsurface soils, increasing susceptibility to wind and surface runoff erosion. Wind erosion could temporarily increase airborne particulate matter in the area, resulting in short-term health, visibility, and aesthetics impacts. Temporary increases in sedimentation in stormwater drainages could occur as a result of surface runoff erosion.

The early coordination response from NRCS state that no prime or unique farmland would be converted from the cemetery expansion project.

Minor short-term adverse erosion and sedimentation impacts could be minimized through implementation of construction BMPs practices and conformance with NPDES permit requirements. These minimization opportunities are described in Section 5.0

A general stormwater permit from IDEM must be obtained if the construction activities will disturb one or more acres of land.

3.4.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to geology and soils would result.

3.5 HYDROLOGY AND WATER QUALITY

3.5.1 Existing Environment

The Crown Hill Cemetery proposed property is in the Upper White River watershed (Hydrologic Unit Code 0512020). The site contains three isolated forested wetlands within the proposed perimeter. There is also a large wetland complex outside of the proposed parcel, immediately

adjacent to the west. The site is generally flat with gradual sloping on the west and east perimeter of the parcel. Site drainage is moderate with areas of water retention.

3.5.2 Environmental Consequences

Surface water would not be significantly impacted by cemetery construction and operations. However, it is anticipated that an insignificant increase in surface water runoff can be expected in areas where substantial tree and shrub removals occur and where impervious surfaces are placed. Restroom facilities to be constructed will be connected to the city water and sewer system. No negative impacts to groundwater or water quality are anticipated.

3.5.2.1 Proposed Action

Short-term adverse erosion and sedimentation impacts associated with construction activities would be possible, as described in Section 3.4.2.1. Minimization strategies are described in Section 5.0, including conformance with NPDES permit requirements. Long-term impacts would not be expected.

Cemetery operations in the area of the Proposed Action would have no impact to groundwater as no in-ground burials are proposed. The use of cremation interment and columbaria will not impact groundwater resources in the area. The use of groundwater for irrigation of the cemetery landscape has not been proposed.

3.5.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to hydrology and water quality would result.

3.6 WILDLIFE AND HABITAT

3.6.1 Existing Environment

The proposed property is wooded with many large trees. It appears to have remained undisturbed for a very long time; possibly for more than 300 years given the size and probable age of some of the trees. The only apparent disturbances are a moderate amount of dumping of cemetery landscape waste on the south edge of the woods and the presence of an unpaved access road. This is a relatively large, old growth forest within the Crown Hill Cemetery property near downtown Indianapolis. The Crown Hill Cemetery and the nearby Indianapolis Museum of Art and Butler University properties contain some of the largest contiguous acreages of greenspace surrounded by a fully developed urban environment in the state of Indiana and possibly the Midwest.

A preliminary site visit was conducted on November 20, 2013, from which the recommendation for an ecological field survey and Waters of the U.S. Determination and Wetland Delineation originated. The recommended survey was completed on April 30 and May 1, 2015. Three isolated wetlands and an unnamed drainage feature were documented in the project area. No state or federal protected plant or animal species were observed.

The dominant plant species observed in the wetland areas were large white oak trees (*Quercus alba*), lake sedge (*Carex lacustris*), sycamore trees (*Celtis occidentalis*), grey dogwood (*Cornus*

racemososa), golden groundsel (*Packera aurea*), American elm trees (*Ulmus americana*), touch-me-not (*Impatiens capensis/pallida*), and wild grape vines (*Vitis riparia*). There is an extraordinarily large bur oak tree (*Quercus macrocarpa*) located within the boundary of one of the wetlands that may be more than 500 years old.

The dominant plant species observed in upland areas were pignut hickory trees (*Carya glabra*), white oak trees (*Quercus alba*), bur oak trees (*Quercus macrocarpa*), Japanese honeysuckle (*Lonicera japonica*), trout lilies (*Erythronium rostratum*), May-apples (*Podophyllum peltatum*), and prairie trillium (*Trillium recurvatum*).

The animal observations during the field survey(s) were northern white-tailed deer, eastern fox squirrels, raccoons, coyote (tracks observed), Cooper’s hawk (*Accipiter cooperii*), and a large variety of songbirds.

Table 3-6. Federally Protected Species in Marion County, Indiana

Species	Habitat	Federal Status	State Status
Indiana Bat	Woodlands near riparian corridors, caves, and mines	Endangered	Endangered
Northern Long-eared Bat	Woodlands near riparian corridors, caves, and mines	Threatened	Threatened

There are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the project area.

3.6.2 Environmental Consequences

3.6.2.1 Proposed Action

The United States Fish and Wildlife Service (USFWS) and the Indiana Department of Natural Resources (IDNR) responded to the request for early coordination. USFWS confirmed that federally protected plant and animal species have not been documented within the proposed project location. However, the summer roosting habitat for the federally protected Indiana Bat and Northern Long-eared Bat is present. The USFWS stated that the project will not eliminate enough habitat to affect the species, but to avoid incidental take, tree clearing should be avoided April 1 – September 30. If this temporal restriction is implemented, then USFWS concurs that the proposed project is not likely to adversely affect the species. IDNR provided additional avoidance, minimization, and mitigation recommendations detailed in Section 5.0. IDNR requested to be contacted as a stakeholder for additional environmental review when detailed plans of the site design are available.

While the acquisition of the property will have no potential impact to wildlife, the proposed tree and vegetation removal will displace resident and migratory wildlife by decreasing the amount of habitat available for nesting, foraging, and cover. The fact that the vegetation removal and development of the site will occur in phases over a period of potentially 100 years will help minimize the impact. Crown Hill Cemetery is a 555-acre property of passive greenspace area. There are large trees throughout the existing cemetery property that provides habitat for birds and

squirrels despite the lawn maintenance activities at ground level. The Proposed Action is within an undisturbed woodland that provides habitat for a greater diversity of wildlife than the operational cemetery grounds. While the Proposed Action will have a negative impact to wildlife, the impacts can be minimized and mitigated by following the IDNR recommendations and BMPs detailed in Section 5.0.

It is important to point out that the proposed property has been for sale for several years. Non-cemetery development has been considered in the past at this site. If the VA does not purchase the land, then the property will likely remain for sale and another type of development will eventually occur. The Proposed Action by the VA has the potential to provide protection, in perpetuity, of many natural features in the woodland by retaining the old growth trees, through context sensitive design, and by implementing several of the IDNR recommendations. The Proposed Action would provide a very special final resting place for Veterans while maintaining the serenity and tranquility already inherent to the site.

3.6.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to wildlife and habitat would result. However, the property would remain for sale and vulnerable to future development.

3.7 NOISE

3.7.1 Existing Environment

The area surrounding Crown Hill Cemetery contains residential and institutional land uses. The Indianapolis Canal and the White River are approximately .25 mile northwest of the property separated by roads, the Christian Theological Seminary, and residences. Within Crown Hill Cemetery, immediately adjacent to the proposed project area, is a continuation of the forest to the west. Large, mowed grassy fields are present to the south and east. The principal sources of noise in the area include traffic and on the cemetery property, periodic construction and maintenance activities, and ceremonial M-16 rifle salutes. The overall noise levels are typical of a quiet area and are consistent with a cemetery setting.

3.7.2 Environmental Consequences

Operation of the cemetery to date (including ceremonial M-16 rifle salutes) has not resulted in noise complaints from neighboring residents.

3.7.2.1 Proposed Action

The Proposed Action, parcel acquisition would not result in minor, intermittent, or long-term adverse noise impacts. Sources of operational-related noise include ceremonial M-16 rifle salutes and grounds maintenance equipment (including mowers, leaf blowers, and small vehicles). These operational-related noise sources are consistent with the current operations of the cemetery and have not resulted in noise complaints from neighboring residents.

Potential construction activities after the Proposed Action could result in minor short-term adverse noise impacts. Sources of construction-related noise would include construction equipment (including land clearing and grading equipment, trucks removing excess soils and waste, and

road construction and paving equipment) and other contractor vehicles commuting to and from the site. Construction activities would be scheduled to minimize impacts to interment ceremonies to the extent possible. Construction will take place during daylight hours unless there is a specific action that would directly impact the operation of the cemetery.

3.7.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to noise would result.

3.8 LAND USE

3.8.1 Existing Environment

The area surrounding Crown Hill Cemetery contains residential and institutional land uses. The Indianapolis Canal and the White River are approximately .25 mile northwest of the property separated by roads, the Christian Theological Seminary, and residences. Within Crown Hill Cemetery, immediately adjacent to the proposed project area, is a continuation of the forest to the west. Large, mowed grassy fields are present to the south and east. There is no contamination documented within or immediately adjacent to the Proposed Action.

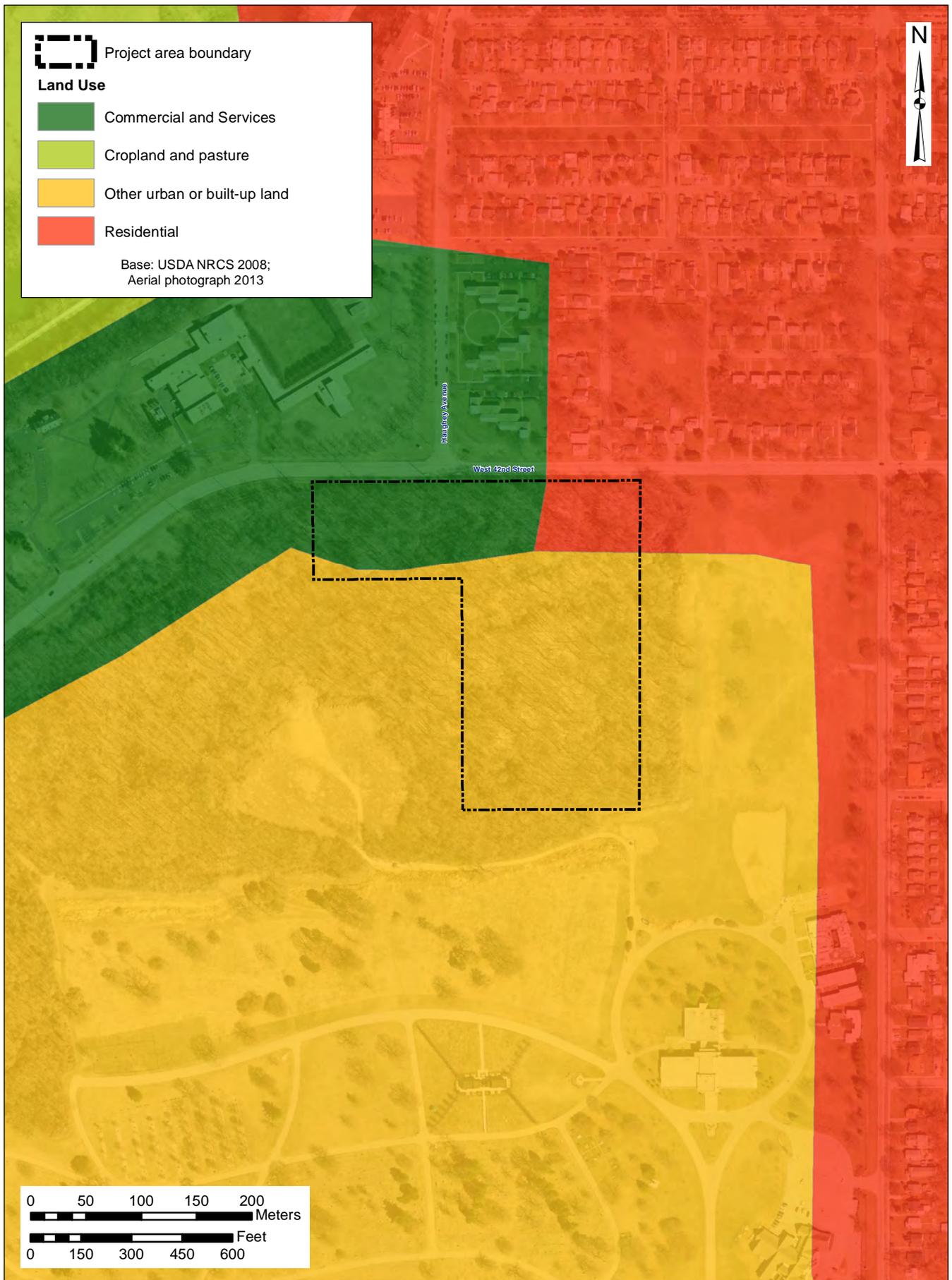


Figure 3-2. Marion County Land Use Designations in Area of Crown Hill.

3.8.2 Environmental Consequences

3.8.2.1 Proposed Action

The Proposed Action would occur within the boundary of the Crown Hill Cemetery property. While the Proposed Action will eliminate portions of undisturbed woodland, the continuation of cemetery land use is compatible and will continue to provide passive greenspace. There would be no land use impacts as a result of the Proposed Action.

3.8.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to land use would result.

3.9 FLOODPLAINS, WETLANDS, AND COASTAL ZONE MANAGEMENT

3.9.1 Existing Environment

Crown Hill Cemetery is located in an upland area. The Indianapolis Canal and the White River are approximately .25 mile northwest of the property separated by roads, the Christian Theological Seminary, and residences. The Proposed Action is not within any flood hazard zone mapped by the Federal Emergency Management Agency (FEMA). Figure 3-3 shows the location of flood zones.

A Waters of the U.S. Determination and Wetland Delineation survey was conducted for the proposed property on April 30 and May 1, 2015 (ASC Group, Inc.). The purpose of the assessment was to identify potential wetland areas that would be regulated under the jurisdiction of the U.S. Army Corps of Engineers (USACE) under Section 404 of the *Clean Water Act*, or the IDEM 401 Water Quality Certification Program. Three isolated wetland areas ranging from 0.02 to 0.73 acre (totaling 0.87 acre) were identified during the field survey along with an unnamed drainage feature (Figure 3-4). The wetlands are isolated with no direct connectivity to other waters of the U.S.

Marion County is not located in the Indiana Coastal Zone Management Area (IDNR – Coastal Zone Management Program). Therefore, coastal zone management is not discussed further in this EA.

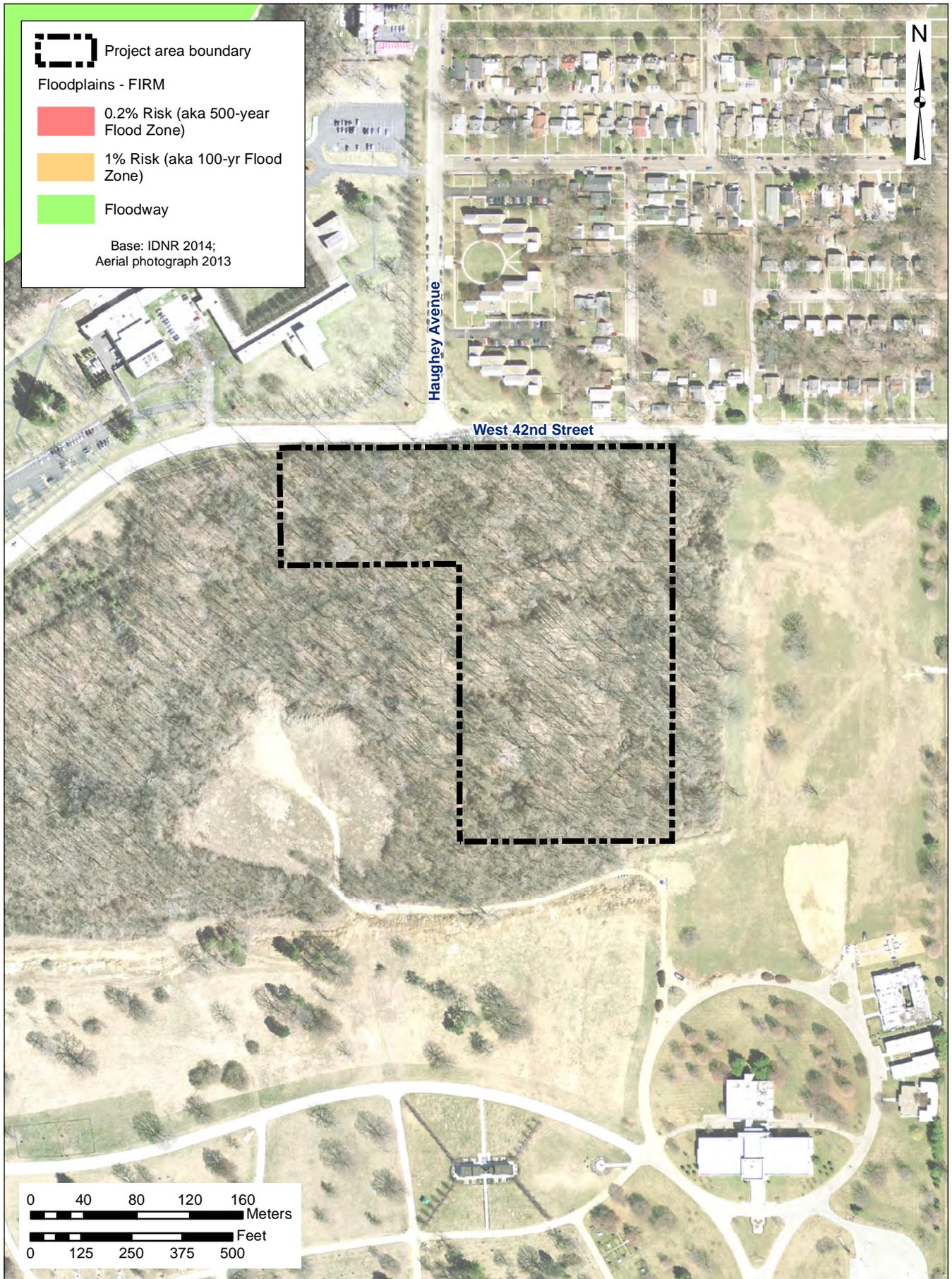


Figure 3-3. Crown Hill Cemetery Floodplain.

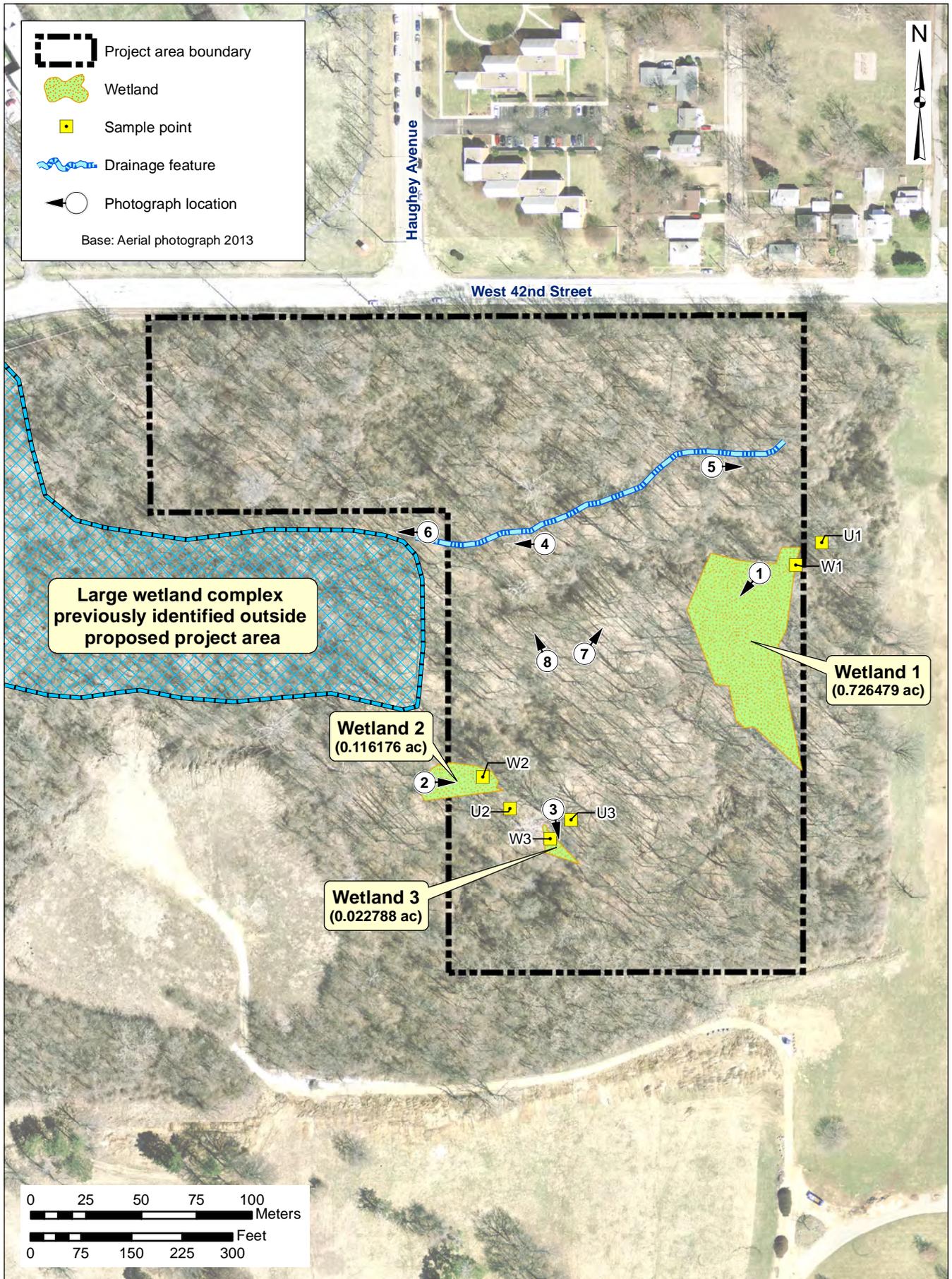


Figure 3-4. Crown Hill Cemetery Surveyed Wetland Boundaries.

3.9.2 ENVIRONMENTAL CONSEQUENCES

3.9.2.1 Proposed Action

The purchase of the property will have no impact to these wetlands. No design details or conceptual plan is currently available for the location of the columbarium, flagpole area, a restroom and public information building, roadway, and parking areas. Every effort to avoid impacts to these wetlands will be made during the design phase. If impacts to wetlands are unavoidable and are equal to or greater than 0.10 acre, an IDEM 401 permit would be required. Coordination with the USACE would also be required to confirm that the features are non-jurisdictional.

3.9.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to floodplains, wetlands, and coastal zone management areas would result.

3.10 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

3.10.1 Existing Environment

The 2014 population of Indianapolis, Indiana was estimated as 934,243, an increase of 3.4 percent over the 2010 population. Per capita income in 2013 was \$24,124. The largest employment sectors from 2004 data, in decreasing order, are:

- Trade, transportation, and utilities
- Professional business services
- Government
- Education and health
- Manufacturing
- Leisure and hospitality
- Financial activities
- Construction and mining
- Other
- Information

The distribution of employment sectors has not substantially changed within the last 10 years. The unemployment rate in January 2005 was 5.6 percent, in January 2010 it was 10.5 percent, and January 2015 it was 6.2 percent.

3.10.2 Environmental Consequences

3.10.2.1 Proposed Action

Under the Proposed Action, cemetery operations would continue for an additional 100 years with expansion to the proposed project area occurring, approximately, every 10 years. The Proposed Action is expected to cause no change to population, income levels, housing, local tax revenue, or environmental justice issues. A minor and temporary increase in employment could occur if the contractor that would be retained to develop the expansion area hires additional local crew members, resulting in a possible short-term localized beneficial impact to employment.

3.10.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to socioeconomics and environmental justice would result.

3.11 COMMUNITY SERVICES

3.11.1 Existing Environment

The existing Crown Hill National Cemetery has provided burial services for Veterans and their families in the Indianapolis, Indiana region since 1866. It is a 1.4-acre property and is at capacity. Veterans and their families must travel in excess of 50 miles to the Marion National Cemetery for burial services.

Other community services include police protection, fire protection, emergency services, schools, health care, and parks and recreation. Because no additional load is expected to be placed on the fire or police departments, and changes are not expected in use of or access to other public or community services as a result of the expansion of burial areas at the national cemetery, impacts to community services other than Veterans burial services were not analyzed in this EA.

3.11.2 Environmental Consequences

3.11.2.1 Proposed Action

Under the Proposed Action, existing cemetery operations would continue for an additional 100 years, allowing NCA to resume providing burial services to Veterans and their families in the Indianapolis area. Therefore, the Proposed Action would provide a continuing beneficial impact.

3.11.2.2 No Action

Under No Action, cemetery expansion would not occur and Veterans and their families would be required to travel more than 50 miles and in excess of one hour to Marion National Cemetery in Marion, Indiana for burial services. This would not meet the goals of the NCA Urban Initiative and would have an adverse effect on Veterans burial services.

3.12 SOLID WASTE AND HAZARDOUS MATERIALS

3.12.1 Existing Environment

The Proposed Action is within an undisturbed woodland in which no development has taken place. The site does not currently generate solid or hazardous materials. There is no documented occurrence of contamination or underground storage tanks on the property or immediately adjacent. There is evidence of cemetery landscape waste in an area outside of the proposed property immediately adjacent to the southwest. It appears to be made up of soil and other miscellaneous solid waste materials from cemetery maintenance and operational activities.

3.12.2 Environmental Consequences

3.12.2.1 Proposed Action

Construction-related activities under the Proposed Action have the potential to generate solid waste. However, solid waste generation from these activities is anticipated to be a minor contributor to overall solid waste generation in the region and would not result in adverse impacts. Staging and operation of construction equipment carries and increased potential for incidental releases of vehicle fluids. Proper vehicle maintenance and inspection would reduce this potential, and adverse impacts are not expected.

Solid waste would be generated by cemetery operations on a routine basis. Solid waste generally consists of flowers and other items left behind at burial sites, and container waste associated with minor vehicle maintenance activities. Excess excavated soils would not be an issue because there are no in-ground burial sites proposed. The solid waste that is generated should be collected weekly, as needed, and transferred to a municipal solid waste landfill. If the existing landscape waste area located southwest of the proposed property is within view of the proposed national cemetery, then planning with Crown Hill Cemetery operations staff should take place to minimize the aesthetic impact to the national cemetery.

Hazardous materials may be brought onsite by contractors as needed for activities such as pest control, weed management, and road deicing.

Cemetery operations under the Proposed Action would generate minimal amounts of solid waste and would be a minor contributor to overall solid waste generation in the area and would not result in adverse impacts. Pesticide application and road maintenance would be expanded to the new operational areas, but would continue to be serviced by contractors in accordance with material specifications and would not result in adverse impacts.

3.12.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to solid waste and hazardous materials would result.

3.13 TRANSPORTATION AND PARKING

3.13.1 Existing Environment

Crown Hill Cemetery is located in an urban area of Marion County within four miles of the Indianapolis downtown city center. The existing national cemetery is in an older part of Crown Hill, south of 38th Street and accessible from the main entrance on Boulevard Place Road. The proposed property is in the newer part of Crown Hill, north of 38th Street and accessible from the entrance on Clarendon Road which is located approximately 250 meters southeast near the Crown Hill Cemetery Funeral Home. Employees and visitors use the Clarendon Road entrance daily during cemetery hours with a gate that is locked in the evening.

Vehicle travel along Clarendon Road in the vicinity of the cemetery is typically associated with cemetery visitations and operations along with travel by area residents. Traffic count data along Clarendon Road is not available, but the average daily traffic (ADT) along 38th Street, the principal

arterial that bisects the Crown Hill Cemetery property is approximately 26,976 vehicles (IMPO). The ADT is based on 2002 estimates available from the Indianapolis MPO. Most vehicles are not turning north on Clarendon Road or south on Boulevard Place Road for entrance into the cemetery property. There is a significant amount of recreational use of the cemetery property. Individuals and small groups of runners, bikers, and walkers use roadways within the cemetery grounds. Access to the cemetery is also available by public transit with nearby bus stops along 38th Street within close walking distance.

Ample parking for cemetery staff and short-term vehicle parking for cemetery visitors is currently available in a large parking lot located at the Crown Hill Funeral Home approximately 200 meters southeast of the Proposed Action. Details regarding proposed parking locations at the proposed property are not currently available.

3.13.2 Environmental Consequences

Operation of the existing cemetery to date has not resulted in significant impacts to the area transportation network.

3.13.2.1 Proposed Action

The impact of the new national cemetery property on day-to-day transportation is expected to be minimal. Construction-related activities under the Proposed Action would result in a short-term adverse impact to the transportation network in the immediate cemetery vicinity. During construction, an increase in the number of vehicles (including trucks and personal vehicles) would occur. Construction-related activities could be scheduled to avoid local impacts during peak travel times.

The Proposed Action would allow continued interments at the cemetery, the rate of interments of Veterans in the new area of the cemetery would increase from current conditions. The increased interments and related increased in traffic are not expected to be significant. The Proposed Action would construct an additional roadway and parking area(s), thereby accommodating additional parking for cemetery visitors.

Short-term adverse transportation impacts could be minimized through construction scheduling. This minimization opportunity is described in Section 5.0.

3.13.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to transportation and parking would result.

3.14 UTILITIES

3.14.1 Existing Environment

The proposed project area is an undeveloped area with no current utilities.

3.14.2 Environmental Consequences

3.14.2.1 Proposed Action

The Proposed Action includes the construction of a public restroom area that will require connection to the existing city water and sewer systems. Connection to city electric and information technology service will also be necessary. Design details and a conceptual site plan is not currently available.

Utility usage would be insignificant compared to regional utility usage and would not have adverse impacts on utility suppliers.

3.14.2.2 No Action

Under No Action, cemetery expansion would not occur and no impacts to utilities would result.

3.15 CUMULATIVE IMPACTS

The CEQ regulations for implementing NEPA define cumulative effects as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). This EA considers past, present, and reasonable foreseeable short-term and long-term future effects from implementing the Proposed Action and other projects that coincide with the location and timetable of the Proposed Action.

There are no known projects and activities in the vicinity of the Proposed Action other than the passive recreational use of the cemetery grounds by the public. The surrounding area is fully built residential and institutional land use that is not changing.

Cumulative impacts to the loss of wildlife habitat and migratory bird stopover sites will occur, slowly, over the course of the next 100 years of phased development of the property. However, the Proposed Action, if designed to retain the old growth trees and other natural features of the site, could have a long term, positive, cumulative impact to habitat by preserving the passive greenspace characteristics of the cemetery property. If the VA does not purchase the land, it will remain for sale and eventually be purchased by another entity for another type of development.

3.16 POTENTIAL FOR GENERATING SUBSTANTIAL CONTROVERSY

NCA has solicited input from various federal, state and local government agencies regarding the Proposed Action. None of these agencies expressed opposition to the Proposed Action. These agencies will also now have an opportunity to comment on this Draft EA, with their input incorporated into the Final EA.

NCA did not engage in public involvement with adjacent property owners during the scoping phase of this project. The draft EA will be made available for public comment and a public meeting will be held if necessary.

The early coordination response from the IDEM stated that there have been previous developments considered in the proposed project area, including a private residential development, which generated public outcry from the surrounding neighborhoods. It is likely that the controversy generated was because of the proposed non-cemetery use.

Because the Proposed Action is a cemetery use within the Crown Hill Cemetery property boundary, it is unlikely to generate substantial controversy. Because the proposal is specifically for the benefit of Veterans and their families, the Proposed Action is expected to generate substantial support from the surrounding community.

4.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

4.1 AGENCY AND TRIBAL COORDINATION

During development and review of the EA for expansion of the Crown Hill National Cemetery, NCA contacted federal, state, and local agencies with oversight responsibilities related to this project. Table 4-1 lists the coordination and consultation activities conducted to date in support of this EA.

Table 4-1. Agency and Tribal Coordination for Expansion and Improvements at Crown Hill Cemetery.

Entity	Coordination and Input
Field Supervisor US Fish and Wildlife Service Bloomington Field Office 620 South Walker Street Bloomington, IN 47403-2121	Early coordination between the VA and FWS has been completed. The FWS response, dated December 27, 2013, stated that providing no tree removal takes place between April 1–September 30 the proposed action is not likely to adversely affect the Indiana bat or Northern long-eared bat. Further coordination with USFWS under Section 7 of the Endangered Species Act is unnecessary unless new occurrences of federally protected species are found on site or if the scope of the proposed project changes significantly.
State Conservationist Natural Resources Conservation Service 6013 Lakeside Boulevard Indianapolis, IN 46278	VA and NRCS jointly completed a Farmland Conversion Impact Rating Form (Form CPA-106) that assigned a relative value and site assessment score of 0. The response letter from the NRCS, dated December 19, 2013, confirmed that the proposed project will not result in a conversion of prime farmland.

Entity	Coordination and Input
<p>Section Head Environmental Geology Section Indiana Geological Survey 611 North Walnut Grove Bloomington, IN 47405</p>	<p>Early coordination with IGS has been completed. The IGS response, dated December 18, 2013, stated that there are no known unusual or problematic geographic, geological, geophysical, or topographic in the project area. There are no mineral resources identified in the area and no active or abandoned mineral resources extraction sites within or near the proposed project area.</p>
<p>Manager Aviation Section INDOT 100 North Senate Ave. Room N955-L, IGC North Indianapolis, IN 46204</p>	<p>An early coordination request package was sent on December 13, 2013. No response from INDOT – Aviation Section was received.</p>
<p>Regional Environmental Coordinator Midwest Regional Office National Park Service 601 Riverfront Drive Omaha, NE 68102</p>	<p>An early coordination request package was sent on December 13, 2013. No response from the National Park Service was received.</p>
<p>Federal Highway Administration Federal Office Building Room 254 575 North Pennsylvania Street Indianapolis, IN 46204</p>	<p>An early coordination request package was sent on December 13, 2013. No response from Federal Highway Administration (FHWA) was received.</p>
<p>Field Environmental Officer Chicago Regional Office US Depart. of HUD Metcalf Federal Building 77 W. Jackson Blvd. Room 2401 Chicago, IL 60604</p>	<p>An early coordination request package was sent on December 13, 2013. No response from Department of Housing and Urban Development (HUD) was received.</p>
<p>Ms. Christie Stanifer, Environmental Coordinator IDNR, Division of Fish & Wildlife 402 West Washington Street Room W264, IGC South Indianapolis, IN 46204</p>	<p>Coordination with IDNR was initiated on December 13, 2013. The IDNR response letter, dated January 14, 2014, stated that no protected plants or animals have been documented in the vicinity of the proposed project area. However, they expressed concern for the significant impact to resident wildlife and migratory birds due to the loss of breeding and stop-over habitat. IDNR provided several recommendations for avoidance, minimization, and mitigation that are detailed in the wildlife section of this document. IDNR has requested to be contacted when more detailed site development plans are available for additional environmental review and comment.</p>

Entity	Coordination and Input
<p>Indiana Department of Environmental Management http://www.in.gov/idem/enviroreview/hwy_earlyenviroreview.html</p>	<p>Coordination with IDEM was initiated on December 13, 2013. The IDEM response, dated December 16, 2013, stated that there had been previous wetland delineations on site that had expired and a new wetland delineation would be necessary. IDEM also indicated that previous development proposals of the property generated public outcry from surrounding neighborhoods. An updated wetland survey was completed June 19, 2015.</p>
<p>Indianapolis Metropolitan Planning Organization City/County Building 200 East Washington Street, Suite 1922 Indianapolis, Indiana 46204</p>	<p>An early coordination request package was sent on December 13, 2013. No response from MPO was received.</p>
<p>Chief, Environmental Resources Department of the Army Louisville District, Corps of Engineers ATTN: CEPMP-P-E P.O. Box 59 Louisville, Kentucky 40201-0059</p>	<p>USACE responded to the early coordination request with a brief phone call in January 2013 to let us know that previous wetland delineations had been prepared for the site (and expired), and a new delineation and coordination would be necessary for the proposed project.</p>
<p>Miami Tribe of Oklahoma The Delaware Nation, Oklahoma</p>	<p>NCA sent a letter report on June 26, 2015, to each federally recognized tribe identified as having current or historical ties to this location, presenting the assessment and finding of No Adverse Effect to historic properties, and inviting tribal input and feedback to the assessment and the NEPA process.</p>

Entity	Coordination and Input
<p>Mitch Zoll, Director Indiana Department of Natural Resources Division of Historic Preservation and Archaeology 402 W. Washington St., Room W274 Indianapolis, Indiana 46204</p>	<p>A letter report pursuant to consultation required by Section 106 of the National Historic Preservation Act was sent on June 26, 2015, presenting the assessment and findings and requesting SHPO concurrence with a conclusion of No Adverse Effect to historic properties as well as consulting party invitation.</p>
<p>Chris Myers, Preservation Planner Indianapolis Historic Preservation Commission 1801 City-County Building 200 East Washington Street Indianapolis, Indiana 46204</p>	
<p>Chad Lethig Indiana Landmarks - Central Regional Office 1201 Central Avenue Indianapolis, Indiana 46202</p>	
<p>David G. Vanderstel Marion County Historian 4415 Broadway Street Indianapolis, Indiana 46205-1847</p>	
<p>Carol A. Hall, President Marion County Historical Society P.O. Box 2223 Indianapolis, Indiana 46206</p>	
<p>Indianapolis Metropolitan Planning Organization Anna Gremling, Executive Director Suite 1922, City-County Building 200 East Washington Street Indianapolis, Indiana 46204-3310</p>	
<p>Crown Hill Heritage Foundation 700 West 38th Street Indianapolis, Indiana 46208</p>	

4.2 PUBLIC INVOLVEMENT

As stated in the 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

publications of notices or public meetings. To date, the VA has indicated that the public involvement process will consist of the publication of a Notice of Availability (NOA) of the Draft EA. The process will continue with a public comment period on the Draft EA and consideration of public comments in the Final EA.

4.2.1 Public Review of Draft Environmental Assessment

The VA's NEPA guidance states that the EA process must include at least a 30-day public comment period on the Draft EA, which starts with the publication of an NOA. The NOA for this EA was published in the Indianapolis Star Newspaper for ten consecutive days beginning July 22, 2015 and ending August 1, 2015. No public comments were received.

5.0 BEST MANAGEMENT PRACTICES AND MONITORING

The BMPs, impact minimization techniques, and monitoring opportunities to maintain the impacts of the Proposed Action at acceptable levels are described below.

5.1 AESTHETICS

Short-term impacts could be minimized through implementation of the following:

- Conduct construction activities with a sensitivity toward maintaining the dignity and solemnity of the cemetery environment.
- Conduct construction activities during regular working hours, Monday–Friday, 8:00 a.m.–5:00 p.m.

5.2 AIR QUALITY

Short-term air quality impacts could be minimized through implementation of the following:

- Use appropriate dust control methods during construction activities. Dust control methods include water sprays, chemical soil additives, and wheel washers.
- Suspend construction activities during periods of high winds.
- Reduce vehicle speeds to reduce dust generated by vehicles and equipment on unpaved surfaces.
- Quickly re-vegetate exposed soils following completion of construction activities.

5.3 GEOLOGY AND SOILS

Short-term erosion and sedimentation impacts could be minimized through implementation of the following:

- Design, install, and maintain erosion and sediment controls during the duration of construction activities and any subsequent soil disturbance activities near site drainages. Such controls may include silt fences, runoff control berms, erosion control fabric, and rip-rap.
- Minimize the amount of exposed soils at any given time during construction activities. Quickly re-vegetate disturbed areas following completion of activities.

- Minimize the disturbance of steep slopes.
- Provide an undisturbed natural buffer between the activity area and surface drainages, and direct stormwater runoff to vegetated areas.
- Develop a Stormwater Pollution Prevention Plan, consistent with the requirements of the NPDES general permit.
- Implement spill and leak prevention and response procedures.

5.4 HYDROLOGY AND WATER QUALITY

Short-term erosion and sedimentation impacts on hydrology and water quality could be minimized through implementation of the best management practices listed above for Geology and Soils. Additional impacts could be minimized through implementation of the following:

- Utilize native vegetation and drought-resistant vegetation for area landscaping to reduce irrigation requirements.
- Route stormwater runoff from impervious surfaces to stormwater retention and drainage areas.
- Implement spill and leak prevention and response procedures, including maintaining a complete spill kit at the project area to reduce the impacts of incidental releases of vehicle fluids.
- Continue responsible use of pesticides and road deicing chemicals, keeping usage to the lowest quantities possible, thereby reducing the potential for water quality impacts.

5.5 WILDLIFE AND HABITAT

Potential impacts could be avoided, minimized, and mitigated by:

- Avoidance
 - Tree removals will not occur between April 1 and September 30 (USFWS).
 - Avoid implicating as much of the forested areas of the parcel as possible. There is mention of leaving some forested area undisturbed, but no specific details were provided. Investigate any non-forested areas within the parcel that can be developed in place of strictly clear cutting and removal of existing forested habitat.
- Minimization
 - Consider scaling down the project to avoid full-scale impacts to the heavily forested parcel. Determine what elements of the project are essential and what elements can be removed in favor of preserving as much of the existing forested habitat as possible. There was no breakdown of how much forested habitat will be removed from the 14.75-acre site for all proposed phases of the project. The project plans should maintain as many healthy overstory trees throughout the site as possible. Doing so will help maintain some semblance of forested area for affected species (e.g. Cooper's hawk).
 - Cemetery operations in the future would include the responsible use of pesticides and road deicing chemicals, keeping usage to the lowest quantities possible.
- Mitigation
 - Consider using native plants for any proposed on-site landscaping and tree planting.

- Consider developing a tree mitigation plan. Impacts to non-wetland forest over one acre should be mitigated at a minimum 2:1 ratio. If less than one acre of non-wetland forest is removed in an urban setting it should be mitigated by planting five trees, at least 2 inches in diameter-at-breast height (dbh), for each tree which is removed that is 10" dbh or greater (5:1 mitigation based on the number of large trees).
- A native riparian forest mitigation plan should use at least five canopy trees and five understory trees or shrubs selected from the Woody Riparian Vegetation list or an approved equal. A native riparian forest mitigation plan for impacts of less than one acre in an urban area may involve fewer numbers of species and sizes of trees, depending on the level of impact. Additionally, a native herbaceous seed mixture should be planted consisting of at least 10 species of grasses, sedges, and wildflowers selected from the IDNR Herbaceous Riparian Vegetation list or an approved equal.

5.6 NOISE

Short-term and long-term noise impacts could be minimized through implementation of the following:

- Schedule construction activities for daylight hours, attempting to minimize impacts to nearby cemetery operations.
- Maintain mufflers and sound shielding on construction equipment and routine maintenance equipment.
- Minimize equipment idling, and shut down construction equipment when not in use.

5.7 WETLANDS

Impacts to wetland areas from construction activities could be minimized through implementation of the following:

- Avoid wetland areas to the extent practicable.
- Consider design elements that incorporate the wetlands into the overall development plan of the cemetery addition.
- Consider design elements that enhance the wetlands as part of the development of the cemetery addition.
- Use Best Management Practices during construction to prevent impacts to wetlands.

5.8 SOLID WASTE AND HAZARDOUS MATERIALS

Impacts involving hazardous materials could be minimized through implementation of the following:

- Continue proper vehicle maintenance and inspection to reduce the potential for incidental releases of vehicle fluids.

5.9 TRANSPORTATION AND PARKING

Short-term transportation impacts during construction activities could be minimized through implementation of the following:

- Schedule construction activities such that traffic increases do not coincide with typical morning and evening periods of increased traffic.
- Route transportation of construction equipment to minimize impacts on neighboring communities.

6.0 LIST OF PREPARERS

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- Ross Nelson, Architectural Historian
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8.0 GLOSSARY

Sources:

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- Glossary of Terms Used in DOE NEPA Documents, http://energy.gov/sites/prod/files/NEPA_Glossary%2008_2011.pdf
- NEPA Glossary, U.S. Fish and Wildlife Service, <http://www.fws.gov/r9esnepa/Intro/Glossary.pdf>

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

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

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

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

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

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

environmental impact assessment process, and acts as a referee when agencies disagree over the adequacy of such assessments.

Criteria pollutant: An air pollutant that is regulated by National Ambient Air Quality Standards. Criteria pollutants include sulfur dioxide, nitrogen dioxide, carbon monoxide, ozone, lead, and two size classes of particulate matter, PM₁₀ and PM_{2.5}. New pollutants may be added to, or removed from, the list of criteria pollutants as more information becomes available.

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

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

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

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

Environmental assessment (EA): A concise public document for which a federal agency is responsible that serves to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact; aid an agency's compliance with NEPA when no environmental impact statement is necessary; or facilitate preparation of an EIS

when one is necessary. Includes brief discussions of the need for the proposal, of alternatives, of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.

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

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

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

Floodplain: The lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year.

Fugitive emissions: Emissions that do not pass through a stack, vent, chimney, or similar opening where they could be captured by a control device. Any air pollutant emitted to the atmosphere other than from a stack. Sources of fugitive emissions include pumps; valves; flanges; seals; area sources such as ponds, lagoons, landfills, and piles of stored material (such as coal); and road construction areas or other areas where earthwork is occurring.

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

Historic property: Any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains

that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

Impacts: see Effects.

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

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

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

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

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

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

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

Runoff: The portion of rainfall, melted snow, or irrigation water that flows across ground surface and is eventually returned to streams. Runoff can pick up pollutants from the air or the land and carry them to streams, lakes, and oceans.

Scope: Consists of the range of actions, alternatives, and impacts to be considered in an environmental analysis. The scope of an individual statement may depend on its relationships to other statements (also see tiering).

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

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

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

Wetlands: Those areas that are inundated by surface water or groundwater with a frequency sufficient to support, and under normal circumstances do, or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas. Jurisdictional wetlands are those wetlands protected by the *Clean Water Act*. They must have a minimum of one positive wetland indicator from each parameter (vegetation, soil, and hydrology). The U.S. Army Corps of Engineers requires a permit to fill or dredge jurisdictional wetlands.