Final

ENVIRONMENTAL ASSESSMENT
FOR
IMPLEMENTATION OF MASTER PLANNING ACTIONS AT
IOWA ARMY AMMUNITION PLANT
MIDDLETOWN, IA

Prepared for:

Iowa Army Ammunition Plant, Middletown, IA

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ENVIRONMENTAL ASSESSMENT FOR IMPLEMENTATION OF MASTER PLANNING ACTIONS AT IOWA ARMY AMMUNITION PLANT, MIDDLETOWN, IA

Approved By:

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Iowa Army Ammunition Plant
Middletown, IA

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ACRONYMS AND ABBREVIATIONS

§	Section
ACHP	Advisory Council on Historic Preservation
ACM	Asbestos-Containing Material
ADP	Area Development Plan
AMC	U.S. Army Materiel Command
AQCR	Air Quality Control Region
AT/FP	Anti-Terrorism/Force Protection
BGEPA	Bald and Golden Eagle Protection Act
BMP	Best Management Practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CWA	Clean Water Act
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FNSI	Finding of No Significant Impact
FY	Fiscal Year
GHG	Greenhouse Gas
HAP	Hazardous Air Pollutant
I-	Interstate
IAAAP	Iowa Army Ammunition Plant
IAC	Iowa Administrative Code
IC	Institutional Control
IDNR	Iowa Department of Natural Resources
LAP	Load, Assemble, and Pack
LBP	Lead-Based Paint
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act of 1966
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OU	Operable Unit
PM_{10}	Particulate Matter less than 10 microns in diameter
$PM_{2.5}$	Particulate Matter less than 2.5 microns in diameter
REC	Record of Environmental Consideration
RONA	Record of Non-Applicability
RPMP	Real Property Master Plan
SIP	State Implementation Plan
SWPPP	Storm Water Pollution Prevention Plan
U.S.	United States (used as adjective only)
U.S.C.	United States Code
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service

SECTION 1.0 INTRODUCTION

This Environmental Assessment (EA) evaluates the potential environmental and socioeconomic impacts associated with the proposed action of implementing real property master planning actions at Iowa Army Ammunition Plant (IAAAP) in Middletown, IA. Real property master planning is a continuous analytical process that involves evaluating factors affecting the present and future physical development and operation of an installation. The Real Property Master Plan (RPMP) process provides documentation of installation real property visions, development plans, planning standards, and capital investment strategies to enable clear communication between stakeholders; and a framework for installation management review of allocation of limited resources that affect, or are affected by, the use of real property assets. The bulk of installation planning occurs in the form of Area Development Plans (ADPs) at the scale of districts, which are identifiable and connected areas on each installation.

This EA evaluates master planning actions proposed for IAAAP's Industrial Core District over approximately the next 5 years. The EA evaluates one action alternative and a No Action Alternative in detail. The Army has prepared this EA in accordance with requirements of the National Environmental Policy Act (NEPA) (Title 42 of the *United States Code* [U.S.C.] § 4321 *et seq.);* its implementing regulations (Title 40 of the *Code of Federal Regulations* [CFR] Parts 1500–1508); and the Army's regulation implementing NEPA (32 CFR Part 651) and consistent with Department of Defense (DoD) Unified Facilities Criteria (UFC) 2-100-01, *Installation Master Planning*. The Army is the lead agency for the proposed action; there are no cooperating agencies for this EA (per 40 CFR 1501.6).

1.1 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose of the proposed action is to manage IAAAP's real property assets in a thoughtful, deliberative, and sustainable manner consistent with DoD Instruction 4165.70, *Real Property Management*, and UFC 2-100-01 requirements and guidance. The proposed action is needed to address IAAAP's real property deficiencies, shortcomings, and suboptimal conditions and provide safe, flexible, and efficient facilities to meet current and future installation mission requirements efficiently and cost effectively.

1.2 INSTALLATION DESCRIPTION AND CURRENT SITUATION

IAAAP is a government-owned, contractor-operated production facility under the command of the U.S. Army Materiel Command (AMC) and the Joint Munitions Command, a Major Subordinate Command to AMC. American Ordnance, LLC is the operating contractor. IAAAP is the primary organic Load, Assemble, and Pack (LAP) facility for large- and medium-caliber ammunition in the National Technology and Industrial Base. IAAAP's core production capabilities are LAP for a full range of munitions, tank ammunition, high-explosive artillery, large-caliber mortars, insensitive munitions, pressed and cast warheads, missile assembly, rocket-assisted projectiles, and detonators.

Real property master planning for IAAAP, conducted consistent with UFC 2-100-01, currently consists of an installation-wide Vision Plan (June 2017) (AMC 2017) and an ADP for the Industrial Core District (September 2019) (AMC 2019). The ADP identifies deficiencies, shortcomings, and suboptimal conditions for facility size, capacity, quality, and configurations. Currently, IAAAP is implementing or conducting follow-on planning for implementing the prioritized short-term (Fiscal Year [FY] 20–FY26) development projects in the Industrial Core

District ADP listed under Phase 1. Projects to be implemented in the Industrial Core District are the focus of this EA.

IAAAP encompasses about 19,000 acres (about 30 square miles) in southeastern Iowa in Des Moines County (Figure 1-1). IAAAP's main entry gate is in Middletown, IA, which is along the installation's northern boundary about 5 miles west of Burlington, IA (Figure 1-2). The Mississippi River lies along the east side of Burlington. U.S. Highway 34 borders IAAAP to the north, providing access to Des Moines (Iowa's capital, about 160 miles west of Middletown) and points west and crossing the Mississippi River at Burlington to provide access to points east. The installation is easily accessible from the Mississippi River, Burlington Municipal Airport, and the Burlington Northern Santa Fe Railroad.

1.3 SCOPE OF ENVIRONMENTAL ANALYSIS

This EA identifies, documents, and evaluates the potential environmental, cultural, and socioeconomic effects of implementing the Industrial Core District ADP short-term actions over a 6-year period (Phase 1). The Phase 1 real property planning needs are combined with the long-term perspective of the 10-year planning horizon. The EA includes an evaluation of the short- and long-term direct, indirect, and cumulative effects of implementing these actions and informs decision makers and the public of the potential environmental consequences along with associated mitigation. Enough details are not available to fully analyze the effects of mid- and long-term projects (i.e., beyond the 5-year planning horizon), but the EA includes an analysis of those projects as cumulative effects to provide context for the real property planning vision and capacity for future development. IAAAP will conduct additional NEPA analysis (either a Record of Environmental Consideration (REC), EA, or Environmental Impact Statement [EIS]) for those actions at the appropriate time. Those analyses may be tiered from this EA in accordance with 40 CFR 1502.20 and 32 CFR 651.14(c).

Resource areas evaluated in the EA include land use and recreation, aesthetics and visual resources, air quality, noise, geology and soils, water resources, biological resources, cultural resources, socioeconomics and environmental justice, transportation and traffic, utilities and service systems, and hazardous materials and waste.

1.4 DECISION TO BE MADE

The decision to be made by the Commanding Officer of IAAAP is to approve or disapprove the proposed action based on the analysis in the EA. This EA assists with that decision-making process by providing enough evidence and analysis for determining whether a Finding of No Significant Impact (FNSI) or an EIS should be prepared. If the potential adverse environmental impacts associated with the selected alternative would potentially remain significant after all reasonable mitigation measures have been implemented, an EIS would be warranted. If the Army moves forward with that decision, the start of the EIS process would be marked with the formal publishing of a Notice of Intent (NOI) to prepare an EIS in the *Federal Register*.

1.5 REGULATORY FRAMEWORK

In accordance with 32 CFR 651.14(2), the Army considered applicable federal, state, and local laws and regulations during analysis of the proposed action's effects on individual environmental and social resources, including those listed below.

- Archaeological Resources Protection Act (16 U.S.C. § 470aa *et seq*.)
- Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. §§ 668-668d)

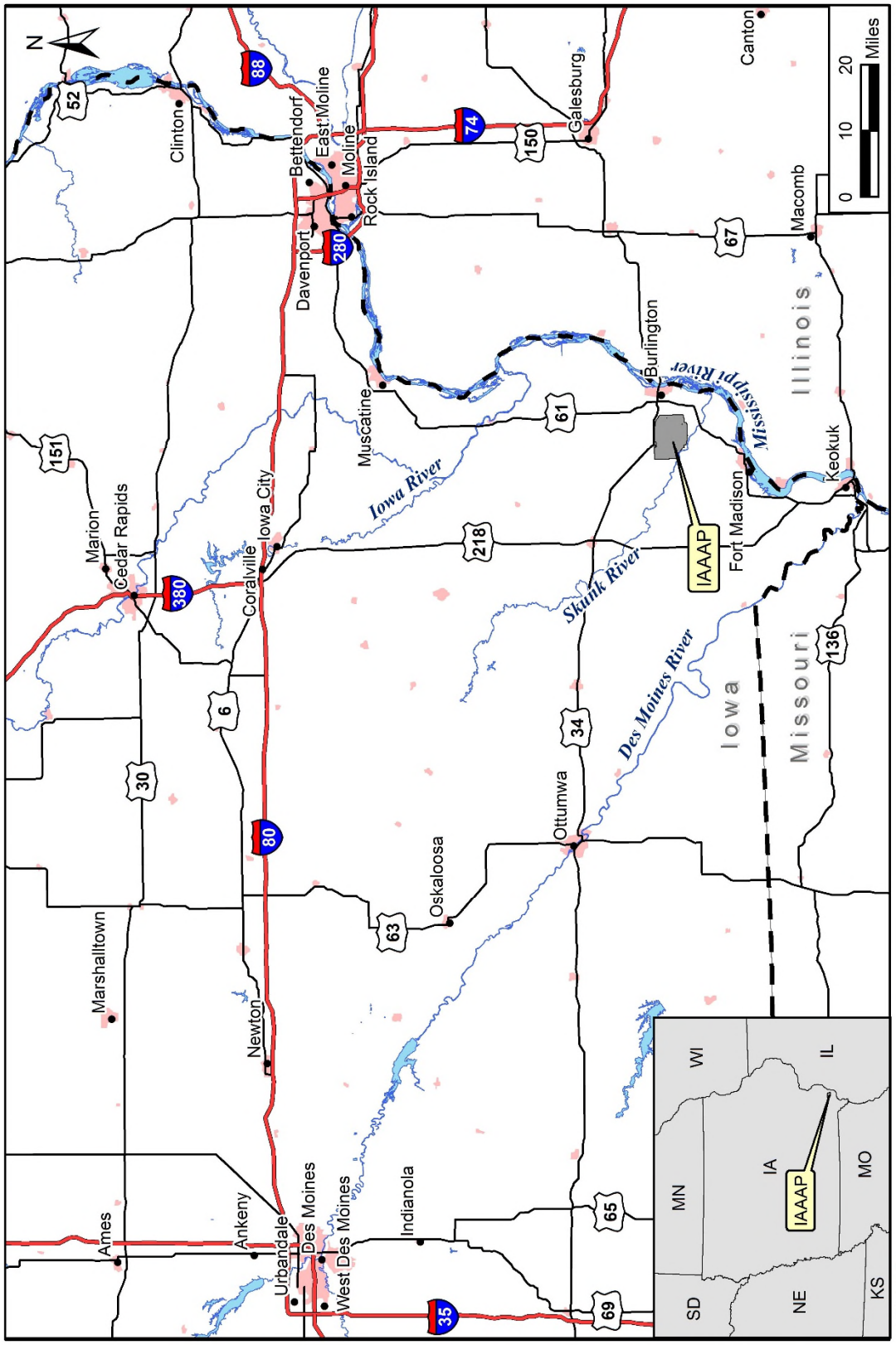

Installation Location
N
0 10 20 Miles
Clinton
Bettendorf
East Moline
Moline
Rock Island
Davenport
Galesburg
Canton
Macomb
Burlington
Muscatine
Iowa City
Coralville
Marion
Cedar Rapids
Fort Madison
Keokuk
IAAAP
Iowa River
Skunk River
Des Moines River
Mississippi River
Illinois
Iowa
Missouri
Ottumwa
Oskaloosa
Marshalltown
Newton
Ames
Ankeny
Urbandale
Des Moines
West Des Moines
Indianola
LEGEND
State Boundary
Interstate Highway
U.S. Route
Surface Water
Urban Area

Figure 1-1

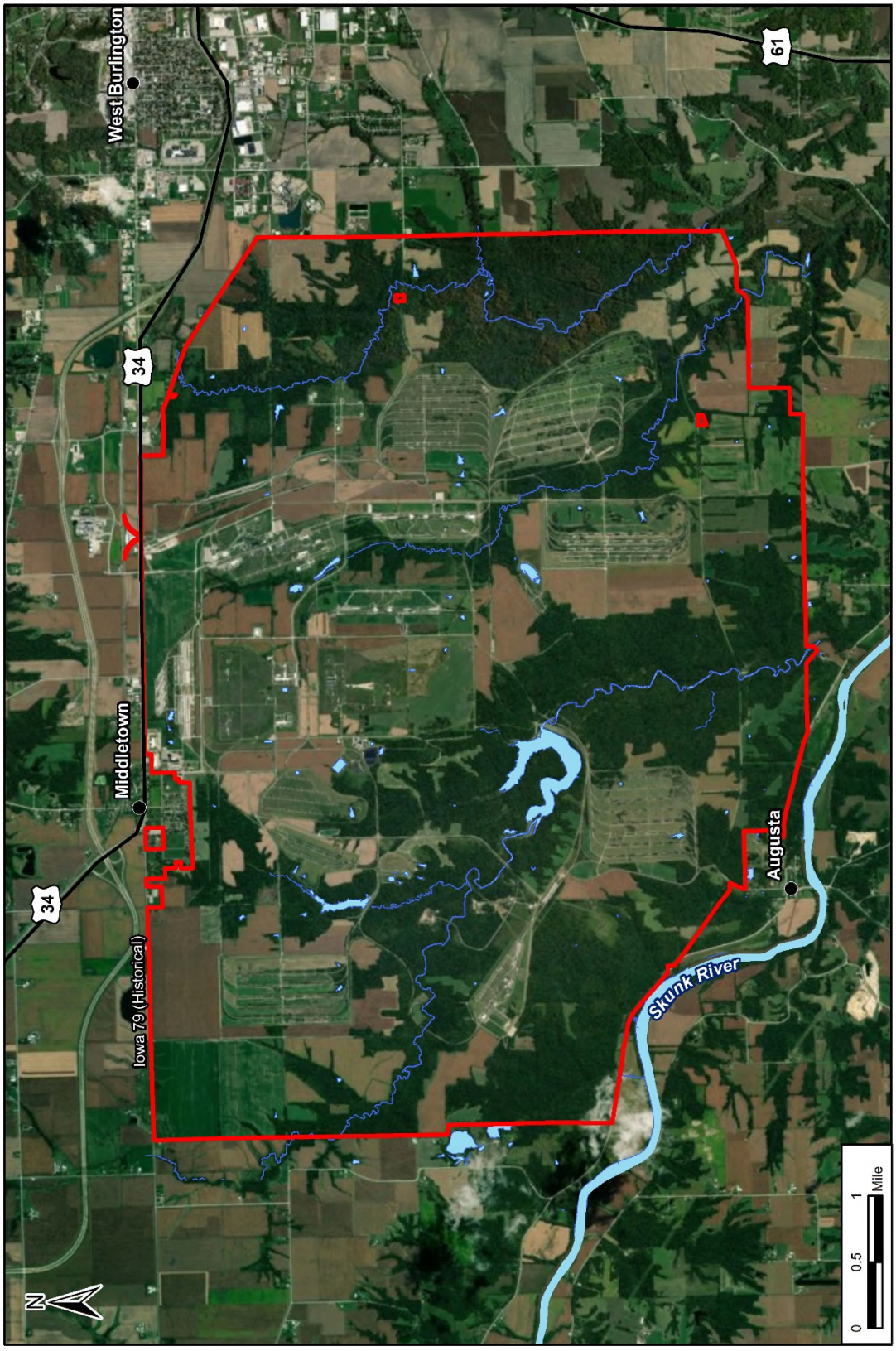

Installation Boundary
West Burlington
Middletown
Augusta
Skunk River
Iowa 79 (Historical)
34
34
61
N
0
0.5
1
Mile
LEGEND
IAAAP Boundary
Stream
Surface Water
U.S. Route

Figure 1-2

- Clean Air Act (CAA) (42 U.S.C. § 7401)
- Clean Water Act (CWA) (33 U.S.C. § 1251)
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. § 9601 *et seq*.)
- Endangered Species Act (ESA) (16 U.S.C. §§ 1531–1543)
- Migratory Bird Treaty Act (MBTA) (16 U.S.C. §§ 703–712)
- National Historic Preservation Act of 1966 (NHPA) (16 U.S.C. § 470 *et seq*., as amended)
- Native American Graves Protection and Repatriation Act (25 U.S.C. § 3001 *et seq*.)
- NEPA
- Resource Conservation and Recovery Act (42 U.S.C. § 6901)
- Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500–1508)
- National Pollutant Discharge Elimination System (NPDES) regulations (40 CFR Part 122)
- Executive Order (EO) 11988, *Floodplain Management*
- EO 11990, *Protection of Wetlands*
- EO 12088, *Federal Compliance with Pollution Control Standards*
- EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*
- EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*
- EO 13175, *Consultation and Coordination with Indian Tribal Governments*
- EO 13834, *Efficient Federal Operations*

1.6 PUBLIC AND AGENCY INVOLVEMENT

The Army invites and strongly encourages public participation in the NEPA process. Consideration of the views of and information from all interested parties promotes open communication and enables better decision-making. The Army specifically urges all agencies, organizations, and members of the public with a potential interest in the proposed action, including minority, low-income, disadvantaged, and Native American groups, to participate in the decision-making process.

Regulations in 32 CFR Part 651 guide opportunities for public participation with respect to this EA and decision-making on the proposed action. This EA and a draft FNSI are available to the public for 30 days. The Army published a notice of availability of the documents in *The Hawk Eye* newspaper. Interested parties can review the documents by accessing them on the internet at www.amc.army.mil/Resources/Environmental. Comments submitted within the 30-day public review period will be made part of the administrative record and will be fully considered before a final decision is made to either execute a final FNSI and proceed with implementing the proposed action or publish an NOI to prepare an EIS.

SECTION 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 PROPOSED ACTION

Within approximately the next 6 years, the Army proposes to implement various real property master planning actions at IAAAP. These include implementation of installation-wide framework elements of and standards for future real property actions as well as planned implementation of specific actions/projects as identified in the installation's Industrial Core District ADP. The ADP considers the long-term mission requirements and fiscal constraints and identifies projects for execution over the next 10 years. The proposed action focuses on the implementation of the short-term requirements identified in the ADP, which consist of construction, demolition, renovation, repair, and infrastructure improvement projects. Because these projects are anticipated to be implemented in the near-term, they have been planned and/or designed to a level at which enough information is available to analyze them in detail for potential environmental and socioeconomic impacts. The remainder of this section describes the alternatives analysis process and alternatives evaluated in detail in this EA.

2.2 ALIGNMENT OF MASTER PLANNING AND NEPA ALTERNATIVES ANALYSIS

This section discusses the process for developing alternatives, screening criteria, alternatives evaluated, and alternatives eliminated from further analysis. NEPA's implementing regulations require that all reasonable alternatives be rigorously explored and objectively evaluated. In addition, alternatives eliminated from detailed analysis must be identified and reasons provided for eliminating them. Developing alternatives also is a critical component of the master planning process. UFC 2-100-01 and 32 CFR Part 651 both include guidance for incorporating the alternatives development process from the master planning process into the NEPA process.

Aligning the master planning and NEPA processes for developing alternatives is a means of both streamlining the planning process and exploring and evaluating alternatives in a comprehensive and multidisciplinary manner. Under the master planning process, the development of alternatives occurs at the district level, where the ADP process involves creating multiple options that allow planners, stakeholders, and installation leadership to ensure that the ADP best fulfills the development vision. In carryover to the NEPA process, this scale and planning horizon fosters a broader level of analysis of environmental considerations and avoids inefficiencies of case-by-case and overly narrowly focused analyses for individual master plan projects.

In the ADP planning process, alternatives are defined as options for long-term development of the district, including arrangement of functional areas, circulation, and utility systems. Each alternative is informed by the district vision, goals, and objectives established in the ADP process. As integrated into NEPA, this element of the alternatives evaluation process forms the foundation for the criteria to define a reasonable range of alternatives. The multidisciplinary, collaborative, stakeholder-driven ADP planning process screens the alternatives for the core planning elements listed in Table 2-1.

The Preferred Alternative that emerged from the Industrial Core District ADP planning process incorporates future program requirements known at the time. Although the Preferred Alternative evolves within the context of the RPMP Regulating Plan and Illustrative Plan as the implementation progresses, it is principally from the Industrial Core District ADP.

Table 2-1. Screening Criteria

Criterion	Condition
Mission Compatibility	The alternative must appropriately address expansion, reduction, and changes in mission.
Short- and Long-Term Real Property Needs	The alternative must provide a path forward for a 10-year planning horizon while also anticipating and responding to current and short-term requirements.
Cost Efficiency / Financial Stewardship	The alternative must be practical and feasible from both technical and economic standpoints and identify opportunities for reduced life-cycle costs of real estate assets and reduction in energy and water consumption, air emissions, and waste generation.

2.3 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED EVALUATION

The Industrial Core District ADP process developed three alternatives or courses of action for future development of the district to meet the vision, goals, and objectives. These alternatives are summarized as follows:

- **ADP Alternative 1:** Under this alternative, IAAAP would do its best to meet the current and future needs of the Industrial Core District under the strictest of financial constraints by optimizing current facility use and space and carefully considering the priority of future projects before securing federal funds. Alternative 1 focused on retaining, repairing, and repurposing existing facilities.
- **ADP Alternative 2:** Alternative 2 focused on optimizing the primary LAP mission for medium- and large-caliber ammunition in support of worldwide operations. This alternative encouraged a holistic view of installation processes and the projects that would encourage expediency in accomplishing the mission.
- **ADP Alternative 3:** Alternative 3 focused on maximizing future growth potential by meeting all current needs of the Industrial Core District while providing additional flexibility to accommodate additional missions or elevated levels of production. Alternative 3 was like Alternative 2 as far as new construction was concerned, but centralization and consolidation were not key factors.

During the ADP process, these alternatives were analyzed and screened based on the criteria presented in section 2.2. Areas of weakness in the ADP alternatives were identified and the best ideas and common themes of each of the alternatives were combined and refined into a Preferred Alternative. Therefore, consistent with the guidance identified in UFC 2-100-01 sections 3-6.1.3 and 3-6.1.4 and 32 CFR 651.14(a)(3), through the aligned and streamlined ADP and NEPA alternatives development process, there is no viable alternative supportive of the purpose and need for the proposed action beyond the Preferred Alternative.

2.4 ALTERNATIVES CARRIED FORWARD FOR DETAILED ANALYSIS

2.4.1 Preferred Alternative

Under the Preferred Alternative, IAAAP would implement a comprehensive approach to development in the district using planning strategies that reinforce capabilities to support IAAAP's mission, promote quality of life, and enhance sustainability and environmental viability on the installation. Table 2-2 summarizes the content of the Vision Plan and Army Planning

Standards and the context they provide for evaluating ADP projects. These RPMP components do not contain specific projects or actions that are analyzed in this EA, but as framework planning elements for development of the ADP, they provide a basis for analyzing the short-term ADP projects in this EA and will be useful to the installation for any follow-on, site-specific tiered NEPA analyses for long-term future projects.

Table 2-2. Framework RPMP Components

RPMP component	Description	Evaluation context
Vision Plan	• Installation-wide planning vision, planning goals, and planning objectives • Installation-wide constraints and opportunities map or maps • Developable area map (capacity analysis) • A framework plan (i.e., districts and networks)	Establishes a framework and context for future real property actions/projects.
Army Planning Standards	• Army standards for buildings, streets, and landscapes that address sustainability and energy efficiency requirements, promote visual order and architectural consistency; enhance the natural and man-made environment; and improve the functional aspects of installations	Establishes standards for future real property actions.

Consistent with the framework planning summarized in Table 2-2, the Industrial Core District ADP established the following real property planning vision:

> Iowa Army Ammunition Plant will be the center of excellence for medium- and large-caliber munitions design and production for the Warfighter by developing **efficient and flexible facilities and infrastructure** capable of **adapting and scaling** to changing market demand in both peacetime and wartime. IAAAP will develop a **safe, secure, modern,** and **process-driven industrial core** through strategic facility layout and utilizing innovative technologies. IAAAP will strive to cultivate pride in its workforce and community by implementing **user-focused, quality design** and development practices.

The following goals and objectives were established to meet this vision:

GOAL 1: SAFE AND SECURE

Safety and security should be maintained through both formal and informal means.

- Maintain workplace safety through facilities maintenance and modernization and implementing effective policies and procedures. Lighting, visibility, and overall maintenance should be enhanced so personnel feel safe when on-site.
- Identify and eliminate security vulnerabilities to protect against outside threats.
- Implement functional redundancies for utilities to safeguard against unforeseen events and ensure energy security.
- Identify existing facilities that do not comply with crime prevention through environmental design criteria and pursue design interventions to improve safety conditions.
- Eliminate Anti-Terrorism/Force Protection (AT/FP) vulnerabilities.

GOAL 2: ADAPTING AND SCALING

Procedures and facilities should be enhanced or designed to be agile and responsive to changes in mission or production levels, without adversely impacting cost or product quality.

- Plan new or retrofit existing facilities to accommodate significant increases or decreases in work production or new missions.
- Maintain design and planning consistency and ensure new facilities support both the current mission and long-term development vision.
- Monitor industry changes, new technologies, and protocol and actively identify existing facilities capable of adapting to anticipated future requirements.

GOAL 3: EFFICIENT AND FLEXIBLE FACILITIES AND INFRASTRUCTURE

- Providing the opportunity for efficient use of the built environment enables a streamlined process that minimizes unnecessary space and costs. Additionally, facilities and infrastructure should be flexible enough to effectively respond to changes in production.
- Rebuild/renovate current facilities to withstand the 20-year outlook through segmented modernization projects.
- Repair and upgrade aged sewer system infrastructure.
- Design facilities with flexibility to meet changing demand or support new missions.
- Explore new manufacturing layouts to consolidate functions and generate additional capacity.

GOAL 4: MODERN

- Buildings and infrastructure should use modern technology and design. Leadership should ensure processes and procedures employ modern practices.
- Identify strategic, efficiency-driven target areas for equipment modernization.
- Maximize facilities recapitalization through Production-Based Support.
- Conduct a pavement condition study to identify vulnerabilities in pavements.

GOAL 5: PROCESS-DRIVEN INDUSTRIAL CORE

- Future development should support IAAAP's industrial process. Enhanced efficiency and effectiveness in production, storage, and testing operations should drive facility and infrastructure changes.
- Identify locational incompatibilities within existing facility layout. Identify necessary steps to relocate incompatible uses.
- Identify where new technologies or procedures could improve circulation of on-site materiel.

GOAL 6: USER-FOCUSED, QUALITY DESIGN

- Processes, products, facilities, and infrastructure should be designed to preserve and enhance quality, as measured by its value to the user.
- Develop target fiscal years for repair or replacement of facilities in poor condition.
- For current products, evaluate feasibility of and return on investment for complete in-house production.

Table 2-3 lists the Phase 1 projects identified in the Industrial Core District ADP master planning process, which are planned to be implemented in approximately the next 5 years. For each of these projects, planning has matured to a level at which information containing enough detail is

available to take a “hard look” at potential environmental impacts as required by NEPA and its implementing regulations.

Table 2-3. Implementation Actions/Projects Evaluated in Detail for Phase 1 (0–5 years)

Project description	Fiscal year
Install Package Boiler Systems	19
Replace and Resite Water Towers (installation-wide).	19
Construct New Centralized Solid Waste Processing Facility.	19
Repair Deficient Rail Lines (installation-wide).	19
Repair or Replace Failing Bridges (installation-wide).	19
Construct New Sanitary Wastewater Treatment Plant and Demolish Existing.	20
Repair and Reconfigure Open Burning/Open Demolition to Meet Current Requirements.	20
Construct New Tank Line Facility. Vacate and Demolish All Line 2 Facilities.	20
Upgrade (as necessary) Physical Security Measures (installation-wide).	20
Construct New Stinger Warhead Production Facility.	20
Repair Yard E Facilities. Install Eastern Gate for Truck Access.	20
Construct New Melt Pour/Loading, Assembling, and Packing Facility.	21
Develop Inert Storage Space at Each Production Line.	21
Construct New Combined Metrology/Plastics/Inert Materials/Tool and Die Complex.	21
Construct New Logistics Campus (Phase I).	21
Repair Mathes Lake Dam.	21
Construct New Warhead Pressing Facility.	21
Ensure all ACPs Meet AT/FP Standards.	23
Repair and Upgrade Existing Electrical Distribution System.	23
Construct New Operations Support Facility.	24

Note: FY19 projects are in the implementation phase.

Additional projects to be implemented in the mid-term in the Industrial Core District (the 6–10-year time frame and Phase 2 (FY25–FY27) of ADP implementation) are listed in Table 2-4. Figure 2-1 depicts the general areas of the installation where the ADP projects would be implemented. The RPMP Illustrative Plan details the preferred plan for pattern of development in line with the vision, goals, and objectives of the district. In contrast, the Regulating Plan provides details of the primary land uses of the Industrial Core District buildable parcels and promotes implementation flexibility. This information is primarily provided for context for the comprehensive integrated planning processes. As noted in section 1.3, currently enough details are not available to analyze the mid-term actions fully in this EA. IAAAP will conduct additional NEPA analysis for projects at the appropriate time.

2.4.2 No Action Alternative

Under the No Action Alternative, IAAAP would not implement the real property master planning actions, principally as identified in the Industrial Core District ADP Preferred Alternative, within approximately the next 5 years. Without implementing the construction, renovation, demolition, and modernization projects proposed in the ADP, facilities would continue to deteriorate and

Table 2-4. Mid-Term Actions/Projects Evaluated for Phase 2 (6–10 years)

Project description	Fiscal year
Construct New Modern Medium-Caliber Facility.	25
Renovate Line 4a to House Energetics Line.	25
Construct New Logistics Campus (Phase II).	25
Construct New Improved Conventional Munition Facility.	26
Repair Earth-Covered Magazines as Needed.	26
Construct New Laundry Facility.	26
Renovate Prove Out Space.	27

mission effectiveness would be impeded. Continued implementation of ongoing real property master planning actions not compliant with UFC 2-100-01 would be suboptimal and lack comprehensive analysis for long-term sustainable installation development supporting mission requirements. The No Action Alternative would not satisfy the purpose of or need for the proposed action. This alternative is retained for evaluation in the EA to provide a comparative baseline against which to analyze the effects of the proposed action, as required under NEPA implementing regulations (40 CFR 1502.14[d] and 32 CFR 651.34[d]).

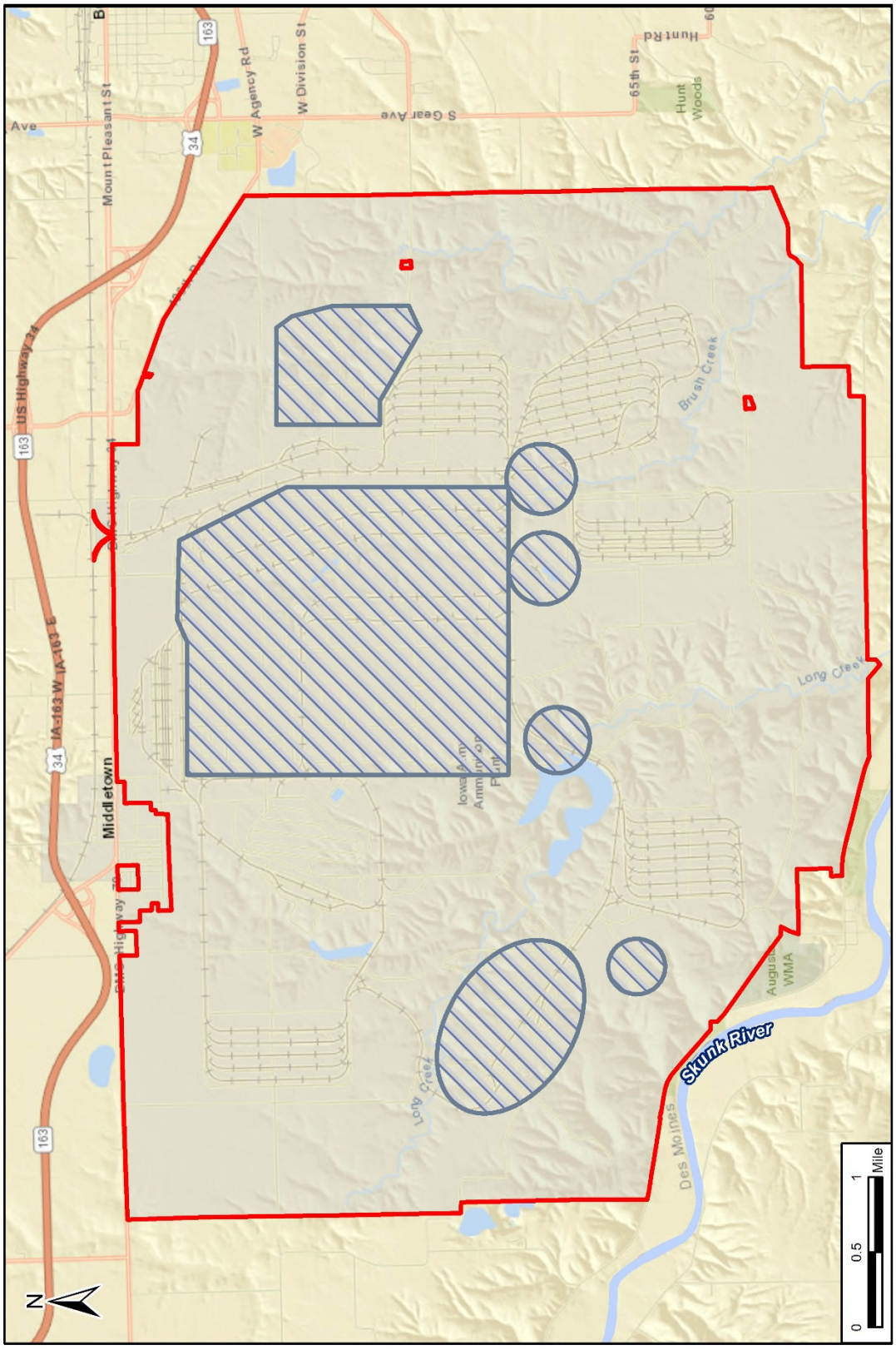

IAAAP Industrial Core District
ADP Project Areas
LEGEND
IAAAP Boundary
ADP Project Areas
Note: Locations are approximate.
N
0
0.5
1
Mile
Middletown
Skunk River
Long Creek
Brush Creek
Des Moines
US Highway 34
IA-163 W
IA-163 E
Mount Pleasant St
W Agency Rd
W Division St
S Gear Ave
65th St
Hunt Rd
Hunt Woods
Augusta WMA
Iowa Army Ammunition Plant
163
34

Figure 2-1

SECTION 3.0 AFFECTED ENVIRONMENT AND CONSEQUENCES

Per CEQ and Army NEPA implementing regulations, the Army may focus their NEPA analysis on resource areas that could be affected by a proposed action and eliminate from detailed study resource areas that would not be significantly affected. IAAAP has reviewed all the resource areas that could potentially be affected by implementing the Preferred Alternative and, consistent with the regulations, has eliminated from detailed study the following resource areas: land use, aesthetics and visual resources, noise, geology and topography, cultural resources, and socioeconomics (including environmental justice and protection of children). Section 3.1 discusses those resources.

IAAAP carried forward air quality and climate change, soils, water resources, biological resources, utilities and infrastructure, transportation, and hazardous materials and waste for detailed analysis, as presented in sections 3.2 through 3.8.

3.1 RESOURCES NOT CARRIED FORWARD FOR DETAILED ANALYSIS

3.1.1 Land Use

A proposed action would be considered to have a significant adverse effect on land use if it would (a) conflict with applicable land-use ordinances and/or permit requirements, (b) result in nonconformance with applicable general plans and land-use plans, or (c) preclude adjacent or nearby properties from being used for existing activities. Implementing the Preferred Alternative would not conflict with land-use ordinances or permit requirements. All projects would conform with the IAAAP Industrial Core District ADP and none of them would conflict with adjacent or nearby land uses.

The proposed development projects involve construction, demolition, renovation, and repair of facilities and utility and infrastructure systems on IAAAP (Table 2-2). The projects would be consistent with the installation's IAAAP Industrial Core District and RPMP Regulating Plan. By applying the master planning process to development of the IAAAP Industrial Core District ADP, the Army selected the proposed project sites in accordance with defined land uses as detailed in the Regulating Plan. Proposed new facilities would be for operations consistent with IAAAP Industrial Core District land use. The proposed construction, demolition, renovation, and repair of existing facilities and utility and infrastructure improvements would not change land use and would have no adverse land-use effects. The Preferred Alternative would not affect land use and would not create land-use incompatibilities; therefore, the land-use resource area was not carried forward for detailed analysis in this EA.

3.1.2 Aesthetics and Visual Resources

A proposed action would be considered to have a significant adverse effect on aesthetics or visual resources if the action would (a) have a substantial adverse impact on a scenic vista or viewshed; (b) substantially damage scenic resources such as primary/secondary ridgelines, trees, rock outcroppings, or historic buildings; (c) substantially degrade the existing visual character or quality of the site and its surroundings; or (d) create a new source of substantial light or glare that would adversely impact day or nighttime views in the area.

IAAAP primarily is surrounded by open agricultural areas, with the city of Burlington to the east and the town of Middletown along the installation's northern boundary. Along the southwest boundary of the installation is the Skunk River. The installation and its surrounding area support

no scenic vistas and are not part of any scenic viewsheds. No primary or secondary ridgelines, trees, rock outcroppings, or historic buildings are within sight of the installation. Implementing the proposed projects would not alter the character of the installation or substantially affect views of the installation from off-site areas. No new sources of substantial light or glare that would adversely impact day or nighttime views in the area would be introduced by implementing the proposed projects.

Construction activities are inherently aesthetically unattractive but short-term activities. Demolition activities generally improve the aesthetics of a site because they remove aging or decrepit structures. Likewise, construction activities that replace an aging structure generally improve aesthetics by putting in its place a new, modern-looking one. Infrastructure projects generally do not affect the aesthetics of an area because an area is returned to its original appearance after the work has been completed. If a new infrastructure element is added, its appearance purposefully blends with the character of the site. Implementing the Preferred Alternative would be expected to have short-term minor adverse and long-term minor beneficial effects on aesthetics and visual resources, so they were not carried forward for detailed analysis in the EA.

3.1.3 Noise

A proposed action would be considered to have a significant adverse effect on the noise environment if it would (a) conflict with applicable federal, state, interstate, or local noise control regulations; or (b) result in continuous and long-term noise levels at 85 decibels and above. The proposed projects would have no significant adverse impacts on the noise environment.

Implementing the Preferred Alternative would have short-term negligible effects on the noise environment. There are no noise-sensitive receptors on IAAAP. Bordering the installation to the north is the town of Middletown, IA, and to the east of the installation is the city of Burlington, IA. Surrounding the industrial areas on IAAAP and buffering views of and noise from the activities on the installation are large land buffers along the installation's boundaries. These buffer areas are leased for agricultural production or are natural areas associated with rivers (see Figure 1-2). None of the proposed projects would be implemented near enough to the installation's boundary to create more than a minor effect on the off-post noise environment.

The proposed projects would require use of heavy equipment that would generate short-term increases in noise near the project sites. All project activities would be within the installation's property boundary and co-located with noise-compatible activities. Although construction-related noise effects would be minor, the following Best Management Practices (BMPs) would be employed to reduce any resulting noise effects:

- Heavy equipment use would primarily occur during normal weekday business hours.
- Heavy equipment mufflers would be properly maintained and in good working order.
- Personnel, particularly equipment operators, would wear adequate personal hearing protection to limit exposure and ensure compliance with federal health and safety regulations.

Implementing the proposed projects would introduce no new permanent sources of noise; therefore, no long-term changes in the noise environment would occur. In the final design stages, all facilities and operational equipment would be designed and constructed to not generate intrusive noise beyond the property boundary. These effects would be negligible; therefore, the noise resource area was not carried forward for detailed analysis in the EA.

3.1.4 Geology and Topography

A proposed action would be considered to have a significant adverse effect on geology or topography if it would result in a change (a) to the geological structure of the area, especially one that could cause a geologic instability, or (b) to the topography over a relatively wide area. The proposed projects would not have a significant adverse effect on geology or topography.

Implementing the Preferred Alternative would not adversely affect the geologic structure of the earth on or near IAAAP or the topography of the installation. No geologic structure below or in the vicinity of the installation would be affected, and the proposed action would not affect the topography of the installation. Therefore, effects on geology and topography resource areas were not carried forward for detailed analysis in the EA.

3.1.5 Cultural Resources

A proposed action would be considered to have a significant adverse effect on cultural resources if it would (a) alter the character or use of an historic property; (b) diminish the integrity of a historic property's location, design, setting, materials, workmanship, feeling, or association; or (c) otherwise cause an unresolvable “adverse impact” under section 106 of the NHPA. The proposed projects would have no effect on cultural resources.

The Advisory Council on Historic Preservation’s (ACHP’s) regulations provide for alternative methods that federal agencies can use to meet their responsibilities under NHPA section 106. One of these alternative methods is issued as ACHP program comments, which are designed to provide the ACHP the flexibility to issue comments on a federal program or class of undertaking instead of on a case-by-case basis.

The ACHP’s Program Comments for World War II and Cold War Era (1939–1974) Ammunition Storage Facilities apply to the IAAAP because the installation’s original purpose was as an ammunition storage facility (Department of the Army n.d.). The 2006 program comments were designed to provide the DoD and its military departments flexibility in managing their vast inventory of World War II and Cold War-era ammunition storage facilities. The ACHP issued similar comments regarding World War II and Cold War-era army ammunition production facilities and plants, which also apply to IAAAP.

The program comments for ammunition storage and production facilities designate certain categories of buildings and structures located on DoD property as eligible for inclusion for listing on the National Register of Historic Places (NRHP). Under these comments, the Army has implemented prescribed measures to mitigate the effects of certain undertakings, including demolition.

No buildings at IAAAP are included on the NRHP (AMC 2017). Because the plant has many World War II buildings, however, the DoD works closely with the ACHP to ensure that cultural resources are preserved as appropriate. The ACHP has determined that none of the individual buildings in any of IAAAP’s production line areas require preservation.

Because of the prescribed measures implemented by the Army and none of the buildings at IAAAP being included on the NRHP, implementing the Preferred Alternative would not be expected to have an adverse impact on cultural resources. The cultural resources area was not carried forward for detailed analysis in the EA.

3.1.6 Socioeconomics (including Environmental Justice and Protection of Children)

A proposed action would be considered to have a significant adverse effect on socioeconomics, environmental justice, or the protection of children if it would cause (a) substantial gains or losses in population or the composition of local or regional populations; (b) extensive relocation or disruption of community businesses and create an economic hardship for surrounding communities; (c) disequilibrium in the housing market such as severe housing shortages or surpluses, resulting in substantial property value changes; or (d) changes in accessibility to or demand for community services in such a way that the current system could not accommodate the change. Implementing the Preferred Alternative would have no significant adverse impact on socioeconomics, environmental justice, or the protection of children.

Implementing the Preferred Alternative would have short-term negligible beneficial effects on the regional economy from construction expenditures for purchasing project materials and supplies, hiring people in construction-related industries, wages earned by those employees, and expenditure of those wages on goods and services. Such economic benefits would be short term because of the temporary nature of construction projects and would be expected to be negligible because the number of jobs created would likely be small compared to the size of the regional labor force. Table 3-1 lists socioeconomic data for Des Moines County, where the study area is located, as well as for the state of Iowa and the nation for comparison. The proposed action would cause no changes in population as no new military or civilian personnel would be stationed at the plant as part of the proposed action. As a result, the socioeconomics resource area was not carried forward for detailed analysis in the EA.

Table 3-1. Socioeconomic Data for IAAAP

	Per capita income (2018)	Labor force (2018)	Population (2018)	Minority population (percent)	Population below poverty level (percent)
Des Moines County	$28,234	19,450	39,138	13%	13%
Iowa	$31,085	1,686,840	3,156,145	15%	11%
United States	$32,621	162,075,000	327,167,434	40%	12%

Source: BLS 2020; U.S. Census Bureau 2020.

EO 12898, issued by President Clinton on 11 February 1994, requires each federal agency to identify and address any disproportionately high and adverse human health or environmental effects that its programs and policies might have on minority or low-income populations.

The threshold used for identifying minority and low-income populations was developed consistent with CEQ guidance (CEQ 1997) for identifying minority population using either the 50 percent threshold or another percentage deemed “meaningfully greater” than the percentage of minority or low-income individuals in the general population. CEQ guidance does not provide a numerical definition of the term “meaningfully greater.” For this analysis, the significance thresholds for environmental justice concerns were established at the state level. For the analysis, a county is determined to contain a disproportionately high percentage of minority or low-income populations if the percentage substantially exceeds the state average (by 20 percentage points or more) or is 50 percent of the population. Des Moines County’s percentage of minority or low-income populations does not substantially exceed the state average (Table 3-1).

EO 13045, issued by President Clinton on 21 April 1997, requires federal agencies, to the extent permitted by law and mission, to identify and assess environmental health and safety risks that might disproportionately affect children. No children reside at IAAAP, although they sometimes visit the installation. The safety of children on IAAAP is ensured by the Army's standard safety measures, including restricting access to construction sites and other unsafe areas and requiring adult supervision.

The proposed action would not be expected to result in disproportionate adverse human health or environmental effects or safety risks on low-income or minority populations, or children. The proposed development includes construction, demolition, renovation, and reparation projects that would be implemented within the IAAAP Industrial Core District. The proposed projects do not have the potential to substantially adversely affect human health or the environment by excluding anyone, denying anyone's benefits, or subjecting anyone to discrimination or disproportionately high and adverse environmental health or safety risks. Therefore, environmental justice and protection of children were not carried forward for detailed analysis in the EA.

3.2 Air Quality and Climate Change

3.2.1 Affected Environment

Air Quality. The U.S. Environmental Protection Agency (EPA) Region 7 and the Iowa Department of Natural Resources (IDNR) regulate air quality in Iowa. As required by the CAA, EPA has established National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50) that specify acceptable concentrations of air pollutants that are harmful to human health and the environment for six criteria pollutants: particulate matter (measured as both Particulate Matter less than 10 microns in diameter [PM_{10}] and Particulate Matter less than 2.5 microns in diameter [$PM_{2.5}$]), sulfur dioxide, carbon monoxide, oxides of nitrogen, ozone, and lead. Areas where pollutant concentrations exceed the NAAQS are designated as *nonattainment areas*, and areas with levels below the NAAQS are designated as *attainment areas*. Des Moines County, IA, is designated as an attainment area for all NAAQS (USEPA 2019a, 2020).

The General Conformity rule (40 CFR Part 93) requires federal actions to conform to a State Implementation Plan (SIP) approved or promulgated under section 110 of the CAA. An air conformity applicability analysis and possibly a formal air conformity determination are required for federal actions in nonattainment areas unless the increase in emissions is below thresholds considered to be *de minimis*, or of minimal importance.

IAAAP holds a Title V Operating Permit (No. 04-TV-019R2, issued July 1, 2015, expires June 30, 2021) that covers emissions of both criteria pollutants and Hazardous Air Pollutants (HAPs). Sources covered under the permit include adhesive application and cleaning processes, surface coating processes, explosives processing, combustion equipment, unpaved roads, and other miscellaneous activities. IAAAP produces no emissions that exceed major source thresholds for any criteria pollutant or HAPs. The installation's Greenhouse Gas (GHG) emissions do not exceed emissions thresholds that would require reporting or installation of control devices. Table 3-2 presents IAAAP's 2019 emissions data.

Climate Change. GHGs are gases that trap heat in the atmosphere, thereby contributing to the greenhouse effect and climate change. Many GHGs occur naturally in the atmosphere, but human activities such as the burning of fossil fuels also release GHGs. The primary GHGs are carbon dioxide, methane, nitrous oxide, and fluorinated gases (USEPA 2019b).

Table 3-2. IAAAP Air Emissions (2018) Compared to *De Minimis* Thresholds

Pollutant	IAAAP 2018 (tpy)	De minimis threshold (tpy)	Exceeds de minimis thresholds? (yes/no)
$PM_{2.5}$	9.87	100	No
PM_{10}	10.04	100	No
Sulfur oxides	188.41	100	Yes*
Nitrogen oxides	71.27	100	No
Volatile organic compounds	13.62	100	No
Carbon monoxide	42.19	100	No
HAPs, including lead	12.83	100	No

* Coal is being replaced with natural gas. This will reduce sulphur oxides – see Table 3-5, *Utility Systems Conditions*.
Note: tpy = tons per year.

To address potential effects of climate change, EO 13834 directs the federal government to enhance the resiliency of its infrastructure and operations. Although EO 13834 does not require a formal planning process for evaluating and managing climate change, federal agencies are directly involved in addressing climate resilience and adapting to its implications across their services, programs, and assets (FedCenter 2019).

This EA evaluates GHG emissions as a category of air emissions and considers the potential climate change effects of the Preferred Alternative. The EA does not, however, attempt to measure the incremental impacts of GHG emissions generated by the Preferred Alternative because criteria to determine significance in accordance with NEPA have not yet been established.

3.2.2 Environmental Consequences

Significance Criteria. Potential impacts of a proposed action on air quality and climate change are considered significant if the action would:

- Produce emissions in exceedance of the General Conformity rule *de minimis* threshold values;
- Contribute to an existing violation of any NAAQS;
- Interfere with or delay timely attainment of NAAQS;
- Expose people to HAPs in large quantities; or
- Result in a substantial increase in the installation's potential to emit GHGs.

Preferred Alternative. Implementing the Preferred Alternative would be expected to have short- and long-term, negligible effects on air quality. Federal regulations designate Air Quality Control Regions (AQCRs) in violation of the NAAQS as nonattainment areas and AQCRs with levels below the NAAQS as attainment areas. IAAAP is within Des Moines County, IA, which is within the Burlington-Keokuk Interstate AQCR (40 CFR 81.98). EPA has designated Des Moines County as in full attainment for all criteria pollutants (USEPA 2019a). The CAA requires that federal agencies do not adopt, approve, or fund activities that are inconsistent with state air quality goals as set forth in an approved SIP. The General Conformity rule provides the framework for meeting that CAA requirement. It was established with NEPA in mind, and it is understood that actions of the size of individual projects proposed in the IAAAP Industrial Core District ADP within an EPA-designated attainment area would have negligible effects on air quality. Because all areas associated with the Preferred Alternative are in attainment, the

General Conformity rule does not apply. The Army has prepared a Record of Non-Applicability (RONA) indicating that the General Conformity rule does not apply to the Preferred Alternative. Appendix A contains the RONA.

Although no new stationary sources of air emissions are proposed to be established, any identified later would fully comply with local, state, and federal permitting requirements. Permitting scenarios would vary based on the final design and the timing of the projects. During the permitting process, either the actual equipment, controls, or operating limitations of new sources of air emissions would be selected to reduce emissions below the major modification threshold, or the permitting process would ensure the NAAQS are not exceeded. This would ensure the projects (both individually and collectively) would not interfere with the ability of the state to maintain air quality in accordance with the NAAQS. This permitting approach is inherent to federal and state air regulations and leads to a forced preservation of clean air in attainment regions. Therefore, regardless of the ultimate permitting scenario, effects would be less than significant.

In addition, Iowa air pollution control regulations and rules outline other permitting and non-permitting requirements such as construction-related emissions and controlling fugitive dust and open burning. Anyone responsible for any operation, process, handling, transportation, or storage facility that could result in fugitive dust would take reasonable precautions to prevent the dust from becoming airborne. Reasonable precautions might include using water to control dust from road grading or land clearing. The projects would proceed in full compliance with current IDNR requirements with compliant practices and/or products. Pertinent state air pollution regulations are discussed below.

- **Construction Permitting.** IDNR issues construction permits for new and modified sources of air pollutants. If master planning projects include any new, reconstructed, or modified air emission units such as boilers or portable motor-driven equipment IDNR air quality construction permitting requirements could be applicable. IAAAP would obtain the necessary permits and, if necessary, modify its Title V operating permit.

- **Asbestos.** Building renovations and demolitions are potentially subject to the asbestos release prevention efforts under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for asbestos (40 CFR 61 subpart M). IDNR administers and enforces the program. The asbestos NESHAP rules apply before renovation or demolition begins and can require a thorough inspection and lab analysis of suspect asbestos-containing material (ACM), IDNR notification, and proper removal and disposal. IAAAP would adhere to program requirements for any work in a facility known to contain ACM or, based on age, potentially containing ACM.

- **Open Burning.** IDNR regulates open burning, which is generally prohibited except for specific exemptions listed in the state open burning rules (567 Iowa Administrative Code [IAC] rule 23.2(455B)). Specific conditions apply to open burning during the clearing and grubbing of landscape waste. If master planning projects were to involve open burning, the installation would comply with the state open burning rules.

- **Fugitive Dust.** IAAAP would take reasonable precautions to prevent fugitive dust from becoming airborne and crossing the installation property line during all master planning projects. IDNR administers fugitive dust regulations (567 IAC 23.3(2)c).

- **Opacity.** IAAAP would adhere to IDNR regulations pertaining to opacity (visible emissions), which do not allow visible emissions in excess of 40 percent opacity unless specifically exempted under rule (567 IAC 23.3(2)d).

No significant adverse effects on air quality would be expected from implementing the Preferred Alternative. Implementing the proposed Industrial Core District ADP projects would not violate any NAAQS or contribute to an existing violation of a NAAQS, expose people to HAPs in large quantities, or substantially increase IAAAP's potential to emit GHGs.

No Action Alternative. No effects on air quality would be expected under the No Action Alternative. IAAAP would not implement the Industrial Core District ADP short-term projects. Air pollutant emissions from existing facilities and operations would continue much as they currently do and there would be no changes to current effects on air quality.

3.3 Soils

3.3.1 Affected Environment

Des Moines County soils are loess-covered glacial till that formed under prairie and forest vegetation. Native tall-grass prairie once occurred on the nearly level and gently sloping soils in uplands. These soils developed in loess. Steeper areas formed in glacial till and had native vegetation of trees. Trees also occurred along the alluvial bottomland associated with the Mississippi and Skunk rivers (IAAAP 2012).

Except for soils associated with rivers and drainages, soils on IAAAP belong to either the Mollisols or Alfisols soil orders. Mollisols are fertile soils and are characterized by a soft surface character and a dark color owed to an abundance of humus. Alfilsols are also fertile soils. Agriculture is a major occupation in Des Moines County with almost 56 percent of the county designated as prime farmland. IAAAP encompasses several areas designated as prime farmland (NRCS 2019). Almost 75 percent of the soil series on the installation meet criteria for prime farmland. The U.S. Department of Agriculture defines prime farmland as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is also available for these uses" (NRCS 2000).

Thirty-three soil series are mapped by the Natural Resources Conservation Service (NRCS) as occurring on the installation (NRCS 2019). Many series are present in only small areas of IAAAP, with large areas of one soil type found only on upland sites between streams. A soil map of IAAAP is available on the internet at the NRCS Web Soil Survey site (NRCS 2019).

IAAAP soils are not rated as being highly erodible. Soils at greatest risk of erosion by water on IAAAP are at earth-covered magazines and on overgrazed leased lands.

3.3.2 Environmental Consequences

Significance Criteria. Potential impacts of a proposed action on soils are considered significant if the action would:

- Result in a change to the character of the resource over a relatively wide area, or
- Create impacts that mitigation measures could not reduce to below the level of significance.

Preferred Alternative. Implementing the Preferred Alternative would be expected to have short-term minor adverse effects on soils. Projects undertaken on developed areas of IAAAP would have no effect on soil character because the soils have been previously disturbed.

Construction activities disturbing 1 or more acres of land or that disturb less than 1 acre of land but are part of a larger development that ultimately disturbs 1 or more acres of land are eligible for coverage under the IDNR NPDES General Permit for Storm Water Discharge Associated with Construction Activities (IDNR 2018). The permittee must develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for each site covered under the permit and is required to design, install, and maintain effective erosion controls and sediment controls to minimize the discharge of pollutants. The plan must describe the site; runoff controls that will be implemented at the construction site; temporary and permanent stabilization practices, including site-specific scheduling of the implementation of the practices; and measures that will be installed during construction to control pollutants in storm water discharges that will occur after construction operations have been completed. Compliance with the provisions and requirements of IDNR General Permit No. 2 would ensure minimal soil disturbance and loss, and effects of implementing the Preferred Alternative on soils would be negligible.

No Action Alternative

No effects would be expected. Under the No Action Alternative, IAAAP would not implement the proposed development projects and there would be no impact on soils.

3.4 Water Resources

3.4.1 Affected Environment

Watershed and Surface Water. IAAAP is completely within the watershed of the Mississippi River, which is about 8 miles east of the installation. Three streams with a total of about 20 miles of drainage are on the IAAAP property (IAAAP 2012). Long Creek drains the western half of the installation and drains to the Skunk River south of IAAAP. Spring Creek drains the eastern edge, and Brush Creek is between the other two in the east-central portion of the installation (Figure 3-1). Brush Creek enters a lowland area called Skunk Slough near where the Skunk River empties into the Mississippi River, and Spring Creek drains directly into the Mississippi River. The three creeks are small, averaging about 16 feet wide and 6 inches deep.

Groundwater. IAAAP obtains drinking water from the town of Burlington, IA (IAAAP 2012). Water quality is fair to good with a moderate-to-high mineral content. The geology of the region makes it a poor source of groundwater. Four major aquifers are in the region—the Mississippian, Devonian, Jordan sandstone, and Cambrian-Ordovician—which lie 250–2,000 feet below ground surface and have yields of from less than 20 to 1,000 gallons per minute. The Jordan sandstone aquifer, which is part of the Cambrian-Ordovician aquifer, is the deepest at 1,850–2,000 feet below ground surface, yields 1,000 gallons per minute, and is the source of water for most industry and cities in southeast Iowa that do not use river or stream water.

Floodplains. Floodplains on IAAAP consist primarily of riparian areas associated with the plant's streams—Long, Brush, and Spring creeks (Figure 3-1).

Wetlands. The U.S. Fish and Wildlife Service (USFWS) conducted a National Wetlands Inventory (NWI) on IAAAP in 1999 (Figure 3-1). That study identified 113.2 acres of wetlands on IAAAP, with forested wetlands being the dominant type and representing about 50 percent of the installation's wetlands, and unconsolidated bottoms (ponds) being the next most common

type at about 24 percent of the installation's wetlands. Wetland acreages as determined in the 1999 inventory are listed in Table 3-3. Additionally, IAAAP has 57.3 miles of linear wetlands (54.2 miles of rivers and streams and 3.1 miles of wetlands).

Table 3-3. Wetland Types on IAAAP by Acreage

Wetland type	IAAAP acreage
Emergent Wetland	14.7 acres
Scrub/Shrub Wetland (Broad-Leaved Deciduous)	10.8 acres
Forested Wetland:	60.2 acres:
Temporarily Flooded	56.5 acres
Seasonally Flooded	3.7 acres
Unconsolidated Bottom	27.5 acres

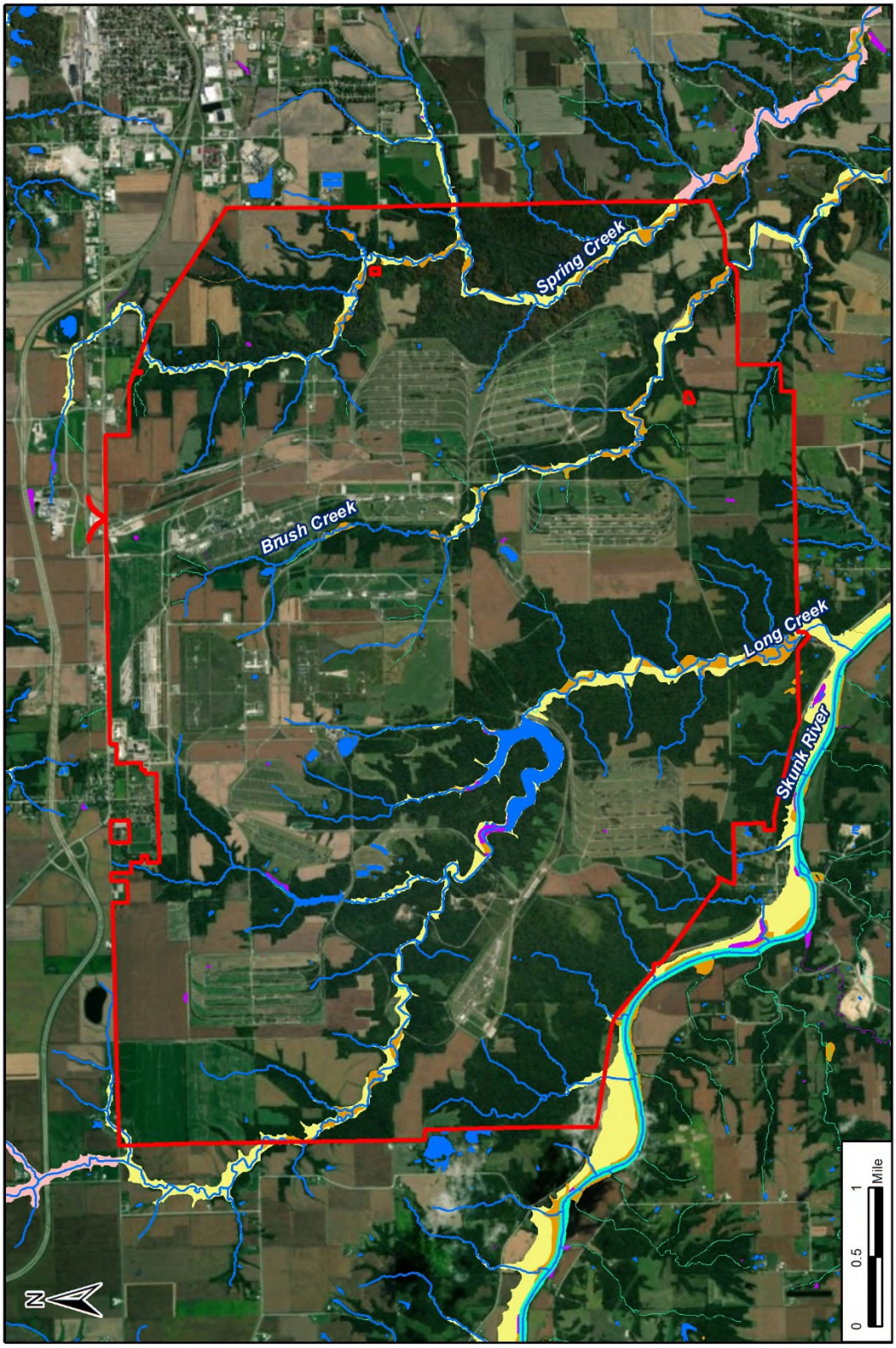
3.4.2 Environmental Consequences

Significance Criteria. Potential impacts of a proposed action on water resources are considered significant if the action would:

- Violate federal or state surface water protection laws. The U.S. Army Corp of Engineers (USACE) has authority for delineating jurisdictional wetlands and evaluating wetland impacts not avoidable under section 404 of the CWA;
- Constitute a substantial risk to aquatic animals and/or humans or pose contamination secondary health risks during the project life;
- Eliminate or sharply curtail existing aquatic life or human uses dependent on in-stream flows or water withdrawals during the project life;
- Place structures within a 100-year flood hazard area that violate federal, state, or local floodplain regulations; or
- Expose people or structures to a substantial risk of loss, injury, or death involving flooding, including flooding because of the failure of a levee or dam.

Preferred Alternative. Implementing the Preferred Alternative would be expected to have short-term minor adverse effects on surface waters and no effects on groundwater, floodplains, or wetlands. Short-term minor adverse impacts on surface waters would be expected from storm water runoff from project areas. Small streams that lead to the larger streams on IAAAP (Long, Brush, and Spring creeks) are located throughout the installation. Some runoff of sediment and minor amounts of contaminants from construction sites would be expected to reach these small streams. IAAAP or its contractors would comply with the provisions and requirements of IDNR General Permit No. 2 for controlling storm water runoff from construction sites (as discussed in section 3.3.2). Additionally, construction equipment would be maintained in good working order and inspected to minimize leaks and spills to prevent petroleum products from entering surface waters and groundwater. Implementing those precautions for each project undertaken would ensure minimal effects on surface waters.

No impacts on groundwater or floodplains would be expected. The Preferred Alternative would not involve use or withdrawal of groundwater, and no structures are proposed to be built in floodplain areas. If any master planning projects are located wholly or partially in a flood zone IAAAP would contact Des Moines County to obtain a floodplain development permit. If required, IAAAP would submit a joint application permit for floodplain development to IDNR and USACE.



IAAAP Wetlands and Flood Zones

Figure 3-1

Source: FEMA 2020; USFWS NWI 2020.

No impacts on wetlands would be expected. As noted, wetlands on IAAAP are primarily associated with streams. One proposed project could occur in a wetland: Repair Mathes Lake dam (scheduled for FY21). Most wetlands on IAAAP have not been formally delineated; wetlands are mapped based on NWI data only. If wetlands are located at the site of the dam repair project and could be impacted by the project, IAAAP would consult with the USACE before conducting any project work to ensure compliance with section 404 of the CWA. If USACE determined that a formal jurisdictional delineation and/or mitigation for impacts on wetlands was necessary, IAAAP would delineate the wetlands and comply fully with any USACE-required mitigation. By taking those measures, IAAAP would reduce impacts on wetlands to less than significant. Overall, effects of implementing the Preferred Alternative on surface waters, groundwater, floodplains, and wetlands would be minor.

No Action Alternative. No effects would be expected. Under the No Action Alternative, IAAAP would not implement the proposed development projects and there would be no impacts on water resources.

3.5 Biological Resources

3.5.1 Affected Environment

Ecoregion. IAAAP is within the Prairie Parkland (Temperate) Province (USFS 2015). Grasses were the dominant native vegetation but because of the favorable climate and soils most tall grass prairie lands were cultivated and little native vegetation remains. The area in and around IAAAP is representative of current prairie conditions. Most of the land is in crops and much of the rest is in forage for livestock.

Flora. Vegetation on land areas where Industrial Core District ADP projects would be implemented is a mixture of deciduous and evergreen forest, crops, pasture, and developed land (MRLC 2016). Forested areas border streams and serve as buffers between developed areas and surface waters. Crop and pasture areas are on the approximately 5,500 acres of agricultural row crop/hay outleases on IAAAP (IAAAP 2012). Mission areas are primarily developed land areas.

Fauna. IAAAP's wildlife species include animals indigenous to the Southern Iowa Drift Plain (IAAAP 2012). Surveys on IAAAP have documented the occurrence of 37 mammal species, 127 bird species, 16 reptile species, 10 amphibian species, 33 fish species, 11 species of mollusks, 20 species of dragonflies, and 15 species of damselflies. Lists of fauna known to occur on IAAAP are available in the Natural Resources office and in the installation's Integrated Natural Resources Management Plan.

Federally Protected Species. The ESA, BGEPA, and MBTA are federal laws that protect species of flora and fauna. USFWS lists under those laws seven federally protected endangered or threatened species as potentially occurring on or near IAAAP and five species of migratory birds as being of concern (Table 3-4) (USFWS 2020).

The Indiana bat (*Myotis sodalis*) is the only federal-listed species known to occur on IAAAP. Two Indiana bats were captured on the installation in the late 1990s and six were captured and confirmed to roost in the day in 2003 (IAAAP 2012). IAAAP has an Endangered Species Management Plan for the Indiana bat.

Table 3-4. Federally Protected Species Potentially Occurring on IAAAP

Common name	Scientific name	Federal status	Protection
Mammals			
Indiana Bat	*Myotis sodalis*	Endangered	ESA
Northern Long-Eared Bat	*Myotis septentrionalis*	Threatened	ESA
Clams			
Higgins Eye (pearlymussel)	*Lampsilis higginsii*	Endangered	ESA
Sheepnose Mussel	*Plethobasus cyphyus*	Endangered	ESA
Spectaclecase	*Cumberlandia monodonta*	Endangered	ESA
Flowering Plants			
Prairie Bush-Clover	*Lespedeza leptostachya*	Threatened	ESA
Western Prairie Fringed Orchid	*Platanthera praeclara*	Threatened	ESA
Migratory birds	**Scientific name**	**Likely presence during breeding season**	**Protection**
Bald Eagle	*Haliaeetus leucocephalus*	December to March	BGEPA, MBTA
Black-Billed Cuckoo	*Coccyzus erythropthalmus*	Late August to early September	MBTA
Kentucky Warbler	*Oporornis formosus*	Mid-May	MBTA
Prothonotary Warbler	*Protonotaria citrea*	May to early June	MBTA
Red-Headed Woodpecker	*Melanerpes erythrocephalus*	Early May, August to September 10	MBTA

Sources: USFWS ECOS 2020; USFWS IPaC 2020.

Migratory bird species occur on the installation as either transients or residents during migration and breeding seasons. Bald eagles (*Haliaeetus leucocephalus*) occur at IAAAP as transients during the migratory period (IAAAP 2012). A bald eagle nest is about 2 miles from IAAAP on the Skunk River but it is not used every year.

Black-billed cuckoos (*Coccyzus erythropthalmus*) occupy dense wooded habitats and are often found in environments with strong associations with water such as young deciduous and mixed deciduous-coniferous woods, the edges of bogs and marshes, rivers and lakeshores, and abandoned farmlands or brushy hillsides and pastures (USFWS ECOS 2020).

Kentucky warblers (*Oporornis formosus*) inhabit moist woodlands (ODNR 2012). They live near the ground in wooded ravines and swamp borders with thick undergrowth.

Prothonotary warblers (*Protonotaria citrea*) breed in flooded bottomland forests, wooded swamps, and forests near lakes and streams (Cornell Lab 2019a). They tend to avoid forest patches smaller than about 250 acres or forest borders less than 100 feet wide.

Red-headed woodpeckers (*Melanerpes erythrocephalus*) breed in deciduous woodlands with oak or beech, groves of dead or dying trees, river bottoms, burned areas, recent clearings, beaver swamps, orchards, parks, farmland, grasslands with scattered trees, forest edges, and roadsides (Cornell Lab 2019b). During the start of the breeding season, they move from forest

interiors to forest edges or disturbed areas. Wherever they breed, dead (or partially dead) trees for nest cavities are an important part of their habitat.

3.5.2 Environmental Consequences

Significance Criteria. Potential impacts of a proposed action on biological resources are considered significant if the action would:

- Cause detectable impacts on native communities, and species would be expected to be outside the natural range of variability for long periods of time or in perpetuity;
- Cause large, short-term declines in species populations or instability in population numbers or structure, genetic variability, or other demographic factors for species;
- Cause a loss of habitat that could affect the viability of at least some native species; or
- Jeopardize the continued existence of a federally listed species within and/or outside installation boundaries.

Preferred Alternative. Implementing the Preferred Alternative would be expected to have short-term negligible adverse effects on biological resources. None of the significance criteria listed above would be violated. Most proposed projects would occur in developed areas of the installation where habitat is of limited biological value and impacts on common and protected species would be negligible. No habitat suitable for federally protected species would be disturbed. The Army or its contractor would develop a SWPPP for each project or group of projects and minimize sediment-laden runoff to protect surface waters. Disturbed areas would be stabilized after the completion of the work. Implementing these precautions during the projects would ensure minimal effects on habitats, vegetation, and terrestrial and aquatic fauna, and effects of implementing the Preferred Alternative on biological resources would be negligible.

No effects on species protected under the BGEPA or ESA would be expected. No effects on bald eagles would be expected because the species is a transient on the installation and does not nest on IAAAP, and other species, if present on the installation, nest and forage in habitats that are not proposed to be disturbed under the Preferred Alternative.

If a project with the potential to disturb a nesting migratory bird was to occur during the nesting season (which varies by species but is generally from May to September), either in a vegetated area or in a structure, IAAAP would protect the nesting bird by conducting a visual survey to determine whether any nesting birds were present or would avoid impacting the species by implementing the project outside of the nesting season for the species. IAAAP would consult with USFWS to determine an appropriate course of action if nesting birds were found. With IAAAP following these precautions, no adverse impacts on migratory birds would be expected.

No Action Alternative. No effects would be expected. Under the No Action Alternative, IAAAP would not implement the proposed development projects and there would be no impacts on biological resources.

3.6 Utilities and Infrastructure

3.6.1 Affected Environment

The current state of individual utility systems on IAAAP is summarized in Table 3-5 (AMC 2017). Many of the utilities at IAAAP have been upgraded in the past 10 years.

Table 3-5. Utility System Conditions

Utility system	Condition/Notes
Domestic Water Lines	Upgraded in the past 10 years
Electrical Lines	Maintenance is needed
Storm Water	Storm water is discharged at nine permitted sites
Plant-wide Steam System	IAAAP plans to replace with several localized package boilers
Natural Gas	Being phased in to replace coal power
Sewerage System	In disrepair

3.6.2 Environmental Consequences

Significance Criteria. Potential impacts of a proposed action on utilities and infrastructure are considered significant if the action would:

- Exceed the capacity of an infrastructure system (e.g., creating an energy, water, or sewer demand in excess of existing supply), or
- Violate a regulatory limit (e.g., a wastewater discharge greater than is allowed by an existing permit).

Preferred Alternative. Implementing the Preferred Alternative would be expected to have short-term minor adverse and long-term minor beneficial effects on utilities and infrastructure. Construction, renovation, demolition, and reparation projects would generate solid waste and create short-term increases in utility system demand. The existing installation utility infrastructure would be expected to be adequate to meet the minor increase in demand created by the projects. Some of the demand for utilities during construction would be expected to be offset by contractors supplying their own equipment, water, and portable toilets. Utility and infrastructure upgrade and replacement projects would improve the respective systems and structures, resulting in long-term beneficial effects.

No Action Alternative. No effects would be expected. Under the No Action Alternative, IAAAP would not implement the proposed development projects and there would be no changes to utilities or infrastructure. Systems that would be replaced, repaired, or upgraded under the Preferred Alternative would continue to deteriorate under the No Action Alternative.

3.7 Transportation

3.7.1 Affected Environment

IAAAP is accessed from U.S. Highway 34, which runs east through Burlington, IA, 13 miles due east of the installation and continues to Interstate (I-) 74 at Galesburg, IL. To the west it leads to I-35 south of Des Moines. The Burlington Northern Santa Fe rail lines that connect to Missouri and Illinois run past the installation. Installation roads provide access to all developed and undeveloped accessible areas on the installation. Traffic on installation roads is typically light, with heaviest use when employees are arriving in the morning and leaving in the afternoon. Local roads outside the installation can handle the daily traffic load. The Iowa Department of Transportation measured annual average daily traffic volume in Des Moines County and on U.S. Highway 34 in 2018 (IDOT 2018).

3.7.2 Environmental Consequences

Significance Criteria. Potential impacts of a proposed action on the transportation system are considered significant if the action would:

- Increase traffic volume on the installation and local roads to a level at which they would be unable to accommodate the additional vehicles;
- Cause a road to not comply with local, state, or federal laws and regulations; or
- Constitute a substantial risk to human health or the environment.

Preferred Alternative. Implementing the Preferred Alternative would be expected to have short-term minor effects on transportation. Construction traffic would be associated with most or all projects proposed in the Industrial Core District ADP, but the additional traffic would not be expected to substantially affect any nearby roadways or degrade the level of service at any intersection on the installation or on surrounding regional roads. The proposed Industrial Core District ADP improvement projects would require use of heavy equipment and would generate worker commutes that would result in short-term increases in traffic both on regional roads and on the installation. The work would take place within the installation's property boundaries, so road closures or detours off-post would not be expected. Construction vehicles would be routed and scheduled to minimize conflicts with on-post traffic, and staging areas would be located to minimize effects on on-post traffic. Standard operating procedures for construction activities (e.g., vehicles equipped with backing alarms, two-way radios, and "Slow-Moving Vehicle" signs when appropriate) would be followed during all projects.

No Action Alternative. No effects would be expected. Under the No Action Alternative, IAAAP would not implement the proposed development projects and there would be no changes to or effects on traffic or the local or regional transportation system.

3.8 Hazardous Materials and Waste

3.8.1 Affected Environment

Handling and managing hazardous materials at IAAAP involves working with chemicals and explosives. All munition items accepted for demilitarization are disassembled to separate out salvageable materials to be recycled. Explosives, propellants, and steel casings are made available for resale to Army-approved buyers. All solvent-, adhesive-, and paint-contaminated wipes are collected for disposal. These practices significantly reduce the amount of material requiring treatment as explosive-contaminated waste (IAAAP 2006).

Historical operations at IAAAP resulted in releases of hazardous substances to soil, surface water, and groundwater. In August 1989, IAAAP was placed on the National Priorities List because of surface water contaminated with explosives flowing beyond the installation boundary. The contamination was the result of past operating practices in which explosives-contaminated wastewaters and sludges were discharged to uncontrolled on-site drainage areas. Other historical sources of contamination include routine open burning of explosives materials and munitions, landfilling of waste material, and destructive testing of components containing depleted uranium, which resulted in radiological contamination (IAAAP 2012, 2020). IAAAP no longer employs any of these practices, but residual contamination remains both on- and off-post.

The primary contaminants of concern include explosives, metals, volatile organic compounds, and depleted uranium. IAAAP organized remedial activities into nine Operable Units (OUs): OU-1 (soils), OU-2 (was merged into OU-1), OU-3 (off-post groundwater), OU-4 (inert disposal

area), OU-5 (Military Munitions Response Program), OU-6 (on-post groundwater), OU-7 (miscellaneous sites), OU-8 (Formerly Utilized Sites Remedial Action Program), and OU-9 (construction debris sites). Remedial actions have been or are being implemented at five of the remaining eight OUs (OU-1, -3, -4, -5, and -8). The Army is conducting a base-wide remedial investigation to better define the extent of the contamination to enable IAAAP to move forward with remediation of OU-6, -7, and -9. The remedial investigation includes extensive on-post groundwater sampling (USEPA 2020).

Risks and pathways addressed by the cleanup include health risks from ingestion or dermal contact with contaminants in soil and groundwater. IAAAP is a fenced, secure facility, which eliminates public exposure to residual contamination on the plant. Residences with off-post drinking water impacted by site contaminants have been connected to alternative drinking water sources to eliminate the risk of exposure. Fencing and signage is in place on IAAAP to identify contamination to workers and visitors. As a result, no known unacceptable exposures to site contaminants are occurring (USEPA 2020).

3.8.2 Environmental Consequences

Significance Criteria. Impacts on hazardous material and waste management would be considered significant if the action resulted in noncompliance with applicable federal and state regulations or increased the amounts of hazardous waste generated or hazardous material procured beyond current IAAAP management procedures and capacities. Impacts on the environmental restoration program would be considered significant if the federal action disturbed (or created) contaminated sites resulting in adverse effects on human health or the environment.

Preferred Alternative. Short-term minor adverse and long-term minor beneficial effects would be expected. No significant adverse impacts would be expected. The Preferred Alternative includes proposed projects that could disturb contaminated soil and expose people to hazardous or toxic materials. IAAAP and its contractors would adhere to all appropriate hazardous materials and waste management practices in conducting all project work. Additionally, IAAAP would implement Institutional Controls (ICs) as necessary to ensure proposed projects would be consistent with site contamination status. ICs are non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and protect the integrity of the selected remedy for a contaminated site. Not all areas on IAAAP have ICs developed yet; IAAAP has ICs for four OUs. ICs are required to be included with the master plan and will be incorporated into the projects included in the RPMP as they are developed (IAAAP 2019).

If any master plan projects affect ongoing CERCLA remediation efforts IAAAP would coordinate with EPA Region 7's Superfund Program to ensure that the remediation efforts and 5-year reviews are not interrupted during construction and demolition activities.

Structures built before 1978 might contain Lead-Based Paint (LBP), structures built before 1982 could have ACM, and structures built before 1977 could contain friable ACM. All older structures would be inspected before any renovation or demolition activities begin. If LBP or friable ACM was found, the materials would be handled and disposed of in accordance with applicable regulations and by following appropriate worker safety practices and LBP and ACM disposal regulations and policies, including:

- National Emission Standard for Asbestos, standard for demolition and renovation (40 CFR 61.145), and

- National Emission Standard for Asbestos, standard for waste disposal for manufacturing, fabricating, demolition, and spraying operations (40 CFR 61.150).

Otherwise, the proposed projects would not result in new regulated sources of hazardous or toxic materials or wastes on IAAAP. The Army and its contractors would handle, store, and dispose of all hazardous materials used in conjunction with implementing the proposed projects in accordance with applicable regulations. Implementation of the Preferred Alternative, therefore, would not result in significant impacts on the generation or management of hazardous or toxic materials or wastes at IAAAP.

Long-term beneficial effects of the proposed projects would be expected from replacing aging systems with new ones with modern environmental control systems and replacing old facilities with new ones that are not constructed with hazardous substances such as ACM and LBP. The potential for spills and exposure to hazardous materials from these facilities would be expected to be reduced.

No Action Alternative. No effects would be expected. Under the No Action Alternative, IAAAP would not implement the proposed development projects and there would be no changes to or effects on hazardous materials and wastes use, storage, transport, or disposal.

3.9 Cumulative Effects

This section discusses the possible cumulative effects on the resource areas of concern. A cumulative impact is:

> …the incremental impact on the environment which 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 (40 CFR 1508.7).

Cumulative effects can result from individually minor but collectively substantial actions taken over time. In accordance with NEPA, cumulative effects that could result from actions proposed or anticipated in the foreseeable future are discussed in the EA.

IAAAP's Industrial Core District ADP includes projects proposed for implementation in the short- and mid-range: Phase 1 projects (FY20–FY24) and Phase 2 projects (FY25–FY27). Table 2-3 lists the Phase 1 projects and Table 2-4 lists the proposed Phase 2 projects. Figures 2-1 and 2-2 show the locations of the proposed projects on the installation. NEPA analysis will be conducted for proposed Phase 2 projects at the appropriate time.

The proposed Phase 1 projects combined with Phase 2 projects and any other projects implemented by others in the region surrounding the installation have the potential to create cumulative effects. Resource areas on which an adverse cumulative effect could occur are those on which the Preferred Alternative could have an adverse effect: aesthetics and visual resources, air quality, noise, soils, surface waters, biological resources, utilities and infrastructure, transportation, and hazardous materials and waste. Table 3-6 summarizes the effects on each resource area that would be expected from implementing the Preferred Alternative.

Table 3-6. Summary of Expected Effects of Implementing the Preferred Alternative

Resource area	Preferred Alternative	No Action Alternative
Land Use	No effect	No effect
Aesthetics and Visual Resources	Short-term minor adverse effect Long-term minor beneficial effect	No effect
Air Quality	Short-term minor adverse effect	No effect
Noise	Short-term minor adverse effect	No effect
Geology and Topography	No effect	No effect
Soils	Short-term minor adverse effect	No effect
Water Resources	Short-term minor adverse effect	No effect
Groundwater	*No effect*	*No effect*
Surface Waters	*Short-term minor adverse effect*	*No effect*
Floodplains	*No effect*	*No effect*
Wetlands	*No effect*	*No effect*
Biological Resources	Short-term negligible adverse effect	No effect
Threatened & Endangered Species	*No effect*	*No effect*
Migratory Birds	*No effect*	*No effect*
Cultural Resources	No effect	No effect
Socioeconomics	Short-term minor beneficial effect	No effect
Environmental Justice	*No effect*	*No effect*
Protection of Children	*No effect*	*No effect*
Utilities and Infrastructure	Short-term minor adverse effect Long-term minor beneficial effect	No effect
Transportation	Short-term minor adverse effect	No effect
Hazardous Materials and Waste	Short-term minor adverse effect Long-term minor beneficial effect	No effect

3.9.1 Aesthetics and Visual Resources

Adverse effects of projects on aesthetics and visual resources are short-term, lasting generally only for the duration of the construction phase. The long-term effect of projects on aesthetics and visual resources are generally non-existent because an area is returned to its pre-construction state once construction has been completed, or the effect is beneficial because an aging or decrepit structure has been removed or replaced with a more modern, aesthetically pleasing one. No long-term adverse cumulative effects on aesthetics and visual resources would be expected.

3.9.2 Air Quality

Combustive and fugitive dust emissions from construction activities produce air pollutants locally that persist for a short duration, but do not result in long-term effects on air quality. None of the proposed projects would create long-term operational sources of air pollutant emissions from new facilities, so there would be no cumulative long-term effects on air quality. The State of Iowa considers the effects of all past, present, and reasonably foreseeable future emissions

during the development of its SIP, in which the state accounts for all significant stationary, area, and mobile emission sources. Estimated emissions generated by known IAAAP projects would be de minimis and would not contribute significantly to adverse cumulative effects on air quality.

3.9.3 Noise

No significant adverse cumulative effects on the noise environment would be expected. Effects on the noise environment are cumulative when the projects occur simultaneously and are in close enough proximity to one another to contribute to the same noise environment. Construction projects generally are expected to have effects on the noise environment within 800 feet from the project site. Any projects undertaken concurrently and within 800 feet of any common noise receptor would have a cumulative noise effect. The effect, however, would be of short duration, lasting only as long as the construction phase, and would occur only during hours and on days when construction was occurring. For these reasons, only minor cumulative noise impacts would be expected.

3.9.4 Soils

No significant cumulative effects on soils would be expected. Each project on the installation would be undertaken in a discreet area and effects on soils from separate projects would not result in cumulative impacts on any individual soil areas. Army personnel or their contractors would be required to comply with IDNR NPDES General Permit No. 2.

3.9.5 Water Resources

No significant cumulative effects on water resources would be expected. Impacts on surface waters and groundwater from construction are generally short term, lasting for the duration of the construction activity plus a brief time afterward until BMPs to limit storm water runoff are fully operational. No overlap in effects from the Phase 1 and Phase 2 projects would be expected, and no cumulative effects on water resources would be expected.

No adverse cumulative effects on wetlands would be expected. All projects affecting wetlands would be permitted by the appropriate USACE district under CWA section 404. The Army would implement any mitigation measures required by the permit to reduce any significant effects on wetlands to less than significant.

3.9.6 Infrastructure and Utilities

No significant adverse cumulative effects on infrastructure and utilities would be expected. Short-term cumulative effects on infrastructure and utilities occur when projects that require use of installation infrastructure or utility systems occur at the same time, with each project creating minor additional demand. Long-term cumulative effects on infrastructure and utilities occur when projects individually create long-term increased demand on infrastructure or utility systems. None of the projects considered in the EA would create a long-term demand on infrastructure or utility systems, so no long-term adverse cumulative effect would be expected. The infrastructure and utility systems on IAAAP, although aging, can handle the additional demand created by construction projects, and projects that improve, replace, or upgrade utility systems have a long-term beneficial effect. Minor cumulative effects on IAAAP infrastructure and utility systems would be expected from any projects undertaken simultaneously. No cumulative effects on the IAAAP infrastructure and utility systems would be expected to be significant.

3.9.7 Traffic and Transportation

No significant adverse cumulative effects on traffic or the transportation system would be expected. Short-term minor cumulative effects on traffic and transportation would be expected if more than one construction project was undertaken simultaneously. IAAAP planners would review the expected traffic associated with each project and plan routes and schedules to accommodate the anticipated traffic load or defer projects if the traffic load was anticipated to interfere with accomplishing the mission. No construction projects create long-term effects on the transportation system, so no long-term adverse cumulative effect would be expected. Construction vehicles can reduce the life of roads, and the Army would consider wear and tear on installation roads and any repair needs in annual budget planning. Local roads also incur additional wear and tear from heavy construction equipment travel, and the Army would consult with local transportation authorities to determine the best routes and traffic volume limits to minimize effects on regional roads. No significant adverse cumulative effects on traffic or the transportation system would be expected.

3.10 Mitigation

Mitigation actions are used to reduce, avoid, or compensate for significant adverse effects. If any wetlands were adversely affected by implementing the proposed Industrial Core District ADP projects, IAAAP would mitigate significant adverse impacts on wetlands by obtaining a CWA section 404 permit from USACE and performing any mitigation actions specified in the permit.

No mitigation measures would be necessary for other resource areas under either the Preferred Alternative or the No Action Alternative to reduce adverse impacts to below significant levels.

Under the Preferred Alternative, IAAAP would implement the BMPs listed below, as applicable, during ADP project implementation to minimize adverse effects.

3.10.1 Best Management Practices

Air Quality

- Apply water or soil stabilizers to or cover exposed soil to suppress dust during ground-disturbing activities.
- Limit or halt soil-disturbing activities during high-wind conditions.
- Cover soil stockpiles and trucks transporting soil or other materials that could cause airborne dust.
- Use electricity from established power sources rather than generators whenever possible.
- Repair and service equipment to prevent excess emissions.
- To the maximum extent practicable, use newer on-road vehicles and off-road construction equipment for construction projects, preferably those that meet EPA or California Air Resources Board emissions standards, and retrofit older diesel vehicles to reduce their emissions.

Noise

- Wear appropriate hearing protection when exposed to noise levels exceeding OSHA limits from heavy equipment during construction in accordance with OSHA regulations.

Soils

- Obtain coverage under IDNR NPDES General Permit No. 2.
- Develop and implement an SWPPP for each site covered under the permit. The SWPPP would provide detail on the design, installation, and maintenance of effective erosion controls to minimize soil loss.
- Stabilize all disturbed areas upon completion of the work. Compliance with the provisions and requirements of IDNR General Permit No. 2 would ensure minimal soil disturbance and loss.

Water Resources

- Obtain coverage under IDNR General Permit No. 2.
- Develop and implement an SWPPP for each site covered under the permit. The SWPPP would provide detail on the design, installation, and maintenance of effective erosion and storm water controls to minimize pollutant delivery to surface waters. Compliance with the provisions and requirements of IDNR General Permit No. 2 would ensure minimal impacts on water resources.

Biological Resources

- Protect nesting migratory birds by conducting a visual survey to determine whether any nesting birds are present at a construction site for any project undertaken during the nesting season.
- If nesting birds are found, consult with USFWS to determine an appropriate course of action.

Transportation

- Route and schedule construction vehicles to minimize conflicts with on-post traffic.
- Locate staging areas to minimize effects on on-post traffic.
- Follow standard operating procedures for construction activities (e.g., vehicles equipped with backing alarms, two-way radios, and “Slow-Moving Vehicle” signs when appropriate) during all projects.

These measures would be communicated to contractors and DoD staff personnel responsible for construction, renovation, and demolition activities.

SECTION 4.0 CONCLUSIONS

This EA evaluates the potential effects on the natural and human environments from the proposal to implement IAAAP Industrial Core District ADP projects. The EA examines a Preferred Alternative and a No Action Alternative. The No Action Alternative is prescribed by CEQ regulations to serve as the baseline against which the Preferred Alternative is analyzed.

This EA evaluates potential effects on land use; aesthetics and visual resources; air quality; noise; geology, topography, and soils; biological resources; water resources; cultural resources; socioeconomics (including environmental justice and protection of children); traffic and transportation; utilities; and hazardous and toxic materials.

Under the Preferred Alternative:

- Short-term negligible-to-minor adverse effects on aesthetics and visual resources, air quality, noise, soils, surface waters, infrastructure and utilities, and traffic and transportation would be expected from construction activity.
- Short-term minor beneficial effects on the local economy would be expected from construction and renovation expenditures and employment.
- Long-term negligible-to-minor beneficial effects on aesthetics and visual resources and infrastructure and utilities would be expected from replacing aging structures and systems.
- No effects would be expected on land use; geology and topography; groundwater, floodplains, or wetlands; federally protected species; cultural resources; environmental justice or the protection of children; or hazardous materials and wastes.

Mitigation actions are used to reduce, avoid, or compensate for significant adverse effects. No significant adverse effects would be expected from implementing the Preferred Alternative. It is possible, however, that IAAAP would be required to obtain a CWA section 404 CWA permit from USACE if USACE determined that mitigation was necessary for impacts on wetlands from repairing the Mathes Lake dam. If necessary, IAAAP would obtain a CWA section 404 permit from USACE for work in wetlands and implement all mitigation actions required in the permit to compensate for adverse effects and reduce the impacts to less than significant.

For each resource area, the predicted effects from the Preferred Alternative and the No Action Alternative are summarized in Table 3-6. Implementing the Preferred Alternative would not be expected to result in significant adverse effects on any environmental resources or cultural or socioeconomic resources. Issuance of a FNSI would be appropriate, and an EIS is not needed before implementing the Preferred Alternative.

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Appendix A

Record of Non-Applicability

RECORD OF NON-APPLICABILITY
Implementation of the Real Property Master Planning Actions
Iowa Army Ammunition Plant
Middletown, Iowa

The Army proposes to implement various real property master planning actions at Iowa Army Ammunition Plant (IAAAP) in Middletown, IA. They include implementing installation-wide framework elements of and standards for future real property actions as well as planned implementation of specific projects identified in the IAAAP Industrial Core District Area Development Plan (ADP). The Industrial Core District ADP considers the installation's short-, mid-, and long-range mission requirements and fiscal constraints and identified projects for execution over the next 20 or more years. The proposed action focuses on implementing the short-range, or Phase 1, projects as identified in the Industrial Core District ADP, which consist of construction, infrastructure, modernization, and restoration projects.

The proposed action would generate new direct and indirect emissions from construction, demolition, renovation, and reparation activities, and operations of new, renovated, and repaired facilities. General Conformity under section 176 of the Clean Air Act has been evaluated per the requirements of Title 40 of the *Code of Federal Regulations* Part 93, Subpart B. The requirements of the General Conformity rule do not apply to the action because:

> The proposed action is completely within an area that has been designated in full attainment for the National Ambient Air Quality Standards.

Supported documentation and emission estimates:

( ) Are attached

( ) Appear in the National Environmental Policy Act documentation

(X) Other (not necessary)

_____ _____

Randy Doyle
Environmental Chief
Iowa Army Ammunition Plant
Middletown, IA

DATE