**DEPARTMENT OF THE ARMY  
 IOWA ARMY AMMUNITION PLANT, IOWA**

**INTEGRATED CULTURAL RESOURCES MANAGEMENT PLAN**

This signature page confirms that the following authorized personnel have reviewed this Integrated Cultural Resources Management Plan and concur with the recommended procedures as presented herein.

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# EXECUTIVE SUMMARY

This Integrated Cultural Resources Management Plan (ICRMP) has been prepared in compliance with Army Regulation (AR) 200-1 and Department of Defense (DOD) Instruction 4715.16. It is a five-year plan for the integrated management of cultural resources at the Iowa Army Ammunition Plan (IAAAP) for fiscal years (FY) 2013 through 2018. This plan is not a decision document, but it provides the Commander and those responsible for implementing the Commander’s decisions with the information needed to make appropriate decisions about the management of the cultural resources at IAAAP. The IAAAP will implement this plan to the extent possible utilizing available resources.

This updated ICRMP summarizes changes undergone at IAAAP since the last ICRMP was developed in 2002 and contains a series of policies and standard operating procedures (SOP) that will ensure compliance with appropriate laws and implementing regulations. It develops a five-year plan that: (1) identifies planned undertakings and possible impacts requiring cultural resource consultation; (2) identifies potential impacts to cultural resources; and (3) provides a projected schedule for implementation. The ICRMP also provides SOPs that may be utilized for the day-to-day management of installation requirements, identifies various public consultation requirements and how to incorporate them into installation management activities, and provides management goals that would benefit the installation’s management of its cultural resource responsibilities.

The current AR 200-1 defines a number of responsibilities and associated actions that are mandated for the Commander at IAAAP. These include the following:

* Establishing an installation cultural resources program;
* Designating an installation Cultural Resources Manager (CRM);
* Establishing a government-to-government relationship with appropriate Native American Indian Tribal groups;
* Establishing an installation coordination process for review and planning of projects;
* Preparing a Section 106 Programmatic Agreement or a Cooperative Agreement as appropriate;
* Ensuring integration of cultural resources management with mission planning, natural resources, and other activities;
* Establishing funding priorities and programming funds for cultural resources compliance; and
* Serving as the responsible official for the installation.

Implementation of this ICRMP will help ensure the consideration of all applicable laws, regulations, Executive Orders, and other directives in properly managing the IAAAP cultural resource management responsibilities. This ICRMP considers the responsibilities that reflect the requirements of AR 200-1, but it also identifies several management goals. These goals should not be considered mandates for completion but rather are suggested as a best management practice. IAAAP should consider the following:

* Develop a public involvement plan for actions potentially affecting cultural resources;
* Complete archeological survey as needed on an on-going basis prior to any ground disturbing undertaking;
* Test the 228 unevaluated National Register of Historic Places (NRHP) archeological sites as the sites are proposed for actions that could potentially impact them; and
* Complete the architectural survey and National Register evaluations, particularly for buildings proposed for undertakings within the next five years.
* Complete inventory forms for extant historic cemeteries. The Iowa SHPO has requested that IAAAP record all of the extant historic-era cemeteries on Iowa Site Inventory Forms and file them with the SHPO. Consideration should also be given to also recording the cemeteries as archeological sites with the Office of the State Archeologist.

# ACKNOWLEDGMENTS

This document was prepared by New South Associates, Inc., for Tetra Tech Inc. (Tetra Tech) and the IAAAP through a delivery order with the U.S. Corps of Engineers (USACE), Mobile District. The IAAAP point of contact for this report is Mr. Joseph Haffner, Natural and Cultural Resources Manager at IAAAP. Local Army and American Ordnance LLC staff members were vital to the completion of this report. Ms. Kristin Shields is the Tetra Tech project manager. Dr. J. W. Joseph, RPA of New South Associates, provided technical oversight for the plan revision.

This report was prepared by updating the ICRMP completed by Earth Tech for fiscal years (FY) 1997 to 2002.

The Technical Manager for the Mobile District was Glenn Harbin. The following persons generously contributed their time and information during the preparation of the FY 2013 to 2018 document: Kristin Shields and Jennifer Jarvis of Tetra Tech; Jeff Muehlmann of Army Materiel Command and Joseph Haffner and Leon Baxter of the IAAAP.

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# LIST OF ACRONYMS

AAP Army Alternate Procedures

ACHP Advisory Council on Historic Preservation

AEC Army Environmental Command

AIRFA American Indian Religious Freedom Act

APE Area of Potential Effect

AR Army Regulation

ARPA Archeological Resources Protection Act

BRAC Base Realignment and Closure

CA Comprehensive Agreement

CFR Code of Federal Regulations

COR Contracting Officer’s Representative

CRM Cultural Resource Manager

CRMP Cultural Resources Management Plan

DA Department of the Army

DARCOM Development and Readiness Command

DHAS Historical/Archeological Survey

DOD Department of Defense

EA Environmental Assessment

ECM Earth-covered magazine

EIS Environmental Impact Statement

EO Executive Order

EPR Environmental Programs Requirements

ER Engineer Regulation

FOIA Freedom of Information Act

FONSI Finding of No Significant Impact

FY Fiscal year

GOCO Government-owned, contract-operated

HABS Historic American Buildings Survey

HAER Historic American Engineering Record

HPC Historic Properties Component

HQDA Headquarters, Department of the Army

IAAAP Iowa Army Ammunition Plant

ICRMP Integrated Cultural Resources Management Plan

ID/IQ Indefinite Delivery/Indefinite Quantity

IMCOM Installation Management Command

INCRMP Integrated Natural and Cultural Resources Management Plan

JMC Joint Munitions Command

JOC Job Order Contract

JOR Job Order Request

# LIST OF ACRONYMS (Continued)

LAP Load, Assemble, and Pack

LEA Layaway Economic Analysis

MACOM Major Command

MOA Memorandum of Agreement

MSL Mean Sea Level

NAGPRA Native American Graves Protection and Repatriation Act

NCSHPO National Council of State Historic Preservation Offices

NEPA National Environmental Policy Act

NEV Not Yet Evaluated

NHPA National Historic Preservation Act

NPS National Park Service

NRHP National Register of Historic Places

NRM Natural Resources Manager

PA Programmatic Agreement

PBS Production Base Support

PL Public Law

PMOA Programmatic Memorandum of Agreement

REC Record of Environmental Consideration

ROA Report of Availability

RPAO Real Property Accountable Officer

RPMA Real Property Management Account

SHPO State Historic Preservation Officer

SOP Standard Operating Procedure

TCP Traditional Cultural Property

THPO Tribal Historic Preservation Officer

TMP Tract Management Plans

USACE U.S. Army Corps of Engineers

USC United States Code

USDI U.S. Department of the Interior

USMA United States Military Academy

UXO Unexploded Ordnance

# 1.0 INTRODUCTION

This Integrated Cultural Resources Management Plan (ICRMP) is required by United States Army (Army) Regulation (AR) 200-1. It is a five-year plan for the integrated management of Iowa Army Ammunition Plant (IAAAP) cultural resources to ensure compliance with Federal laws and Army regulations. The ICRMP is not a decision document, but it provides the Commander and those responsible for implementing actions with the information needed to make appropriate decisions about the management of the cultural resources at IAAAP.

The ICRMP is designed to assist IAAAP in identifying procedures required to comply with appropriate Federal laws and other applicable regulations. Among the laws with special consequence to IAAAP are the National Historic Preservation Act (NHPA), the Native American Graves Protection and Repatriation Act (NAGPRA) and the Archeological Resources Protection Act (ARPA). While these laws are separate and distinct legal mandates, they each have penalties and procedural elements associated with them that can halt or delay projects. For example, failure to take into account the effects of an undertaking as defined by the NHPA can result in formal notification from the Advisory Council on Historic Preservation (ACHP), which can be used by litigants in a court of law against the Army. Project delays and penalties could also result from violations associated with NAGPRA and ARPA. These laws and other regulations are reviewed in Section 1.2 below.

Under AR 200-1, the Commander is responsible for compliance with Federal cultural resource laws. AR 200-1 directs, as appropriate, that Commanders should do the following:

* Establish an installation cultural resources management program by means of an ICRMP;
* Designate a Cultural Resource Manager (CRM) to coordinate the installation’s cultural resource management program;
* Establish government-to-government relationship with Federally-recognized Native American tribes, as needed;
* Establish a process that involves the CRM in the early stages of the planning of projects;
* Ensure that cultural resources management is coordinated with installation activities such as mission planning, environmental impact analysis, natural resources and endangered species management planning and programming, including Integrated Natural Resources Management Plans;
* Establish funding priorities and program funds for cultural resource compliance as part of the Environmental Program Requirements report;
* Conduct a comprehensive evaluation of the cultural resources management program as part of the installation’s environmental compliance assessment required by AR 200-1;
* Develop ICRMPs, Programmatic Agreements (PA), Memoranda of Agreement (MOA), NAGPRA comprehensive agreements and Plans of Action, and National Register of Historic Places (NRHP) nominations and coordinate such documents with Major Command (MACOM) and the Headquarters of the Department of Army (HQDA);
* Serve as the “Agency Official” as defined in 36 CFR 800 with responsibility for installation compliance with the NHPA;
* Serve as the “Federal Agency Official” as defined in 43 CFR 10 with responsibility for installation compliance with NAGPRA;
* Serve as the “Federal Land Manager” as defined in 32 CFR 229 with responsibility for installation compliance with ARPA;
* Serve as the “Federal Agency Official” as defined in 36 CFR 79 with management authority over archeological collections and associated records; and
* Sign NHPA PAs, MOAs, and NAGPRA Comprehensive Agreements (CAs) and Plans of Action after MACOM and HQDA comments have been addressed, and prepare National Register nominations for historic properties.

## 1.1 HOW TO USE THIS PLAN

*This section reviews the structure of the ICRMP.*

### 1.1.1 Organization

The Introduction (Part 1) includes important discussions regarding Army policy, goals of the plan, information on how to use the plan, and a brief review of preservation laws and regulations.

The Management Plan (Part 2) contains three components: (1) recommended management practices, including a public involvement plan; (2) a set of Standard Operating Procedures (SOP); and (3) a five-year management plan. Management practices include the designation of responsibilities when conducting an installation point of review for cultural resource compliance. They also identify the need to periodically review, monitor, and report compliance activities. The SOPs are designed to address routine matters of cultural resource compliance and are accompanied by schematic flow-charts. The five-year management plan identifies key objectives and specifies the resources and schedule needed to accomplish those objectives.

The Overview of IAAAP (Part 3) describes the installation mission, summarizes its history, reviews important characteristics of the natural environment, and identifies the range of undertakings at IAAAP that could affect cultural resources. IAAAP’s current procedures for managing its cultural resources are also reviewed. In addition, the overview provides a narrative of current knowledge about the history and prehistory of IAAAP and the surrounding region. This part concludes with a summary of Native American groups known to have lived in the region.

The Resources (Part 4) summarizes the currently known cultural resources on IAAAP. In this section, cultural resources are organized by type. Archeological sites, traditional cultural properties (TCP), historic and architectural resources, and other resources are listed. The inventory concludes with the development of standards of significance by which archeological sites and historic buildings may be evaluated for eligibility and inclusion on the NRHP.

Finally, seven appendices are included: (A) glossary of key terms, (B) Native American points of contact, (C) archeological site data, (D) archeological site descriptions, (E) historic architectural data, (F) Cultural Resources Surveys, and (G) SHPO correspondence and concurrence letters.

### 1.1.2 Updating the ICRMP

This ICRMP is designed to be a “living” document that will be of contemporary and practical use to IAAAP planners. As the mission of IAAAP changes, the range and frequency of undertakings will also change. Similarly, as the objectives of the five-year plan are carried out, new information about IAAAP’s cultural resources will be obtained. The three-ring binder format of this ICRMP allows the text of sections to be replaced as warranted when new information is available. The entire ICRMP should be reviewed at the end of a five-year cycle to determine if revisions or corrections are needed.

# 1.2 PRESERVATION LAWS AND REGULATIONS

*This section contains brief summaries of the scope and intent of cultural resource laws and regulations that are of primary importance to the Iowa Army Ammunition Plant.*

### 1.2.1 Federal Laws

This section summarizes applicable Federal laws, including the Antiquities Act, the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), the Archeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), the American Indian Religious Freedom Act (AIRFA), and the curation of Federally-owned and administrated archeological collections.

#### 1.2.1.1 Antiquities Act

The Antiquities Act of 1906 (16 United States Code [USC] §431 et seq.) allows the President of the United States to set aside Federally-owned land as historic landmarks. It also allows the Federal government to acquire private land for historic preservation. The Act required that excavation of archeological sites on Federal land be conducted by qualified individuals under Federally issued permits, and it required that artifacts and objects recovered from these excavations be preserved permanently in museums.

The Act establishes penalties for any person who excavates, injures, or destroys any historic property or monument on Federal land without permission from the appropriate Federal department. Instructions for seizure of illegally acquired archeological objects are provided in implementing regulation 43 Code of Federal Regulations (CFR) Part 3. The procedure for issuing Federal permits has largely been given over to the permits issued under ARPA (see below).

#### 1.2.1.2 National Historic Preservation Act

The NHPA of 1966, as amended through 2004 (Public Law [PL] 89-665 et seq.), is the cornerstone of Federal preservation law and is the most important piece of legislation for the IAAAP CRM. The NHPA sets forth a general policy of preserving historic properties by the Federal government for the benefit and education of the people of the United States. The NHPA directs the Secretary of the Interior to maintain a list of NRHP properties composed of districts, buildings, sites, structures, and objects deemed significant in American history, architecture, archeology, engineering, or culture. Although the NHPA did not create the NRHP, it has expanded it. The Secretary is also directed to establish criteria for nominating properties and making determinations of eligibility.

The NHPA establishes a State Historic Preservation Office (SHPO) to identify and inventory historic properties within each state and to ensure that properties eligible for listing on the NRHP are taken into account during planning and development. The NHPA further establishes the ACHP as an independent Federal agency to advise the President, Congress, and Federal agencies on concerns of historic preservation.

Section 106 of the NHPA forms the basis for most of the cultural resources work conducted at IAAAP. Federal agencies are required to consider the effect of their undertakings on any properties eligible for inclusion on the NRHP. The ACHP must be given an opportunity to comment on the undertaking’s effects on historic properties. Federal agencies must take into account the effects of an undertaking during the planning stage. They must also take into account the effects of the undertaking on eligible or listed properties and provide the ACHP an opportunity to comment. This process is detailed in implementing regulation 36 CFR Part 800. Section 106 does not require that an undertaking be stopped, but reasonable efforts must be made to minimize harm to eligible properties until the consultation process is completed. Amendments to Section 106 were adopted July 6, 2004 and reflect changes based on court decisions mainly concerning the following two areas: 1) the ACHP cannot require a Federal agency to change its determinations regarding whether its undertakings affected, or adversely affected, historic properties, and 2) Section 106 does not apply to undertakings that are merely subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency. The amendments reflect changes regarding consultation with the ACHP for a no adverse effect determination that is in dispute and the time allowed for the ACHP to provide comments to the agency after reviewing the objection.

Section 110 of the Act sets broad, affirmative responsibilities with respect to historic properties. Federal agencies are required to assume responsibility for the preservation of historic properties located on lands owned or controlled by the respective agency. Federal agencies are required to locate, inventory, and nominate all properties that appear to qualify for inclusion on the NRHP. Federal agencies are required to manage historic properties in compliance with Section 106 and must comply with NAGPRA. The articulation with NEPA process is clarified. The transfer or sale of surplus Federally owned properties must be pursuant to review and approval of a preservation plan. Costs of preservation may be included in the planning efforts of agency undertakings.

Section 111 of the Act requires that Federal agencies implement alternatives for historic properties, including their adaptive use when they are not needed for current or projected purposes. Agencies may also lease or exchange historic properties if these actions are compatible with preservation.

Section 112 of the Act requires that all research, preservation, and protection activities be conducted by persons meeting professional standards developed by the Secretary of the Interior, including both agency and contractor personnel.

Section 304 allows the head of a Federal agency to withhold from disclosure information concerning the location or character of historic resources. It should be noted, however, that a Freedom of Information Act (FOIA) filing can be used to obtain such information except where that information is exempt from FOIA disclosure under stipulations of ARPA.

#### 1.2.1.3 National Environmental Policy Act

The NEPA of 1969 (42 USC §4321 et seq.) establishes a national policy that encourages harmony between humans and the environment. The policy states that the Federal government shall use all practicable means to preserve the productive harmony of the environment while fulfilling the social, economic, and other requirements of generations of Americans. Included in preserving the environment is the preservation of important historic and cultural aspects of national heritage.

The Act requires all Federal agencies to prepare a document, most commonly an Environmental Assessment (EA), which assesses the potential impacts of any proposed action on the environment. If impacts are judged potentially significant, an Environmental Impact Statement (EIS) must be prepared. An EIS identifies any unavoidable adverse environmental effects, as well as alternatives to the proposed action, prior to its implementation. The statement shall be prepared as early in the planning process as possible, and shall accompany the action’s proposal through the agency review process.

The implementing regulations of NEPA (40 CFR Part 1500-1508) clarify that the Act in no way directs, replaces, or supersedes Section 106. Section 106 studies are conducted to determine the effect on historic properties for any Federal undertaking, while NEPA requires a full EIS only for some Federal undertakings. As outlined in 36 CFR Part 800.8, the Section 106 process can be coordinated with NEPA. The use of documentation prepared for a NEPA document to comply with Section 106 is permitted if the agency official has notified in advance the SHPO and the Council that it intends to do so following the standards outlined in 36 CFR Part 800.8.

#### 1.2.1.4 Archeological Resource Protection Act

ARPA of 1979 (PL 96-97), as amended, establishes that archeological resources on public lands are part of the Nation’s heritage and should be preserved for the benefit of the American people. Unauthorized excavation, removal, damage, or alteration of any archeological resource on public lands is prohibited. The law provides criminal and civil penalties for such violations. Permits may be obtained from the appropriate Federal agency by qualified individuals who want to excavate or remove archeological resources from Federally owned land. The proposed work must be undertaken strictly for the purpose of furthering archeological knowledge. Permits are not necessary for archeological work conducted in support of mission requirements (for example, in compliance with NHPA Section 106). However, a permit might be necessary for work in support of NAGPRA (for example, to recover human remains from a vandalized burial site). Under ARPA, all archeological artifacts and resources recovered from IAAAP are to remain the property of IAAAP and the U.S. Army.

Federal agencies may withhold any information pertaining to the location of archeological sites if the agency determines that disclosing such information would put the resource at risk. ARPA specifically excludes such information from responses to a FOIA request and may include all archeological resources, not just those that are eligible or listed on the NRHP. Federal agencies must develop plans for surveying lands not scheduled for specific undertakings, record and report archeological violations, and develop public awareness programs.

The Act’s implementing regulations for the Department of Defense (DOD) (32 CFR Part 229) specify that protected resources must be at least 100 years old and of archeological interest. Rocks, coins, bullets, and minerals are excluded from protection, as are paleontological items not found in an archeological context. The regulations also outline the process for granting excavation permits.

#### 1.2.1.5 Native American Graves Protection and Repatriation Act

The purpose and intent of the NAGPRA (PL 101601) is to acknowledge the ownership of certain human remains, funerary objects, and sacred artifacts by Native American tribes. The Act also requires that these objects be treated in a way that is agreeable to these tribes. The Act’s implementing regulations are found in 43 CFR Part 10.

For remains or objects discovered on Federal lands after enactment of NAGPRA (1990), the Federal agency must notify Native American tribes of the discovery and must provide them with an opportunity to claim affiliation with the remains or objects. For remains or objects already in the possession of Federal institutions or agencies, the agency must inventory the remains or objects and provide the inventory to Native American tribes. The tribe established to have right-of-ownership may then consult with the agency to determine disposition of the remains or objects, and the agency is responsible for complying with these determinations. It should be noted that the NAGPRA Section 5 inventory for IAAAP has been completed.

#### 1.2.1.6 American Indian Religious Freedom Act

The AIRFA of 1978 (PL 95-341) preserves for Native Americans their inherent right to believe, express, and exercise their traditional religions. This right includes access to archeological sites and other sacred places under Federal jurisdiction.

#### 1.2.1.7 Curation of Federally Owned and Administered Archeological Collections

The effective and efficient care of archeological collections generated by public projects is a responsibility of many Federal and other public agencies. These regulations, found in 30 CFR Part 79, establish the definitions, standards, procedures, and guidelines to be followed in preserving collections of prehistoric and historic remains.

### 1.2.2 Executive Orders and Presidential Memoranda

This section summarizes various Executive Orders (EO) and Presidential Memoranda applicable to cultural resources management at IAAAP.

#### 1.2.2.1 Executive Order 11593

EO 11593, dated 13 May 1971, establishes a national policy to preserve and maintain the historic and cultural environment of the United States. The EO directs Federal agencies to administer historic properties under their control so as to preserve the resources for future generations. This EO was essentially incorporated into the 1980 amendments to the NHPA as Section 110 and was further revised during the 1992 amendment to the NHPA.

Federal agencies must locate, inventory, and nominate all eligible sites, buildings, districts, and objects under their control to the Secretary of the Interior for listing on the NRHP. The Federal agencies must also take precautions to prevent historic properties from being sold, transferred, or demolished. Any property that will be damaged as a result of a Federal undertaking must be fully assessed and documented before it is impacted. The agencies must report their efforts to the Secretary of the Interior.

#### 1.2.2.2 Executive Order 13007

EO 13007, dated 24 May 1996, establishes the responsibility of Federal agencies to allow access to and the ceremonial usage of sacred Native American sites on Federal land by Native American religious practitioners. Agencies shall maintain confidentiality as to the location of such sacred sites and shall avoid adversely affecting their integrity.

#### 1.2.2.3 Presidential Memorandum Concerning Eagle Feathers

A Presidential Memorandum, dated April 29, 1994, establishes U.S. policy with regard to the collection and distribution of eagle feathers for Native American religious purposes. Among other stipulations, agencies and installations must recover salvageable eagle carcasses and eagle feathers found on Federal lands and ship these to the National Eagle Repository.

#### 1.2.2.4 Presidential Memorandum Concerning Government-to-Government Relations

A second Presidential Memorandum, also dated April 29, 1994, establishes U.S. policy with regard to conducting relationships with Native American tribes. Consultation with Native American tribes must be conducted as government-to-government relations.

### 1.2.3 Department of Defense Directive 4715.16

DOD Directive 4715.16, dated September 18, 2008, establishes DOD policy and assigns responsibilities regarding cultural resources management. The Directive covers programming and budgeting priorities for CRM programs and outlines required content for ICRMPs.

### 1.2.4 Army Regulations

This section summarizes Army regulations applicable to the management of cultural resources at IAAAP.

#### 1.2.4.1 Army Regulation 200-1

AR 200-1 (Environmental Protection and Enhancement) covers environmental protection and enhancement and provides for compliance with the NHPA, NEPA, and other acts. AR 200-1 states that the Army’s goal is to protect buildings, structures, sites, and objects of historic, architectural, archeological, and cultural value located on Army-controlled property. AR 200-1 also provides for environmental audits and status reports. Army entities that are responsible for the selection of military construction sites will conduct environmental surveys prior to site selection. AR 200-4 (Cultural Resource Management), effective 13 October 1997, prescribed the Army’s policies, procedures, and responsibilities for managing cultural resources in support of the military mission and consistent with sound principles of resource stewardship. AR 200-4 was integrated into, and replaced by, AR 200-1, which currently serves as the Army’s primary regulation for cultural resources.

#### 1.2.4.2 Environmental Effects of Army Actions, 32 CFR Part 651 (Army Regulation 200-2)

Environmental Effects of Army Actions, formerly AR 200-2, establishes policy, procedures, and responsibilities for integrating environmental considerations into Army planning and decision-making. Environmental Effects of Army Actions implements the requirements of NEPA in assessing the environmental effects of Army actions. It establishes criteria for determining what Army actions are categorically excluded from requirements to prepare an EA or EIS, and it lists applicable categorical exclusions.

#### 1.2.4.3 Army Regulation 870-20

AR 870-20 (Historical Properties and Museums) provides standardized guidelines and procedures for maintaining an Army museum. The procedures include caring for and maintaining historically significant property; certification as a professional museum; establishing exhibits; and acquisition, cataloging, and deaccession of historical objects. This regulation should be used in conjunction with regulation 36 CFR Part 79 of NHPA.

#### 1.2.4.4 Army Regulation 1-33

AR 1-33 (The Army Memorial Program) sets policies, procedures, and responsibilities for the memorialization of deceased persons who distinguish themselves, and dedication in the name of living persons in accordance with a condition of a gift given to either the United States Military Academy (USMA) or a foundation/association for the benefit of USMA. The regulation also outlines procedures for memorials when an installation closes, directing the installation commander to offer the plaque to the next of kin of the person memorialized. If the next of kin cannot be located or refuses a plaque, it will be sent to the U.S. Army Historical Clearing House.

#### 1.2.4.5 Army Regulation 210-190

AR 219-190 (Post Cemeteries) sets policies, procedures, and responsibilities for the operation, maintenance, and inspection of Army post cemeteries, whether they are open or closed, and Army controlled plots used for post burials within private cemeteries.

## 1.3 OVERLAPPING AUTHORITIES

*This section discusses issues that have several applicable laws and regulations.*

From the above review, it is clear that, in several cases, different laws and regulations pertain to the same issue. For example, inventory of all cultural resources on Federal land or under the control of a Federal agency is required by NHPA Section 110, by EO 11593, and by ARPA Section 14. Similarly, AIRFA, the Religious Freedom Restoration Act, and EO 13007 all deal with different aspects of Native American sacred places that may be under Federal control. As noted above, compliance with one law in no way abrogates an agency’s responsibility to comply with all aspects of other applicable legislation.

Of greater importance to the practical management of cultural resources at IAAAP is the relationship between the NHPA and NEPA. In summary, compliance with NEPA does not in all cases constitute compliance with NHPA.

Both NHPA and NEPA are triggered when a proposed Federal action or undertaking has the potential to affect cultural resources. Under the NHPA, an undertaking has “no adverse effect” on a given historic property when it does not diminish those characteristics that qualify the property for inclusion in the NRHP. Under NEPA, a proposed action has “no significant impact” when it is not expected to affect the property to any significant degree. However, the demolition or modification of properties that are eligible for or are listed on the NRHP could trigger a NEPA EIS.

NEPA applies only to “major” actions that have the potential for significant impacts on the environment (and which are not categorically excluded), whereas the NHPA can be triggered by any undertaking that has the potential to affect NRHP-eligible cultural resources. For example, changing the original wood windows on an historic building to modern vinyl frames would not be a “significant impact” under NEPA because it is extremely limited in degree, rather than a major action. However, this same undertaking could be an “adverse effect” under NHPA because it would diminish the integrity of the building.

Other areas where overlapping authorities may occur include archeological fieldwork being conducted utilizing an ARPA permit; this work would have to utilize the appropriate 36 CFR Part 800 process if the archeological property being impacted is eligible for or is listed on the NRHP. Similarly, an archeological excavation being conducted as an NHPA Section 106 action could trigger a NAGPRA requirement if Native American human remains or associated funerary objects are recovered.

Consultation requirements for NHPA, ARPA, NEPA, and the Sacred Sites EO are required. In the case of Section 106 coordination under the NHPA, Federal agencies are required to consult with other Federal, state, and local agencies, and Federally recognized Native American tribes in association with preservation-related activities. Consultation on permits issued for ARPA relates to several areas of legal authority. The regulations for issuing permits (1) include a specific requirement to notify Native American tribal groups regarding potential impacts to properties of significance to them, (2) requires coordination with Section 106 when the permit could impact properties eligible for or listed on the NRHP, and (3) requires that an appropriate NEPA document be prepared. While not explicitly stated, it is also appropriate that public involvement consisting of notifying regionally recognized archeological groups regarding the permit’s scope and purpose be undertaken. NEPA also requires public disclosure of EAs and EISs for comment on significant impacts to the environment (including impacts to cultural resources). Under the Sacred Sites EO, Federal agencies are responsible for allowing access to and the ceremonial usage of sacred Native American sites on Federal land.

The consultation processes for these various laws and regulations may also overlap. For example, any NEPA undertaking would provide a good opportunity for public comment and consultation with issues relating to Section 106 consultation. On the other hand, cultural resource issues relating to NAGPRA, AIRFA, and sacred sites involve a combined effort to consult with Federally recognized tribes, if conducted as a government-to-government relation. In this case, the public disclosure as required by the NEPA process may not be the best method of consultation.

## 1.4 MANAGEMENT OPTIONS

*This section explains the two alternative management strategies for ensuring NHPA compliance.*

Under NHPA, every Federal action or undertaking with the potential to affect historic properties must be reviewed through “Section 106 consultation.” Undertakings are defined as projects, activities, or programs funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including the following:

1. Those carried out by or on behalf of the agency;
2. Those carried out with Federal financial assistance; and
3. Those requiring a Federal license, permit, or approval.

The Army and IAAAP must consult with the Iowa SHPO and ACHP, utilizing the process found in 36 CFR Part 800 (see Section 1.4.1 of this ICRMP) on all undertakings to determine whether the undertaking will affect any historic properties and to determine the level of effect. This consultation process can be lengthy, is often redundant for similar undertakings, and can be challenging when implementing an installation’s military mission.

To provide Federal agencies with additional flexibility, the implementing regulations (36 CFR 800.14) provide for several alternative methods of consultation, including PAs. AR 200-1 provides guidance to prepare and implement an agreement to address and streamline the Section 106 consultation process for ongoing mission and operations activities.

### 1.4.1 Case-by-Case Management

Procedures for Section 106 consultation are found in implementing regulation in 36 CFR Part 800. Before proceeding to Step 1 listed below, the IAAAP CRM must first determine if the proposed action is an undertaking, and also specify the “area of potential effect” (APE). As defined by the NHPA, an undertaking is a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including the following:

1. Those carried out by or on behalf of an agency;
2. Those carried out with Federal financial assistance;
3. Those requiring a Federal permit, license, or approval; and
4. Those subject to state or local regulation administered pursuant to a delegation or approval by a Federal agency.

It should be noted that for an undertaking, the Army does not need to know with certainty that NRHP properties are present or will be modified as a result of the planned action. In addition, an undertaking is only considered further for purposes of Section 106 when a property that is eligible for listing or that is listed on the NRHP is present, or if existing information is not sufficient to confirm the presence or absence of NRHP properties.

If the action is determined to be an undertaking, the IAAAP CRM must then determine the APE. The APE is defined in 36 CFR 800 as “the geographic area or areas within which the undertaking may cause changes in the character of or use of historic properties, if any such properties exist.” It is important to remember that the APE is defined before the identification of NRHP properties begins, so it may not be known whether any historic properties actually exist there.

The following important issues should be considered regarding the APE:

1. The APE is defined before the identification of historic properties.
2. The APE is defined through a process of consultation with the SHPO and other interested parties identified by the SHPO.
3. The APE is not based on land ownership and therefore is not necessarily confined to the installation.
4. All alternative locations under consideration for the project must be included.
5. All locations from which the project may be visible and where there might be changes in traffic patterns, land use, or public access must be included.
6. The APE may not be the same area of effect as defined under NEPA.
7. The APE may not be a single area and may not have hard and fast boundaries.
8. The definition of the APE does not dictate what the Army must do to identify, avoid, or mitigate effects within it.

Once the IAAAP CRM determines that an action is an undertaking and the APE has been defined, the subsequent consultation process may be summarized in five steps.

* *Step 1: Identify and evaluate historic properties.* The Army must make a good-faith effort to locate and identify all historic properties that might be affected by the undertaking and must request the SHPO’s opinion about whether further actions are needed to identify historic properties (36 CFR Part 800.4[a-d]). Properties must then be evaluated for their NRHP eligibility, and the Army must consult with the SHPO regarding their eligibility. Disagreements are referred to the Keeper of the Register, who acts on behalf of the Secretary of the Interior. If the Army finds one or more historic properties, it proceeds to Step 2.
* *Step 2: Assess the effect of the undertaking.* The Army must determine whether the proposed undertaking could affect the properties in any way – either positively or negatively. Again, the Army must consult with the SHPO to make this decision. A determination of no effect is made if no NRHP-eligible or listed properties are within the APE of the undertaking. If one or more NRHP-eligible or listed properties is found to exist within the APE, the Army must apply the criteria of effect per 36 CFR 800.5(a). A no effect determination is then made at 36 CFR 800.5(b) if the eligible property will not be impacted by the undertaking. If the Army finds no effect, then it must compile documentation that supports the finding and notify the SHPO. If any effect is found (either negative or positive) per 36 CFR 800.5(c), then 36 CFR 800.9(a) is applied to determine whether this is an adverse effect. If the Army finds no adverse effect (36 CFR 800.9[a]), then the Army must either obtain concurrence from the SHPO or submit the finding to the ACHP for review and notify the SHPO. In either case, documentation of the finding must be provided. If there is adverse effect (36 CFR 800.9[b]), the Army must proceed to Step 3.
* *Step 3: Consultation.* If the proposed undertaking will result in an adverse effect to any NRHP-eligible or listed property, then the Army must consult with the SHPO and with recognized interested parties and must notify the ACHP on ways to avoid, reduce, or mitigate the adverse effects of the undertaking on historic properties (36 CFR 800.5[e][4]). Either party may request that the ACHP join the consultation. Interested persons may also be invited to participate at the discretion of either party. In most cases, the consulting parties can agree on ways to accommodate historic preservation concerns as the undertaking proceeds. Usually, a MOA stipulates how the undertaking will be carried out in order to avoid or mitigate adverse effects.
* *Step 4: Council comment.* If consultation results in an MOA, the ACHP reviews and comments on it (36 CFR 800.6). If consultation fails to reach an agreement, the Army must request written comments from the ACHP and must submit written documentation (36 CFR 800.8[d]).
* *Step 5: Proceed.* If the ACHP has accepted or commented on an MOA, the Army may proceed with the undertaking in accordance with the terms of the MOA (36 CFR 800.6[c]). In the absence of a MOA, the Army must take into account the ACHP’s comments before making a decision about how to proceed with the undertaking. The Army must then notify the ACHP prior to proceeding.

### 1.4.2 Alternatives to Case-by-Case Management

To provide agencies with additional flexibility, the implementing regulations (36 CFR 800.13) allow several alternatives to case-by-case management. These alternatives are discussed below.

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#### 1.4.2.1 Programmatic Agreements

The most common alternative to case-by-case review is the PA, developed among the Army, the ACHP, and the SHPO. A PA is a special type of MOA, typically developed for a large or complex project or for a class of undertakings that would otherwise require numerous individual requests for ACHP comments under Section 106. The ACHP and the Army arrange for public notice of the consultation and must request the views of state and local government agencies, Native American tribes, industries, and organizations. Upon reaching an agreement, the PA is published in the Federal Register. It remains in force until it expires or is terminated.

Among other situations, a PA is appropriate when the effects on historic properties are similar and repetitive or when undertakings involve routine management activities at Federal installations. Normal mission-related undertakings such as training and testing are especially suited for a PA, as are regular or recurrent non-mission-related undertakings, such as mining, agricultural, manufacturing, oil, gas, and forestry leases. This type of PA should strictly implement Section 106 compliance procedures and should not incorporate other ICRMP components such as compliance with NAGPRA, ARPA, or other laws and regulations.

Part of this ICRMP is utilized to develop alternative compliance procedures to streamline the Section 106 process. These procedures are detailed in Part 2 (Management Plan) of this document and will be included in a PA developed to implement these alternative practices, assuming the PA is signed by all parties.

#### 1.4.2.2 Program Comment For World War II and Cold War Era (1939-1974) Ammunition Storage and Production Facilities

The Advisory Council on Historic Preservation’s (ACHP) Section 106 regulations provides for alternative methods that federal agencies can utilize to meet their responsibilities under Section 106. One of these alternative methods is issued as the ACHP’s Program comments. Program comments are issued by the ACHP at the request of the federal agency or on its own initiative. They are designed to provide the ACHP flexibility to issue comments on a federal program or class of undertakings instead of issuing comments 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, as its original purpose was the storage of ammunition. The Program Comments, issued in 2006, were designed to provide the DOD and its Military Departments the ability to better manage their vast inventory of ammunition storage facilities associated with World War II and the Cold War era. 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 to be eligible for inclusion for the NRHP. Under these comments, the Army fulfilled prescribed measures mitigated to address the effects of certain undertakings, including demolition.

#### 1.4.2.3 Army Alternate Procedures

The Army Alternate Procedures (AAP) was developed in conjunction with the ACHP and the Army to streamline Section 106 compliance responsibilities for the Army. The AAP was approved by the ACHP in 2001 and two installations have operated under AAP since 2006, Fort Sam Houston and Fort Benning. The AAP sets forth a process by which the Army manages its historic properties programmatically instead of on a case-by-case basis.

In order for an installation to utilize the AAP, several steps must be followed in a process outlined by the AAP. Once the decision is made to use the AAP, the Commander must document the decision. A Historic Properties Component (HPC) Plan is then developed in coordination with the stakeholders. The HPC is reviewed by the Army, then the consulting parties and the public, and finally by the ACHP. Once the ACHP certifies the HPC, the installation operates under the AAP for five years. A Cultural Resource Manager (CRM) must be designated by the Commander to carry out and coordinate the AAP for the installation. The CRM must either be qualified under the Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation, and/or have access to technical experts who meet those standards.

As a streamlined process for Section 106 compliance, the AAP was designed as a way to provide installations with more flexibility in project planning by internalizing the compliance process. Unlike other types of agreements including the PA, the AAP also internalizes adverse effects to historic properties.

The installation reports a summary of projects periodically to the SHPO. For an installation with many historic properties to manage and a well established CRM program and manager, the potentially lengthy procedure to become certified to implement the AAP may prove beneficial.

However, more traditional Programmatic Agreements may be more appropriate for installations with fewer historic properties to manage if routine activities can be identified and incorporated in a PA.

#### 1.4.2.4 Other Alternatives

Other, less common alternatives to case-by-case management include: (1) counterpart regulations developed by Federal agencies to meet their unique circumstances, or (2) the use of state review processes. In both cases, the ACHP must approve the substitute review process.

# 2.0 MANAGEMENT PLAN

This section discusses the management plan and is comprised of four parts:

* *Policies* (see Section 2.1) that will assist IAAAP in facilitating compliance with historic preservation requirements;
* *Standard operating procedures* (see Section 2.2) that identify specific actions to be taken to ensure compliance;
* *A five-year plan* (see Section 2.3) that identifies key compliance objectives and the budget and schedule resources necessary to achieve these objectives; and
* *A plan summary* (see Section 2.4).

The program priorities for IAAAP are:

* **ESTABLISH a CRM Process**. IAAAP should put in place an integrated process for cultural resource management and project planning. Designating an experienced archeologist as the CRM would greatly benefit this effort, since IAAAP maintains a number of archeological sites.
* **COMPLETE the Archeological Inventory**. IAAAP needs to complete the required inventory of cultural resources as needed, based on new undertakings.
* **COMPLETE the Architectural Survey**. As buildings and structures become 50 years of age, survey and evaluation of those buildings should be conducted and coordinated with the SHPO.
* **NOMINATE Eligible Properties**. IAAAP needs to begin the process of nominating its significant eligible properties to the NRHP, pending available funding.
* **UPDATE the ICRMP**. IAAAP needs to integrate all work accomplished or not completed during the next five years for the next ICRMP.

## 2.1 POLICIES

*This section stipulates management practices that will assist Iowa Army Ammunition Plant in facilitating compliance with historic preservation requirements.*

2.1.1 Commanding Officer’s Responsibilities

The Commander shall appoint a CRM and ensure that this ICRMP, PAs, and any MOAs are operational. The Commander’s other cultural resource responsibilities are summarized in AR 200-1 and include the following:

* Establishing a process that involves the CRM in the early stages of the planning of projects;
* Evaluate implementing an installation-wide PA to streamline cultural resource compliance procedures;
* Establishing government-to-government relationships with Federally recognized Native American tribes and designating a Coordinator for Native American Affairs, as needed;
* Ensuring that cultural resources management is coordinated with installation activities such as mission planning, environmental impact analysis, natural resources and endangered species management planning and programming to include Integrated Natural Resources Management Plans;
* Establishing funding priorities and program funds for cultural resource compliance;
* Conducting a comprehensive evaluation of the installation’s cultural resources management program as part of the environmental compliance assessment required by AR 200-1;
* Developing ICRMPs, PAs, MOAs, NAGPRA CAs and Plans of Action, and National Register of Historic Places nominations and coordinating such documents with MACOM and HQDA;
* Serving as the “Agency Official” as defined in 36 CFR 800, with responsibility for installation compliance with the NHPA;
* Serving as the “Federal Agency Official” as defined in 43 CFR 10, with responsibility for installation compliance with NAGPRA;
* Serving as the “Federal Land Manager” as defined in 32CFR 229, with responsibility for installation compliance with ARPA;
* Serving as the “Federal Agency Official” as defined in 36 CFR 79, with management authority over archeological collections and associated records; and
* Signing NHPA PAs, MOAs, and NAGPRA CAs and Plans of Action after MACOM and HQDA comments have been addressed, and preparing National Register nominations for historic properties.

### 2.1.2 Installation Cultural Resource Manager

As of February 2013, IAAAP’s the CRM designated by the Commander is the formal point of review and coordination for all cultural resource compliance activities, in compliance with AR 200-1. At IAAAP, the installations Natural Resources Manager (NRM) also serves as the CRM. CRM duties at IAAAP are split to provide full installation coverage. CRM duties at IAAAP are additional duties to already existing positions. While the NRM serves as the overall CRM the NRM focus is on possible impacts to archeological resources. The Chief of Contract Administration also serves as Real Property Accountable Officer (RPAO) who reviews requests for the modification of facilities for possible impacts to structures to include cultural and historical impacts. The NRM and RPAO work together to provide full installation coverage.

The CRM’s review, compliance, and coordination responsibilities include the following:

* Reviewing all undertakings, such as Army Military Construction Appropriation, Job Order Contracts, and training exercises, and Department of the Army (DA) 1391 Military Construction Project Data forms and determining the type and level of impacts to cultural resources;
* Determining the applicable laws and regulations;
* Determining the applicable SOPs (contained in this ICRMP), other applicable consultation or regulatory requirements, or if the undertaking is considered under the PA developed for NHPA compliance;
* Participating in consultation as provided in this ICRMP or otherwise specified by appropriate laws and regulations;
* Conducting and reviewing appropriate studies, as necessary;
* Serving as the IAAAP point of contact for Native American consultation;
* Serving as the IAAAP point of contact for consultation with the Iowa SHPO;
* Coordinating cultural resources management activities with organizational elements, tenants, and other parties identified by the IAAAP Commanding Officer; and
* Issuing permission for earth moving activities.

The CRM’s record-keeping and curation responsibilities include the following:

* Developing and maintaining records, reports, and documentation sufficient for consultation and an assessment of cultural resources for their eligibility for inclusion in the NRHP (including maps, plans, notes, data forms, records, photographs, memoranda, journal notes, Job order requests, and draft and final reports); and
* Ensuring that artifacts recovered from IAAAP, and curated either at IAAAP or another suitable curation facility, are maintained in accordance with 36 CFR 79 (Curation of Federally Owned and Administered Archeological Collections). Artifactual material from IAAAP is currently curated at suitable repositories and agreements for the long-term curation of that material are in place.

The CRM’s administrative responsibilities include the following:

* Assisting the Commander with developing funding priorities for all cultural resources program and compliance activities;
* Establishing cultural resources programming policy for identification of specific actions or projects requiring funding; identifying and documenting all current and projected cultural resources requirements;
* Developing budget requirements associated with Production Base Support; and
* Ensure that the current ICRMP is operational at all times and that all procedures of the ICRMP and stipulations of applicable PAs or MOAs are implemented, as required by AR 200-1.

### 2.1.3 NAGPRA Compliance and Native American Consultation

In compliance with NAGPRA, the CRM must ensure that an accurate and up to date inventory of Native American human remains, funerary objects, or sacred objects is maintained. It is the responsibility of the Commanding Officer and the CRM to begin repatriation consultations on materials identified during inventories. If Native American human remains are found during project undertakings, the activity that precipitated the discovery will immediately cease and the installation Commander will immediately be notified. The CRM will initiate consultations with the appropriate tribe to develop a plan for disposition of the remains. Further work in the vicinity will cease for 30 days to allow for this required consultation.

The NAGPRA Section 5 inventory was completed for IAAAP and identified no human remains or funerary objects as being from IAAAP.

### 2.1.4 Economic Analysis of Historic Buildings Scheduled for Demolition

Section 110 of the NHPA requires that historic properties be considered by Federal agencies for re-use to the maximum extent feasible before disposal. An important way to ensure appropriate planning measures are being followed is to conduct an economic analysis of historic buildings and structures that are being considered for demolition and replacement. The decision to re-use, replace, or demolish a facility should be justified with a least cost, life-cycle economic analysis. The AEC and the Construction Engineering Research Laboratory have developed a computer-based analysis (Layaway Economic Analysis [LEA]) for buildings. LEA allows the inputting and manipulation of costs associated with repairs, maintenance, demolition, and replacement of buildings. LEA also has components that allow for adjustments for NRHP-eligible and listed properties.

When the economic analysis demonstrates that rehabilitation costs exceed 70 percent of the building’s replacement cost, replacement construction may be used. However, the 70 percent value may be exceeded where the significance of a particular historic structure warrants special attention, or if warranted by the life cycle cost comparisons. The assessment of new construction must evaluate life-cycle maintenance cost, utility costs, replacement costs and other pertinent factors. Replacement costs should not be based on replacement in kind, but should be based on a design that is architecturally compatible with the historic property. If the building to be disposed of is an historic property, potential reuses of the building must be analyzed prior to making the final decision to dispose of the property.

### 2.1.5 Review, Monitoring, and Reporting

Copies of all documents pertaining to cultural resource management at IAAAP must be kept on file by the CRM, including, but not limited to, correspondence, memoranda to file, published and unpublished technical reports, annual compliance reports, maps, site records, and lists of properties. The CRM is to file reports in accordance with separately developed agreements and interagency agreements.

### 2.1.6 Public Involvement

Public consultation for Section 106 of the NHPA can be effectively completed by informing interested parties of potential impacts to historic properties in a timely manner. A recommended approach to secure a list of interested persons, historic preservation groups, and other interested parties, is to contact the Iowa SHPO and ask for a list of parties that have previously contacted their office seeking information on historic properties in the region of IAAAP. The Iowa SHPO will also be able to supply the names of potentially interested historic preservation groups in the region and elsewhere in the state or country with a particular interest in properties associated with IAAAP. IAAAP should also maintain the list (provided in Appendix B) of points of contact for Native American tribal groups with a potential interest in the outcome of Section 106 consultations on NRHP properties. A proactive approach to all consultation is best. Preparation of letters to all of the identified interested parties asking if they would desire to be kept informed of any potentially adverse impacts to NRHP-eligible properties will allow IAAAP to keep a list of those names that respond for quick coordination on significant projects. IAAAP will have to exercise best judgment on the need to coordinate every Section 106 action and may find it appropriate to begin involved public coordination only if the undertaking has the potential to be significant or controversial. The use of the NEPA public involvement process is acceptable and recommended as an approach because it will allow for the combination of the two authorities into a single set of review and comment periods. However, the NEPA documents, notifications, newspaper announcements, and any public meetings must specifically identify that NRHP Section 106 is part of the subject matter. Any public involvement or public notice should be coordinated with the IAAAP Public Affairs Office.

### 2.1.7 NHPA and Tribal Consultation

Section 106 requires that Federal agencies consult with any Indian tribe that attaches religious and cultural significance to historic properties that may be affected by an agency’s undertakings. The ACHP provides guidance for Federal agencies on carrying out tribal consultation under Section 106. The basis for this consultation is the understanding of the government-to-government relationship that the Federal government and Indian tribes have with one another. As a result, each Federal agency is required to establish programs that describe and maintain the consultative relationship with tribes. The ACHP notes that Federal agency staff responsible for carrying out tribal consultation should be familiar with the history of the relationship between the U.S. government and Indian tribes because that history may influence the context of consultation. AR 200-1 further defines tribal consultation for the Army, which sets forth the procedure for consultation, requiring:

1. Consultation occurs formally and directly between Commanders and heads of Federally-recognized tribal governments;
2. Commanders establish government-to-government relations with Federally-recognized Indian tribes by means of formal, written letters to the head of tribal governments;
3. Such letters should designate an installation Coordinator for Native American Affairs who is authorized to conduct follow-on consultations with designated representatives of the tribal government; and
4. Installations assess the impact of their plans, projects, programs, and activities on tribal trust resources and assure that tribal government rights and concerns are considered during the development of such plans, projects, programs, and activities (ACHP 2008).

The ACHP advises agencies to consult with tribes as early in the planning process as possible. Consultation with Indian tribes during the Section 106 process requires more than simply notifying an Indian tribe about a planned undertaking. The ACHP guidance cites a combination of modes of communication, including written correspondence, meetings, telephone conferences, site visits, and e-mails that should be utilized during consultation. Consultation is not only required when an undertaking occurs on tribal lands, but off tribal lands as well. The NHPA does not restrict tribal consultation to only tribal lands as there may be ancestral homelands of an Indian tribe or tribes located off of tribal lands, and those may contain historic properties of religious and cultural significance (ACHP 2008).

The Tribal Historic Preservation Officer (THPO), established by the tribe, serves as the historic preservation officer for tribal lands. The THPO may also serve, if decided by the tribal government, as the sole point of contact for federal undertakings off tribal lands.

### 2.1.8 NEPA and Tribal Consultation

Consultation with Native American tribal groups can be involved and may require considerably more planning and allowance for time to complete. While NAGPRA has its own specific requirements for consultation and notification, AIRFA and the Sacred Sites EO 13007 do not. Properties of traditional significance to Native Americans such as plant gathering areas, traditional hunting or fishing areas, or other resource gathering areas should be addressed as part of coordination and consultation under NEPA by specifically addressing those issues during the NEPA document preparation. In order to obtain points of contact for recognized tribal groups, IAAAP should not only utilize the list of regionally culturally affiliated tribal groups provided by the NAGPRA Section 5 inventory, but should consider other tribal groups who may have had a historic association with the area of IAAAP. All coordination and consultation should be conducted according to the Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments, dated April 29, 1994.

Appropriately, consultation on issues of importance to Native American tribal groups should be initiated with a letter asking their concerns with the management of the types of resources covered by NAGPRA, Sacred Sites, NHPA, and ARPA. The letter should be followed with a telephone contact to the identified tribal point of contact and, if necessary, a visit to tribal headquarters by the IAAAP Commander. While tribal groups may not be willing to readily identify areas where burials have occurred, where sacred sites are located, or where traditional properties are located, consultation can provide IAAAP with enough baseline information to indicate major areas of concern and where issues will be of critical importance in accomplishing a project in a timely manner. It is possible to use the NEPA public involvement process to address some concerns of importance to Native American tribal groups but it is not the most acceptable approach.

Consultation on permits issued for ARPA relates to several areas of legal authority. The regulations for issuing permits note a specific requirement to notify Native American tribal groups regarding potential impacts to properties of significance to them, requires coordination with Section 106 when the permit could impact properties eligible for, or listed on, the NRHP, and requires an appropriate NEPA document be prepared. While not explicitly stated, it is also appropriate that public involvement be undertaken, consisting of notifying regionally recognized archeological groups regarding the permit’s scope and purpose.

### 2.1.9 Compliance with Other Mandates

To ensure compliance with AIRFA, EO 13007, and the 1994 Presidential Memorandum concerning the distribution of eagle feathers for Native American religious purposes, the CRM shall maintain communication with appropriate Federally recognized tribes and shall consult with tribal leaders as appropriate. No specific time frames or notifications are associated with the mandates.

## 2.2 GENERAL PROCEDURES FOR INSTALLATION COORDINATION OF CULTURAL RESOURCES

As outlined in Section 3.4.2 of this ICRMP, dig notices are submitted to the CRM for every activity that will disturb soils. Modification requests are submitted to the RPAO for modification to facilities (buildings and structures). Non-routine undertakings such as new constructions (buildings or roads), demolitions, and relocations of buildings, are reviewed for possible adverse effects to cultural resources. The following discussion will reiterate the current process utilized by IAAAP for initiating and completing projects, and then will discuss where along this process the CRM (as well as those who initiate projects) needs to address cultural resource issues.

Installation organizational elements (such as Engineers, Maintenance, Shops, Utilities, Contracting, Land/Natural Resources Manager, Real Property, Security, Public Affairs, Tenants, and other parties identified by the Commanding Officer) must coordinate with the CRM early in the planning of projects for the following purposes:

* Determine if an undertaking or possibility for impacts to cultural resources exists;
* Determine the area of potential effect and the resource types affected;
* Determine applicable laws and regulatory requirements;
* Ascertain if existing information is sufficient to make a determination;
* Coordinate agency, public, and Native American consultation as appropriate; and
* Complete any additional studies or consultation needed.
* Make appropriate determinations of impact or effect and coordinate results.

The contractor-operator at IAAAP has the overall responsibility for installation operations under a “facilities use” contract. However, since IAAAP is a government-owned facility, responsibility for the whole of IAAAP ultimately rests with the Army.

Ongoing and routine undertakings at IAAAP are reviewed for possible adverse effects to cultural resources via Dig Notices, Modifications Requests, and Land Use Controls. These undertakings include but are not limited to repair and maintenance of buildings, structures, and roads, landscape maintenance, and military mission undertakings.

Non-routine undertakings such as new construction (buildings or roads), demolitions, and relocations of buildings, are also reviewed for possible adverse effects to cultural resources through Dig Notices, Modifications Requests, and Land Use Controls.

Currently, 957 buildings and structures at IAAAP are assigned the code ELPA (eligible for the purposes of a program alternative) as the result of two 2006 Program Comments between the DOD and ACHP. The program comments provide mitigation for eligible ammunition storage and production facilities and plants. Under the program comments, the DOD and Army have met Section 106 responsibilities regarding effects of the following management actions on World War II and Cold War Era ammunition storage facilities and ammunition production facilities and plants that may be eligible for National Register listing:

* Ongoing Operations;
* Maintenance and Repair;
* Rehabilitation;
* Renovation;
* Mothballing;
* Cessation of Maintenance;
* New Construction;
* Demolition;
* Deconstruction and Salvage;
* Remediation Activities; and/or
* Transfer, Sale, Lease, or Closure of such facilities.

As of 2013, cultural resources procedures consisted of review of Dig Notices, Modifications Requests, and Land Use Controls. Additionally, the CRM manages tillage procedures within the Agricultural/Grazing Outlease Program to avoid impacts to possible intact archeological features below the current plow zone.

Cultural resource considerations are formally integrated into IAAAP’s mission processes through Dig Notices, Modifications Requests, and Land Use Controls. All projects considered undertakings, as defined by 36 CFR Part 800 of the NHPA, and that have the potential to effect historic properties should be submitted to the SHPO for review and comment as part of the NHPA’s requirement that Federal agencies take historic properties into account in their projects. Programmatic Agreements (PA) can be developed to streamline review of routine projects. If adverse impacts to a resource of undetermined eligibility cannot be avoided, then the CRM should consult in advance with the Iowa SHPO and arrange to have additional survey (such as archeological site testing) conducted to assess the significance of the resource, the results of which are also coordinated with the Iowa SHPO.

For other types of cultural resources (such as NAGPRA sites, TCPs, and sacred sites) the CRM must initiate consultations with appropriate Native American tribes to determine the presence, if any, of these properties. Descriptions of these types of properties, and identification, evaluation and consultation procedures are detailed in Section 2.1.5 of this ICRMP. Generally, these procedures should be considered as early as possible in the planning stages of an undertaking.

## 2.3 STANDARD OPERATING PROCEDURES

*This section contains detailed procedures that are designed to ensure regular and systematic compliance with cultural resource laws and regulations.*

Each of the following SOPs is a set of rules that outlines responsibilities and identifies specific actions the Army must take to ensure compliance with one or more Federal laws or regulations. Each SOP is triggered by a specific kind of proposed undertaking (for example, the proposed re-roofing of a building), an occurrence (such as the discovery of human bones in a backhoe trench), or a compliance goal (for example, completion of the mandated inventory). Topics for the SOPs include the following:

1. Project coordination with the CRM and the Section 106 process;
2. The maintenance, repair, alteration, and demolition of existing buildings;
3. The construction of new buildings;
4. Ground-disturbing undertakings; and
5. Emergency discovery of archeological deposits.
6. Prevention of vandalism to cultural resources
7. Treatment of human remains and funerary or sacred objects
8. Identification and nomination of eligible properties for the NRHP
9. Review and monitoring of compliance

Each SOP is targeted at ensuring compliance with a specific law or regulation. For example, SOP No. 6 is designed to ensure compliance with the Archeological Resource Protection Act, and SOP No. 7 is designed to ensure compliance with NAGPRA. Table 2.1 cross-links the SOPs to specific laws and regulations. Because the NHPA is a key and complex cultural resource protection law, full compliance with it is accomplished by means of four separate procedures (SOPs No. 1 through 5). Broadly, each SOP treats different classes of cultural resources. For example, historic buildings are treated by SOPs No. 2 and 3, while archeological sites are treated mainly by SOPs No. 4, 5, and 6. As an organizational aid, Table 2.2 cross-links the SOPs to several classes of cultural resources. The CRM is not always qualified under the Secretary of the Interior’s Standards for Professional Qualifications to carry out some of the duties specified in the following SOPs. In these cases, qualified personnel will be hired on a contract basis to fulfill any duties necessary for compliance.

Table 2.1 Standard Operating Procedures, Keyed to Laws and Regulations

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Law or Regulation1 | | | | | |
| Operating Procedure | Subject | NHPA | NEPA | ARPA | AIRFA | NAGPRA | AR 200-1 |
| SOP No. 1 | CRM Staffing & Coordination | ● | ● | ● | ● | ● | ● |
| SOP No. 2 | Historic buildings | ● | ● |  |  |  | ● |
| SOP No. 3 | New construction | ● | ● |  |  |  | ● |
| SOP No. 4 | Ground disturbance | ● | ● |  |  | ● | ● |
| SOP No. 5 | Emergency discovery | ● | ● |  |  | ● | ● |
| SOP No. 6 | Preventing vandalism | ○ |  | ● | ○ |  | ● |
| SOP No. 7 | NAGPRA compliance |  |  |  | ○ | ● | ● |
| SOP No. 8 | Inventorying properties | ● |  |  |  |  | ● |
| SOP No. 9 | Compliance reporting | ● | ● | ● | ○ | ● | ● |
| 1 ● = Primary importance  ○ = Secondary importance | | | | | | | |

Table 2.2 Standard Operating Procedures, Keyed to Type of Cultural Resources

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | Type of Cultural Resource1 | | | | | |
| Operating Procedure | Subject | Historic Buildings and Structures | Historic Districts | Known Archeo-logical Sites | Unknown Archeo-logical Sites | Human Remains | Sacred Objects and Sites |
| SOP No. 1 | CRM Staffing & Coordination | ● | ● | ● | ● | ● | ● |
| SOP No. 2 | Historic buildings | ● | ● |  |  |  |  |
| SOP No. 3 | New construction |  | ● |  | ○ |  |  |
| SOP No. 4 | Ground disturbance | ○ | ○ | ● | ● | ● | ● |
| SOP No. 5 | Emergency discovery |  |  |  | ● | ● | ● |
| SOP No. 6 | Preventing vandalism |  |  | ● |  | ● | ● |
| SOP No. 7 | NAGPRA compliance |  |  | ○ | ○ | ● | ● |
| SOP No. 8 | Inventorying properties | ● | ● | ● | ● |  |  |
| SOP No. 9 | Compliance reporting | ● | ● | ● | ● | ● | ● |
| 1 ● = Primary importance  ○ = Secondary importance | | | | | | | |

Each SOP is prefaced by an introduction, applicable laws and regulations, and a policy statement. The procedures are presented in an “if-then” outline format and are accompanied by a flow chart that summarizes the decision process involved in compliance.

Although staff may change, these are the positions currently considered key to maintaining a working knowledge of the SOPs:

* Joseph Haffner, Natural and Cultural Resources Manager,
* Leon Baxter, Chief of Operation Support, and
* Julie Solinski, Chief, Contract Administration.

Public involvement is an important component of many of the SOPs. Please refer to Section 2.1.6 for further guidance on coordinating public involvement.

**STANDARD OPERATING PROCEDURE No. 1:**

***Internal Cultural Resource Management Program Staffing and Coordination Procedures***

The cultural resources management program employs specific methods, techniques, policies, plans, and practices to meet its responsibilities in order to manage the cultural resources at IAAAP. The CRM is the individual, appointed by IAAAP’s commander, who must address all cultural resource issues and maintain IAAAP’s compliance with federal and state regulations. In the event or in the potential event that cultural resources are, have been, or may be affected at IAAAP or at other locations as a result of IAAAP activity, it is critical that the CRM is contacted immediately. This SOP provides the necessary information in which to contact IAAAP’s CRM.

Applicable Laws/Regulations

* National Historic Preservation Act
* National Environmental Policy Act
* Army Regulation 200-1

Policy

Any activity where cultural resources are, have been, or may be affected at IAAAP or off-base as a result of IAAAP activity, must have project consultation with the IAAAP CRM. Cultural resources include archeological sites, historic buildings or structures, or historic objects. Cultural resources often are not obvious at first glance, and typically require some level of investigative survey. Affects to a cultural resource may result from earthmoving activities, maintenance to properties, structures, or buildings, or alteration to the natural landscape and/or the structures or buildings located at IAAAP or those areas off-base that are used for activities conducted by IAAAP personnel. Any undertaking has the potential to affect cultural resources, and therefore must be coordinated with the IAAAP CRM prior to implementation.

Procedures

In any circumstance where an event has or will affect cultural resources, the IAAAP CRM and this ICRMP must be consulted as early as possible to:

1. help identify the appropriate SOP that applies to the given situation, and
2. provide the necessary assistance to the IAAAP personnel that must follow the guidance described in the appropriate SOP.

It is critical that the IAAAP CRM has the opportunity to proactively review the potential impacts to the cultural resources that are located on IAAAP and in the locations where off-base activity takes place. Figure 2.1 outlines the procedure that applies to contacting the IAAAP CRM. It is the responsibility of the CRM to implement the Federal and State laws and regulations as they apply to cultural resources at IAAAP. Prior to acquiring, constructing, or leasing buildings or properties for purposes of carrying out agency responsibilities or conducting regular Army activity both on-base and off-base, the CRM must be afforded the opportunity to conduct a project review. At this point the CRM must determine if the Section 106 process (as defined by the NHPA) must be initiated in order to ensure IAAAP is in compliance with federal and state regulations. Figure 2.2 outlines the Section 106 process. For more information on Section 106 regulations, see <http://www.achp.gov/work106.html>.

Figure 2.1 Standard Operating Procedure #1, Internal Cultural Resource Management Staffing and Coordination Procedures

Information regarding the location, character, or ownership of historic resources withheld pursuant to National Historic Preservation Act, Section 304, and Advisory Council on Historic Preservation regulations at 10 CFR 800.11(c).

Figure 2.2 Standard Operating Procedure #1, the Section 106 Process



**STANDARD OPERATING PROCEDURE No. 2:**

***Assessing the Effects of and Mitigating Adverse Effects Resulting from the Maintenance, Repair, Alteration, and Demolition of Historic Buildings or Their Leasing/Licensing***

The maintenance, alteration, renovation, and demolition of buildings can result in adverse effects to historic properties. Reducing or withdrawing maintenance from a historic building is considered an adverse effect, and the leasing and licensing of historic buildings may cause an adverse effect due to changed management procedures. In compliance with Section 106 of the NHPA and its implementing regulations, this SOP specifies procedures to implement in planning such undertakings. It should be noted that this SOP is applicable only to NRHP-eligible or listed properties and that alterations to uninventoried areas and evaluated properties need to follow SOP #8. Figure 2.3 summarizes the compliance process.

Applicable Laws/Regulations

* National Historic Preservation Act
* National Environmental Policy Act
* Army Regulation 200-1

Policy

* The avoidance of adverse effects to NRHP-eligible historic buildings at IAAAP shall be proactively incorporated into the design and planning process.
* Nearly all facilities at IAAAP have been assigned a code associated with NRHP eligibility per the 2006 Program Comments (see Appendix G). Facilities will be treated as coded unless these agreements are replaced by future programmatic agreements or program comments.
* All buildings and structures listed on or considered potentially eligible for inclusion on the NRHP shall receive priority and regular maintenance to prevent deterioration through neglect.
* Maintenance, repair, alterations, and demolition of historic buildings must comply with the Secretary of the Interior’s standards and guidelines for building rehabilitation.
* The procedures covered herein apply to both in-house work and contracted work.

Procedure

Before proceeding to Step I listed below, the IAAAP CRM must first determine if the proposed action is an undertaking, and also specify the “area off potential effect” (APE). As defined by the NHPA, an undertaking is a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including:

1. Those carried out by or on behalf of an agency;
2. Those carried out with federal financial assistance;
3. Those requiring a federal permit, license, or approval; and
4. Those subject to state or local regulation administered pursuant to a delegation or approval by a federal agency.

It should be noted that for an undertaking the Army does not need to know with certainty that NRHP properties are present or will be modified as a result of the planned action. Additionally, an undertaking is only considered further for purposes of Section 106 when NRHP-eligible or listed property(ies) is/are present, or if existing information is not sufficient to confirm the presence/absence of NRHP properties. If the action is determined to be an undertaking, the IAAAP CRM must then determine the APE. The APE is defined in 36 CFR 800 as “the geographic area or areas within which the undertaking may cause changes in the character of or use of historic properties, if any such properties exist.” It is important to remember that the APE is defined before the identification of NRHP properties itself begins, so it may not be known whether any historic properties actually exist there.

Important issues to remember regarding the APE are listed below:

1. The APE is defined before the identification of historic properties;
2. The APE is not based on land ownership and, thus, is not necessarily confined to the installation;
3. All alternative locations under consideration for the project must be included;
4. All locations from which the project may be visible and where there might be changes in traffic patterns, land use, or public access must be included;
5. The APE may not be the same area of effect as defined under NEPA;
6. The APE may not be a single area and may not have hard and fast boundaries; and
7. The definition of the APE does not dictate what the Army must do to identify, avoid, or mitigate effects within it.

All planned undertakings which may result in adverse effects to historic buildings, including plans, specifications, and work orders for maintenance, repair, alterations, and demolition to any building or structure, shall be reviewed by a contracted, qualified professional.

1. If the proposed undertaking is listed as of no effect, according to procedures given in 36 CFR 800, then the CRM will consult with the SHPO and the undertaking may proceed. Otherwise, Section 106 compliance steps should continue as defined in 36 CFR 800.
2. If the undertaking’s effect is unknown, then the CRM will consult maps, lists, and other records as appropriate to determine the NRHP eligibility status of the property that may be affected.
3. If the affected property is a WW II-era temporary building, then the CRM may allow proposed demolition to proceed without further action. However, if the temporary building is within an identified district, the undertaking should be reviewed by the SHPO.
4. If the building or structure has not been evaluated as to eligibility for inclusion on the NRHP, then the CRM shall ensure that an evaluation is completed by qualified personnel. Further planning of the undertaking may proceed with the understanding that the determination of eligibility may require design changes or Section 106 consultation.
5. If the building or structure has been evaluated as not eligible for inclusion on the NRHP, and if the SHPO has previously concurred with this determination, then the CRM may allow the action to proceed without further action.
6. If the building has been evaluated as eligible for inclusion on the NRHP, either individually or as a member of an identified district, the following management standards are applicable.
7. Maintenance operations and materials must be sympathetic to the historic fabric of the structure.
8. Repairs should be made with materials of like kind (i.e., color, texture, hardness, style) that do not detract from the historic integrity of the building or structure.
9. Alterations shall follow the Secretary of the Interior’s standards and guidelines for building rehabilitation and should adhere to the following.
10. Massing shall be of similar setbacks and rhythm of the original building or structure.
11. Volume shall be consistent with the original building or structure.
12. Profiles and facade setbacks shall be complementary to the original building or structure.
13. Windows and doors shall be of similar openings and style to that of the original.
14. Materials and units assemblies shall be of similar color, texture, and style to those utilized in the original.
15. Demolition of some NRHP-eligible or listed historic buildings or structures may require the preparation of an MOA between IAAAP, the SHPO, and the ACHP, as specified under III-B below.
16. If the adverse effect of any undertaking on a historic building or structure cannot be avoided through the above procedures, the Army shall implement one of the following alternative actions, depending on the urgency of the undertaking.
    * 1. The Army may redesign the project to avoid adverse effect.
      2. The Army may proceed with a mitigation plan.
         1. The Army shall develop an MOA with the SHPO, specifying the scope and level of effort required to mitigate the adverse impact of the project on the property in question. One possible mitigation measure will be recordation of the property to HABS/ Historic American Engineering Record (HAER) standards.
         2. Mitigation plans shall take into account cost and mission requirements and shall be based on a balancing of economics and public interest.
      3. The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of both the SHPO and the ACHP. If the SHPO indicates that the property is significant and the effects of the undertaking on the property are serious, then the Army shall make reasonable efforts to minimize harm to the property until the Section 106 process is completed.
17. Any leasing/licensing of historic buildings must follow the same guidelines outlined above. The lessee/licensee will notify the CRM of any proposed rehabilitation or structural alteration to historic properties or to the landscape/landscape features and will provide a detailed description of the undertaking prior to any rehabilitations/alterations. Within 30 days of receipt of such notification and adequate supporting documentation, the CRM will notify the Lessee/Licensee in writing that the undertaking conforms to the Standards and that the Lessee/Licensee may proceed or that the undertaking does not conform to the Standards and that the Lessee/Licensee may not proceed. If the CRM determines that the undertaking does not meet the Standards, the CRM will, with the assistance of the Lessee/Licensee, fulfill the requirements of Section 106 of the National Historic Preservation Act and its implementing regulation, Protection of Historic Properties (36 CFR Part 800). The Lessee/Licensee will not undertake the proposed action until the CRM notifies the Lessee that the requirements of Section 106 have been fulfilled and the Lessee may proceed. If the CRM objects to the Lessee’s/Licensee’s proposed undertaking, the CRM will notify the Lessee/Licensee that the proposed action may not proceed.
18. IAAAP proactively protects and preserves NRHP-eligible historic buildings and structures. The CRM periodically inspects the condition of all NRHP eligible buildings and structures to monitor the compliance of undertakings and to ensure that deterioration through neglect has not adversely affected the properties. Non-compliance and deterioration will be documented in writing and photographically.

Figure 2.3 Standard Operating Procedure #2, Planned Maintenance, Repair, Alteration, Demolition, or Leasing/Licensing Undertaking



**STANDARD OPERATING PROCEDURE No. 3:**

***Assessing the Effects of and Mitigating Adverse Effects Resulting from the Construction of New Buildings***

The construction of new buildings can have adverse effects on historic properties through the disturbance of buried archeological deposits or by intrusive visual impacts to historic buildings and structures, if any exist in the area of the proposed impacts. Impacts to archeological resources may be caused by construction and earth-moving activities, which would impact the integrity of the site and diminish its data capabilities. The construction of a building or structure which uses architectural or engineering elements that are not compatible with nearby historic properties would impact the integrity, character, and/or feeling of an historic property by introducing negative elements. This SOP outlines procedures to be used to ensure compliance with Section 106 of the NHPA and its implementing regulations. Figure 2.4 summarizes the compliance process.

Applicable Laws/Regulations

* National Historic Preservation Act
* National Environmental Policy Act
* Army Regulation 200-1

Policy

* The avoidance of adverse effects to possibly identified districts at IAAAP shall be proactively incorporated into the design and planning process.
* New construction within the boundaries of historic districts shall complement the style, character, and feeling of those aspects of the district that determine its eligibility.
* The procedures covered herein apply to both in-house work and contracted work.

Procedure

All planned, new permanent construction shall be reviewed by the IAAAP CRM for possible adverse effects to historic properties, including preliminary plans, architectural drawings, and specifications. The CRM shall review plans to determine whether the proposed new construction is within a historic district. To ensure compliance with Section 106 of the NHPA, the CRM shall consult with the Iowa SHPO regarding the proposed undertaking.

1. If the new construction is not within a historic district and the new construction will not disturb the ground surface (including foundations, gas and water pipes, and utility lines), then the CRM will consult with the SHPO and the undertaking may proceed.
2. If the new construction is not within a historic district, but the new construction will disturb the ground surface, then the CRM shall implement SOP #4.
3. If the new construction is within a historic district, the CRM shall consult with appropriate staff, other planners, and the Iowa SHPO.
   1. If the character, style, materials, and feeling of the new construction is compatible with that of the historic district, or if the undertaking can be relocated so that it does not affect the viewshed of the historic district, then the CRM shall prepare a memorandum to file and the undertaking may proceed, subject to SOP #4.
   2. If the undertaking is not compatible with the historic district or if the undertaking cannot be relocated so it does not affect the viewshed of the historic district, then the CRM shall consult with Project Planners to determine whether the undertaking can be designed to complement the character, style, materials, and feeling of the contributing members of the historic district.
      * 1. If the undertaking can be designed to complement the historic district, then the CRM shall consult with the SHPO, and develop an MOA to mitigate any adverse effects.
        2. If the adverse effect on the historic district cannot be avoided through the above procedures, the Army shall implement one of the following alternative actions, depending on the urgency of the undertaking being planned.
           1. The Army may redesign the project to avoid adverse effect.
   3. The Army may proceed with a mitigation plan under an MOA with the SHPO. The MOA shall specify the procedures and parameters required to mitigate the adverse impact of the project.
   4. The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of both the SHPO and the ACHP. If the SHPO and the ACHP both indicate that the effects of the undertaking on the historic district are serious, then the Army shall make reasonable efforts to minimize adverse effect to the district until the Section 106 process is completed.

Figure 2.4 Standard Operating Procedure #3, Planned New Construction Undertaking

**STANDARD OPERATING PROCEDURE No. 4:**

***Assessing the Effects of and Mitigating Adverse Effects Resulting from Ground-Disturbing Undertakings***

Every undertaking that disturbs the ground surface has the potential to adversely affect known archeological deposits. In compliance with Section 106 of the NRHP, as well as NEPA, NAGPRA, AIRFA, ARPA, and AR 200-1, this SOP outlines the policies and procedures to be followed when planning such undertakings. Figure 2.5 summarizes the compliance process.

Applicable Laws/Regulations

* National Historic Preservation Act
* National Environmental Policy Act
* Native American Graves Protection and Repatriation Act
* Army Regulation 200-1
* American Indian Religious Freedom Act
* Archeological Resources Protection Act

Policy

* The avoidance or mitigation of adverse impacts to NRHP-eligible sites shall be proactively incorporated into the design and planning process, rather than deferred until archeological deposits may be discovered during actual construction.
* All machine-aided excavations or other earth-moving projects shall be designed to avoid damage to archeological sites or other historic properties that may be eligible for inclusion on the NRHP.
* Until such time as the SHPO has determined an archeological site to be ineligible, all known sites will be treated as potentially eligible for purposes of Section 106 and protected from impacts.

Procedure

All planned construction projects that may result in disturbance to the ground surface shall be reviewed by the CRM. To ensure compliance with Section 106 of the NHPA, as well as NEPA, NAGPRA, AIRFA, ARPA, and AR 200-1, the CRM shall consult with the Iowa SHPO regarding the proposed undertaking; otherwise, the following procedures should be followed.

1. If the proposed undertaking is listed as of no effect, then the CRM will consult with SHPO and the undertaking may proceed.
2. If the proposed undertaking’s effect is not known, then the CRM will consult maps to determine whether the Area of Potential Effect (APE) has been archeologically inventoried and accepted by SHPO.
   1. Appropriate documentation may be necessary depending on whether the undertaking is initiated internally by IAAAP or by external entities. Such documentation may include a Report of Availability (ROA), if initiated by external entities, with the signature of the Commanding Officer, NEPA documentation, Record of Environmental Consideration (REC), Environmental Assessment (EA), easement permits, Iowa SHPO coordination, and ACHP coordination (if NRHP eligibility pertains).
   2. If an archeological inventory has not been completed and accepted by the SHPO for the APE, the CRM shall ensure that an inventory is completed by professional archeologists and accepted by the SHPO, as provided in SOP #8. Further planning of the undertaking may proceed with the understanding that the discovery of eligible archeological sites may require Section 106 consultation.
   3. If an archeological inventory has been completed and accepted by the SHPO for the APE, the CRM shall examine archeological maps and records to determine whether the undertaking will affect a known archeological site.
      1. If no archeological site has been recorded within the APE, or if all archeological sites which may be affected by the undertaking have been determined by the SHPO to be ineligible for inclusion on the NRHP, then the CRM may allow the excavation to proceed without further action, except as provided for under SOP #5.
      2. If, in the opinion of either the Army or the SHPO, the existing information for any site is deemed insufficient to make a determination of eligibility, then the Army, in coordination with the SHPO, will develop a testing plan. Excavation and other disturbance in the vicinity of the site will be suspended until an agreed testing procedure has been carried out and sufficient data have been gathered to allow a determination of eligibility.
      3. If any archeological sites that may be affected by the undertaking have been determined by the SHPO to be eligible for inclusion on the NRHP, then the CRM shall coordinate with appropriate entities, to determine if the undertaking can be redesigned to avoid adverse impact to historic properties.
         * 1. If the undertaking can be redesigned to avoid adverse impacts, the CRM may allow the undertaking to proceed after consultation with SHPO and as provided for under SOP #5.
           2. If the undertaking cannot be redesigned, the Army shall implement one of the following alternative actions, depending on the urgency of the undertaking being planned.

The Army may relocate the project to avoid adverse effect. New locations shall also be inventoried and tested for eligible properties under SOP #4.

The Army may proceed with a data recovery plan in consultation with the SHPO, which may be in the form of an MOA or MOU. The agreement shall specify the scope and level of effort of data recovery required to mitigate the adverse impact of the project on the site in question.

The Army may proceed with a data recovery plan without negotiating an MOA when data recovery is expected to be limited, straightforward and amenable to informal coordination among the Army, the SHPO, and the Principal Investigator responsible for the data recovery effort.

* + - * 1. The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of both the SHPO and the ACHP. If the SHPO and the ACHP both indicate that the property is significant and the effects of the undertaking on the property are serious, then the Army shall make reasonable efforts to minimize harm to the property until the Section 106 process is completed.

When the recovery of Native American human remains or funerary objects is deemed likely, the Army may initiate excavation in compliance with NAGPRA under SOP #7, with the understanding that not all human remains, cemeteries, etc., are NRHP properties. Such excavations shall be coordinated with the SHPO and with interested Native American tribal groups if Native American remains are found.

Figure 2.5 Standard Operating Procedure #4, Planned Ground-Disturbing Undertaking



**STANDARD OPERATING PROCEDURE No. 5:**

***Responding to the Emergency Discovery of Archeological Deposits***

Regardless of whether or not a surface inventory has been completed, and regardless of whether or not a planned undertaking has been assessed for its effect on known historic properties, every undertaking that disturbs the ground surface has the potential for the discovery of buried and previously unknown archeological deposits. This SOP outlines the policies and procedures to be followed in such cases. Figure 2.6 summarizes the compliance process.

Applicable Laws/Regulations

* National Historic Preservation Act
* National Environmental Policy Act
* Native American Graves Protection and Repatriation Act
* Army Regulation 200-1

Policy

* Archeological deposits that are newly discovered during the construction of any undertaking shall be evaluated for their NRHP eligibility.
* Until the SHPO has concurred with IAAAP’s determination that an archeological site is ineligible, all known sites will be treated as potentially eligible for the purposes of Section 106 and protected from impacts.
* Nothing in Section 106 or other federal regulations requires the Army to stop work on an undertaking. However, if the SHPO indicates that the property is significant and the effects of the undertaking on the property are serious, then the Army shall make reasonable efforts to minimize harm to the property until the Section 106 process is completed.

Procedure

When notified of the possible discovery of unexpected buried sites, the CRM will either contact the SHPO for a site visit to determine if the remains are cultural, or arrange to have a professional archeologist visit the excavation as soon as possible to evaluate the recovered material and any *in situ* deposits.

1. If fossils, natural stones, or concretions, or other such items that are sometimes mistaken for archeological materials are recovered, then the CRM may allow the excavation to proceed without further action.
2. If, upon examination, the recovered materials are clearly of human origin, the CRM must protect the site and contact the SHPO. A qualified archeologist must make a field evaluation of the primary context of the deposit and its probable age and significance, record the findings in writing, and document the materials with photographs and drawings as warranted.
3. If disturbances to the deposit have been slight and the excavation can be relocated to avoid the buried site, the CRM shall file site forms with the SHPO in a routine manner, having avoided adverse impact through relocation of the excavation.
4. If the excavation cannot be relocated, the CRM shall telephone the office of the SHPO to report the discovery and initiate emergency consultation.
5. If both the SHPO (or SHPO’s representative) and the Army concur that the deposits are ineligible for inclusion on the NRHP, then the Army will prepare a memorandum for record to be included in the site record. The Army may allow the excavation to proceed and shall advise the excavation foreperson(s) of the possibility of additional discoveries, which would require immediate notification of the CRM.
6. If, in the opinion of either the Army or the SHPO, the existing information is deemed insufficient to make a determination of eligibility, then an emergency survey plan will be developed by the Army in coordination with the SHPO. Further excavation in the vicinity of the site will be suspended until an agreed testing procedure has been carried out and sufficient data have been gathered to allow a determination of eligibility.
   1. If the SHPO and the Army agree after testing that the site is ineligible for inclusion on the NRHP, then work on the project may resume.
   2. If the site appears to be eligible for inclusion on the NRHP, or if the Army and the SHPO cannot agree on the question of eligibility, then the Army shall implement the following alternative actions, depending on the urgency of the action being delayed by the discovery of cultural material.
7. The Army may relocate the project to avoid adverse effect.
8. The Army may proceed with a data recovery plan under an MOA with the ACHP and the SHPO. The MOA shall specify the scope and level of effort of data recovery required to mitigate the adverse impact of the project on the site in question.
9. The Army may request comments from the ACHP and may develop and implement actions that take into account the effects of the undertaking and the comments of both the SHPO and the ACHP. Interim comments must be provided to the Army within 48 hours and final comments within 30 days.
10. If at any time human remains, funerary objects, or Native American sacred objects are discovered, the CRM will ensure that the provisions of SOP #7 are implemented.

Figure 2.6 Standard Operating Procedure #5, Unanticipated Discovery of Archeological Deposit



**STANDARD OPERATING PROCEDURE No. 6:**

***ARPA Compliance and Preventing Vandalism to Archeological Sites***

The Archeological Resource Protection Act of 1979 makes it a felony for persons to excavate, remove, damage, or otherwise deface any archeological resources or paleontological remains located on federal lands. Exceptions to this law require a specific federal permit. The USACE issues permits for ARPA-related work on military-controlled lands. This SOP implements the law and the implementing regulations issued by the DOD (32 CFR Part 229). Figure 2.7 summarizes the compliance process.

Applicable Laws/Regulations

* Archeological Resource Protection Act
* Army Regulation 200-1

Policy

* The excavation or removal of archeological artifacts or paleontological remains (if found in an archeological context) is prohibited, except as conducted under a valid permit (such as mitigation program conducted under the supervision of a professional archeologist).
* The Post Provost Marshall will vigorously enforce the law prohibiting vandalism of archeological sites.
* The CRM will proactively preserve and protect all known archeological sites.

Procedure

1. An ARPA permit is not required for excavation, survey, etc., in direct support of mission requirements or for activities that are conducted exclusively for purposes other than the excavation and/or removal of archeological or paleontological remains (if found in an archeological context) (e.g., excavation of a building foundation), even when such activities may result in the disturbance of such remains. However, in such cases, IAAAP must comply with the requirements for Section 106 consultation.
2. Applications for ARPA permits must be submitted to IAAAP CRM.
   1. Applications must include a clearly written proposal that documents the information required under 32 CFR 229.6 and 32 CFR 229.8. Applicants must be in accordance with Engineer Regulation (ER) 405-1-12 and AR 405-80. IAAAP must prepare a Report of Availability (ROA) with the signature of the Commanding Officer. Included must be appropriate attachments (NEPA documentation, [Record of Environmental Consideration (REC), Environmental Assessment (EA), EIS], preliminary assessment screening [PAS], hold harmless agreement, Iowa SHPO coordination, and ACHP coordination [if NRHP eligibility pertains]).
   2. Applications will be forwarded to the Rock Island District, USACE. Technical review of the application must be conducted by a qualified archeologist appointed by the District Commander. The District Real Estate Office is responsible for coordination and issuance of permits. Copies of approved permits will be provided to the IAAAP CRM.
   3. A permit may be denied for reasons of technical inadequacy or incompatibility with military programs.
3. The applicant must be advised of the reason for the denial.
4. If the denial is for technical reasons, the applicant must be advised of their right to resubmit the application.
   1. The CRM shall monitor work conducted under ARPA permits to ensure compliance with the terms of the permit.
      * 1. A permit may be revoked if it is determined:
           1. The applicant has not complied with the terms of the permit;
           2. The applicant has misrepresented the work to be accomplished;
           3. Continuance of the work is a hazard to public health or safety; or
           4. Continuation of the work impairs any military function.
        2. Appeals will be forwarded to the Commander for review by the CRM. The Determination of Appeal will be signed by the Commander.
5. IAAAP shall proactively protect and preserve archeological sites.
   1. The CRM will periodically monitor the condition of known archeological sites for evidence of vandalism.
      * 1. ARPA violations will be reported to the Post Provost Marshall for investigation and prosecution.
6. The activities, status, and results of all compliance actions taken under this SOP will be reported annually as outlined in SOP #9.

Figure 2.7 Standard Operating Procedure #6, Proposed Archeological Activity

**STANDARD OPERATING PROCEDURE No. 7:**

***Treating Human Remains and Funerary/Sacred Objects***

The Native American Graves Protection and Repatriation Act requires the inventory of human remains and funerary and sacred objects recovered from federal lands which may be subject to claim by Native American tribal groups and the active consultation with such groups to determine the disposition of such remains and objects. No such remains or objects from IAAAP are currently known to exist. This SOP outlines the policies and procedures to be followed to ensure future compliance. Figure 2.8 summarizes the compliance process.

Applicable Laws/Regulations

* Native American Graves Protection and Repatriation Act
* American Indian Religious Freedom Act
* Army Regulation 200-1

Policy

* No Native American human remains, funerary objects, or sacred objects from IAAAP will be knowingly kept in government possession without initiating preparation of an inventory and initiating consultation.
* Consultation regarding the disposition of Native American human remains, funerary objects, or sacred objects shall be initiated as soon as feasible.

Procedure

The CRM will review, in advance, all archeological permits, research designs, and scopes of work to ensure that archeological investigations at IAAAP comply with NAGPRA requirements and the implementing regulations (43 CFR Part 10).

1. The CRM will review all records to determine whether any human remains, funerary objects, or sacred objects originating from IAAAP are known to exist.
   1. If no such objects are found, no consultation is required.
   2. If all such objects have been inventoried and appropriate consultation has been initiated by IAAAP or its agent, then no further action is necessary.
   3. If any such objects are known to be uninventoried, the CRM will prepare an inventory of all such objects and will initiate consultation procedures with the appropriate Native American groups (see Appendix B) and with any other tribes as may be recognized under NAGPRA definitions. Information on additional tribes that may be recognized in the future is available from the Archeological Assistance Division, NPS, Box 37127, Washington, D.C., 20013; telephone (202) 343-4101; facsimile (202) 523-1547.
2. If human remains or artifacts not currently in government possession, but suspected to be from IAAAP are returned to the government, the CRM will arrange to have a professional archeologist examine and evaluate them.
   1. If the remains are not of human origin, then no further action by the CRM is necessary.
   2. If the remains are not of Native American origin, then they will be treated as stipulated under SOP #5.
   3. If the remains are of Native American origin, then the CRM will prepare an inventory of the remains and initiate consultation procedures with the appropriate Native American tribes (see Appendix B), and with other tribes as may be recognized under NAGPRA definitions.
3. If human remains are discovered during the course of any undertaking, the following procedures will apply.
4. Work will immediately cease in the vicinity of the human remains.
5. The site supervisor will immediately notify the Post Provost Marshall and the CRM.
   * + 1. If the Post Provost Marshall, or his operative, determines that the remains are of recent origin, then no further action by the CRM is necessary.
       2. If the remains are not recent, the CRM will arrange to have a professional archeologist visit the site in a timely manner to examine and evaluate the recovered material.
          1. If the remains are not of human origin, then no further action is necessary by the CRM and the undertaking may proceed.
          2. If the remains are not of Native American origin, then the site will be treated as stipulated under SOP #4 and #5; not all human remains, cemeteries, etc., however, are NRHP properties.
          3. If the remains are of Native American origin, then further work in the vicinity will be suspended for 30 days to allow for consultation, as required by NAGPRA. If any photographs are taken of the undertaking, only general photographs of the site area are to be taken. Prior to removal of any remains, the CRM will prepare an inventory of the remains and will immediately initiate emergency consultation procedures with the appropriate Native American tribes (see Appendix B) and with other tribes as may be recognized under NAGPRA definitions. Otherwise, the CRM will cause the site to be treated as stipulated under SOP #4.
     1. If consultation allows the remains to be removed, then the CRM will cause the remains to be treated and disposed of in accordance with the consultation.
     2. Notwithstanding the results of consultation, the CRM will cause the site to be treated as stipulated under SOP #4.

Figure 2.8 Standard Operating Procedure #7, Human Skeletal Remains, Funerary Objects, and Sacred Items

**STANDARD OPERATING PROCEDURE No. 8:**

***Inventorying and Identifying Historic Properties and Nominating These to the National Register of Historic Places***

Section 110 of the NHPA directs federal agencies to locate, inventory, and nominate all potentially eligible sites, buildings, districts, and objects under their control to the Secretary of the Interior for listing on the NRHP. Current HQDA policy, however, is to nominate only those historic properties that are exceptionally significant. This SOP implements the law and the regulations. Figure 2.9 summarizes the compliance process.

Applicable Laws/Regulations

* National Historic Preservation Act
* Army Regulation 200-1

Policy

* IAAAP will establish a program to inventory and evaluate historic properties that are potentially eligible for listing on the NRHP.
* All inventory, evaluation, and nomination activities shall be conducted by persons meeting the  
  Secretary of the Interior’s guidelines for professional qualifications (36 CFR 61).
* Exceptionally significant eligible historic properties will be nominated to the Keeper of the Register through the staffing procedures found in AR 200-1, as personnel and budgeting constraints permit.
* Policy on Nomination of Historic Properties to the National Register of Historic Places (AR 200-1 states: “Nominate to the NRHP only those properties that the Army plans to transfer out of Federal management through privatization efforts. Nominate other properties only when justifies by exceptional circumstances.”

Procedure

The CRM shall annually review the status of inventory, testing, and nomination, and shall develop priorities for these programs based on integration with Section 106 responsibilities and funding availability.

1. Archeological inventories shall be conducted under a research design and shall be designed as a good faith effort to locate all cultural resources.
2. The intensity and tactics of survey shall vary by landform and potential for intact buried deposits but, in every case, shall meet the standards stipulated by the Iowa State Historic Preservation Office.
3. In areas designated by this ICRMP as previously disturbed having Unexploded ordnance (UXO) or buried hazardous waste, or in other areas so designated by documents on file at IAAAP, no subsurface testing is indicated, except as may be agreed upon during consultation with the CRM and the SHPO.
4. Shovel tests shall be 30 centimeters in diameter and shall be dug to culturally sterile soils or a minimum of 50 centimeters below ground surface. All soil shall be screened through mesh no larger than 1/4 inch. Archeological inventories shall be professionally documented.
5. All tests will be documented and plotted on maps.
6. All sites will be documented, photographed, and plotted on maps using forms that meet or exceed the data content required by the Iowa SHPO.
7. Trinomial site numbers shall be obtained from Site Records Coordinator at the Office of the State Archeologist, Iowa City, Iowa.
8. Copies of completed site forms and other primary documentation shall be submitted to the SHPO.
9. All surface collections and subsurface artifacts, historic and prehistoric recovered from testing will be collected for analysis and curation.
10. A technical report conforming to the Secretary of the Interior’s standards and guidelines and to those of the Iowa State Historic Preservation Office will be prepared and submitted for SHPO review pursuant to SOP #9.
    * 1. Each archeological site shall be evaluated with regards to its eligibility for inclusion on the NRHP, according to the significance criteria outlined in Part 3 of this ICRMP.
         1. Sites that meet or exceed the significance standards will be recommended as eligible for inclusion.
         2. Sites that do not meet the significance standards will be recommended as ineligible for inclusion.
         3. Sites that cannot be fully evaluated because of insufficient information will be recommended for further investigation and eligibility testing.
11. Architectural inventories shall be designed to ensure collection of sufficient architectural and historical information with which to make a determination of eligibility for inclusion on the NRHP, according to the significance criteria outlined in Part 3 of this ICRMP.
12. Buildings and structures that meet or exceed the significance standards will be recommended as eligible for inclusion.
13. Buildings and structures that do not meet the significance standards will be recommended as ineligible for inclusion.
14. A technical report conforming to the Secretary of the Interior’s standards and guidelines will be prepared and submitted for SHPO review pursuant to SOP #9.
15. Cultural resources that are not fully evaluated at the conclusion of an inventory shall be further investigated to conclusively determine their eligibility. Archeological significance testing shall be conducted under a scientific research design and shall be designed to fully evaluate 100% of known sites.
16. Subsurface excavation shall be conducted to determine horizontal and vertical site boundaries, to assess integrity of deposits, and to recover a representative sample of cultural remains.
    * + 1. Mechanical excavations may be used to assess site stratigraphy and limits.
        2. Manual excavations shall be in arbitrary 10-centimeter levels, unless finer natural or cultural stratigraphy can be defined.
        3. Manually excavated fill shall be screened through mesh of 1/4 inch or less.
        4. All recovered artifacts will be collected for analysis and curation. As defined in Appendix A, an artifact is an object used or manufactured by humans.
        5. Photographs and drawn profiles of all excavation units and exposures shall be made in the field.
        6. In areas designated by this ICRMP as previously disturbed having UXO or buried hazardous waste, or in other areas so designated by documents on file at IAAAP, no subsurface testing is indicated, except as may be agreed upon during consultation with the CRM and the SHPO.
        7. When it can confidently be determined that the site is eligible for inclusion on the NRHP, further testing will cease.
17. Each archeological site shall be evaluated with regards to its eligibility for inclusion on the NRHP, according to the significance criteria outlined in Part 3 of this ICRMP.
    * + 1. Sites that meet or exceed the significance standards will be recommended as eligible for inclusion.
        2. Sites that do not meet the significance standards will be recommended as ineligible for inclusion.
18. A technical report conforming to the Secretary of the Interior’s standards and guidelines and to those of the Iowa State Historic Preservation Office will be prepared and submitted for SHPO review pursuant to SOP #9.
19. For each cultural resource inventoried and evaluated, the CRM shall seek the concurrence of the SHPO.
20. For each “significant” historic property recommended and concurred by SHPO as eligible for inclusion on the NRHP, the CRM will ensure that NRHP nomination forms are prepared and submitted to the Keeper of the Register through the staffing procedures found in AR 200-1.
21. Nominations will follow the guidelines and format requirements specified in National Register Bulletin 16A - *Guidelines for Completing National Register of Historic Places Nomination Forms* (USDI 1991).
22. All properties determined to be eligible for inclusion on the NRHP will be treated as if they are actually so listed, regardless of the status of the nomination procedure.

Figure 2.9 Standard Operating Procedure #8, Status of Cultural Resource Inventory and NRHP Nominations

**STANDARD OPERATING PROCEDURE No. 9:**

***Monitoring Cultural Resource Compliance Activities and Reporting Compliance Status***

Coordination and consultation with the Iowa SHPO and with others is a key aspect of Section 106 cultural resource compliance at IAAAP. Technical information regarding undertakings or cultural resources must be provided to the SHPO in a timely manner to prevent foreclosure of the SHPO opportunity to comment. Figure 2.10 summarizes the compliance process.

***Applicable Laws/Regulations***

* National Historic Preservation Act
* National Environmental Policy Act Archeological Resource Protection Act
* American Indian Religious Freedom Act
* Native American Graves Protection and Repatriation Act
* Executive Order 11593
* Army Regulation 200-1

***Policy***

* In requesting the SHPO consultation, IAAAP shall provide technical information regarding undertakings and cultural resources to the SHPO in a timely manner.
* The IAAAP CRM will routinely monitor the compliance of IAAAP with applicable cultural resource laws and regulations and shall regularly report the status of such compliance to the SHPO.
* When the Army, the SHPO, and/or the ACHP disagree about the recommendations for eligibility or any other portion of a compliance document, the Army shall take steps to ensure the protection and preservation of affected properties until the consultation process is complete.

***Procedure***

1. Contracted inventory, testing, and mitigation projects will be reported to the SHPO through the submission of a draft technical report. Survey and testing reports will contain recommendations of NRHP eligibility for all cultural resources.
2. The confidentiality of all site locations will be preserved.
3. Where the SHPO concurs with the recommendation of eligibility, the final report will reflect that concurrence. It should be noted that the federal agency (Army/IAAAP) makes the determination of NRHP eligibility or concurs with the report findings. Not all reports will include the SHPO’s concurrence before they are final.
4. Where the SHPO does not concur with the recommendation, the Army will continue to protect sites until the provisions of SOP #8 have been implemented, and status of the site(s) has been determined as ineligible for the NRHP. When agreement cannot be reached, the procedures outlined in SOP #2 and/or SOP #4, as may be appropriate, will be implemented and the disagreement will be so noted in the final report.
5. In cases of actions under Section 106 of the NHPA, if there is no effect on the properties by the proposed undertaking, then the SHPO has 30 days from the receipt of the draft report for review and comment. In cases of actions under Section 106 of the NHPA, if there is no adverse effect on the properties by the proposed undertaking, then the SHPO and the ACHP each have 30 days from the receipt of the draft report for review and comment.
6. Final reports will be printed in sufficient quantities and shall be distributed to interested libraries, museums, institutions, organizations, and individuals to encourage research and scholarship.

Figure 2.10 Standard Operating Procedure #9, Yearly Compliance Activities

## 2.4 FIVE-YEAR PLAN

*This section develops a five-year plan (FYs 2013-2018), including a description of planned undertakings, key compliance objectives, and the schedule of resources necessary to achieve them*

### 2.4.1 Planned Undertakings

At the present time, there is no Master Plan for IAAAP. However, prioritization lists for planned demolitions and new projects are in place at IAAAP. Planned demolitions total 291 facilities. A total of 221 of the proposed demolitions have reached 50 years of age and are currently identified by IAAAP as ELPA, or “eligible for the purposes of a programmatic agreement.” The other 70 proposed demolitions were constructed less than 50 years ago. The list, while extensive, is not a definite determination of what will be demolished, but prioritizes proposed demolitions that may take place in the next five years. Two program comments between DOD and ACHP implemented in 2006 address mitigation for such demolitions and other effects on eligible properties: World War II and Cold War Era (1939-1974) Ammunition Storage Facilities and World War II and Cold War Era (1939-1974) Army Ammunition Production Facilities and Plants.

Projects are also proposed at production Lines 2 and 3A, with the sewage treatment plant slated for replacement as well. Such construction projects will likely result in earthmoving and trenching, which could result in the damage or destruction of archeological sites. Thus, archeological survey and SHPO consultation should continue to take place with the implementation of such new projects.

Individual areas at IAAAP should be surveyed if any ground disturbing projects are anticipated on previously unsurveyed land. There are currently 228 archeological sites with unknown eligibility that will require further testing and coordination with the SHPO prior to any ground disturbing work taking place.

Table 2.3 includes a list of these projects in addition to ongoing management and maintenance undertakings.

### 2.4.2 Key Objectives

This ICRMP identifies five key objectives, some of which are necessary for compliance, and others that would enhance the day-to-day management capabilities of IAAAP cultural resource management.

The key objective necessary for compliance is to 1) review and update the ICRMP.

The key objectives that would enhance the day-to-day management of IAAAP are as follows:

1. Completion of the archeological inventory;
2. Completion of the architectural survey;
3. Significance testing of archeological sites having undetermined NRHP eligibility, if driven by a Section 106-required undertaking; and
4. Nomination of significant eligible properties to the NRHP.

Table 2.3 IAAAP Planned Projects as of FY12

|  |  |  |  |
| --- | --- | --- | --- |
| **Project** | **Associated Impacts on Cultural Resources** | **Legal Consideration** | **Relevant SOPs** |
| **New Construction** | | | |
| Construction of ancillary facilities at production Lines 2 and 3A and replacement of sewage treatment plant | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 3, 4, 5, 7, and 9 |
| **Building Demolition** |  |  |  |
| 291 buildings and structures currently described on a demolition priority list | Demolition of existing facilities and ground-disturbing activities | NHPA and NEPA | 1, 2, 4, and 9 |
| **Pollution Control** | | | |
| The testing and remediation of pollution, contaminated areas, hazardous waste, and landfills is an environmental priority at IAAAP and these undertakings will continue | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 4, 5, 7, and 9 |
| **Forestry** | | | |
| Site preparation | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 4, 5, 7, and 9 |
| Prescribed burning | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 4, 5, 7, and 9 |
| Harvesting of timber | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 4, 5, 7, and 9 |
| **Landscape Management** | | | |
| Row crops, hay, and cattle grazing | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 4, 5, 7, and 9 |
| Maintenance of grounds, including mowing and landscape plantings | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 4, 5, 7, and 9 |
| Planting, creation of diversion channels, and modification of slopes to control soil erosion | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 4, 5, 7, and 9 |
| **Testing and Training** | | | |
| IAAAP plans to continue all testing and training undertakings related to its military mission and those related to training of the Iowa National Guard. These undertakings will involve regular maintenance of the grounds. | Ground-disturbing activities | NHPA, NEPA, and possibly NAGPRA | 1, 4, 5, 7, and 9 |

#### 2.4.2.1 Review the Five-Year Real Property Master Plan

The mission at IAAAP is static. Therefore, there is no existing five-year Master Plan. If the mission at IAAAP is altered in the future, it is recommended that a five-year Master Plan be created and implemented.

#### 2.4.2.2 Review and Update the ICRMP

The first objective of the ICRMP is reviewing and updating this ICRMP. Within five years, the mission of IAAAP and the nature of its undertakings may change. Cultural resource laws and regulations may change. It is possible that not all of the objectives were fully achieved. As a result of implementing objectives, new information about IAAAP’s cultural resources may be available. In any event, a revised/updated ICRMP should review the nature of undertakings and should develop a set of subsequent objectives.

#### 2.4.2.3 Completing the Archeological Inventory

The second objective of the ICRMP is the completion of the archeological inventory as ground-disturbing projects arise. There are currently 228 archeological sites with unknown eligibility that will require further testing and coordination with the SHPO prior to any ground disturbing work taking place.

A 1991 report outlining the reconnaissance survey by Augustana College in 1989-1990 identified 274 new archeological sites (Winham et al. 1991). Some sites identified in this report have been revisited since the initial recording, resulting in SHPO concurrence for sites on a case-by-case basis. SHPO concurrence for all 274 archeological sites has not been identified, and these sites have not been evaluated for the NRHP. The current understanding between the CRM and SHPO is that only the agricultural crop fields were surveyed according to state guidelines during this study. Thus, ground-disturbing activities outside the production areas, storage areas, railroad right of way, road right of way, and in some agricultural fields requires additional archeological survey work. At the present time, some projects require additional survey work in disturbed areas or areas previously surveyed.

Inventory should be conducted in accordance with SOP No. 7. The goal of the inventory should be to find all surface and buried sites and, should any sites be discovered, to evaluate as many of these as possible (using inventory level tactics) with regards to their NRHP eligibility. If any sites cannot be fully assessed using shovel testing and other cost-effective survey techniques, they should be afforded protected status until their eligibility can be adequately determined using additional, more intensive testing tactics (under SOP No. 8).

Locational data for about 30 archeological sites on IAAAP was made available for the purposes of this ICRMP, but no record of survey, site location, or reporting of these sites has been made available to the IAAAP CRM. It is believed that the state of Iowa’s online GIS archeological database, I-Sites, may have more complete and up-to-date information regarding archeological site locations. It is recommended that a paid subscription to the I-Sites database be made available to the IAAAP CRM for more complete access to mapping and data collection.

#### 2.4.2.4 Significance Testing of Archeological Sites Having Undetermined NRHP Eligibility

Currently, 228 archeological sites at IAAAP have not been evaluated for NRHP eligibility. These sites have been recorded during surface survey but the inventory tactics used (such as limited shovel testing) were not able to determine key aspects of their data potential (for example, site occupation date, integrity). For Section 110 planning purposes, these archeological sites should be tested in accordance with SOP No. 8 so as to fully evaluate their NRHP eligibility. Full completion of this objective should be in conjunction with ongoing Section 106 compliance activities and should be scheduled as funding permits. Presently, IAAAP plans to evaluate the sites on a case-by-case basis when an undertaking is proposed within the sites APE.

**2.4.2.5 Complete the Architectural Survey**

As buildings and structures become 50 years of age, survey and evaluation of those buildings should be conducted and coordinated with the SHPO. The Iowa SHPO has requested that IAAAP record all of the extant historic-era cemeteries on Iowa Site Inventory Forms and file them with the SHPO. Consideration should also be given to also recording the cemeteries as archeological sites with the Office of the State Archeologist.

#### 2.4.2.6 Nominating Eligible Properties to the NRHP

As required by Section 110 of the NHPA and under SOP No. 8, the CRM should ensure that NRHP nomination forms are prepared and submitted to the Keeper of the Register. As stated in AR 200-1, formal nomination of historic properties to the Keeper of the NRHP for listing in the NRHP is not a high program priority. Formal nomination for listing in the National Register makes no difference in the way historic properties are managed, and diverts scarce resources away from other cultural resources management activities. The Army will formally nominate only those properties it intends to interpret, commemorate, or otherwise actively manage as sites of popular interest that are normally open to the general public. Nominations should follow the guidelines and format requirements specified in National Register Bulletin 16A-*Guidelines for Completing National Register of Historic Places Nomination Forms* (McClelland 1997).

### 2.4.3 Schedule for Implementation

As part of the CRM responsibilities, undertakings that disturb the ground surface (for example, new construction, building demolition, infrastructure projects, pollution control, forestry projects, landscape management, testing and training, and recreation) will need to be reviewed to ensure that the APE for each project has been archeologically surveyed and that no impacts will occur to unevaluated sites. If the area has not been inventoried, funds will need to be programmed for this activity. Consequently, if unavoidable impacts to unevaluated sites occur, funds will need to be programmed to ensure that the site is evaluated, and if the project cannot be relocated, funds will also need to be programmed to ensure that impacts to the site are mitigated through data recovery. Two Native American burial mounds have been identified at IAAAP. If undertakings that disturb the ground encounter human remains at these sites or sites thus far unknown, funds will need to be programmed to ensure early and often consultation with the appropriate Native American tribes.

The objectives of this ICRMP have been sequenced to allow IAAAP cultural resource management program to develop in a reasonable manner (see Table 2.4). To allow for the management of ongoing compliance programs and to allow for planning of future schedules and budgets, the overall 5-year schedule starts slowly. Several of the objectives will be completed as necessary or as funding is available. During every year of the plan, the CRM continues all routine management activities necessary for cultural resource compliance, including review of undertakings, consultation with the Iowa SHPO, update of the database, management of contracts, and preparation of compliance reports. As stated previously, some of these key objectives are necessary for cultural resource compliance while others would develop or enhance a functioning cultural resource program at IAAAP.

* **Year 1**. No objectives are planned during the first year of the plan.
* **Year 2**. During the second year of the plan, Objective No. 2 may occur if funding is available. Objective No. 3 may be required pending the location and outcome of future proposed undertakings.
* **Year 3**. During the third year of the plan, any archeological significance testing that might be required by new undertakings should continue. If any properties are determined eligible, Objective No. 5 should begin.
* **Year 4**. During the fourth year of the plan, Objective Nos. 2, 3, and/or 4 continue, as necessary.
* **Year 5**. During the final year of the five-year plan, all ongoing compliance objectives are continued, including testing programs (if required for Section 106 compliance), and nominations of exceptionally significant properties, if identified. Under Objective No. 1, all newly obtained information should be synthesized and incorporated into the development of an updated ICRMP.

Table 2.4 Schedule for Implementation of the Key Objectives

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Plan Year2 | | | | | | |  |
| Objective | Priority | Description | Year 1 | Year 2 | Year 3 | | Year 4 | | Year 5 | Next 5-Year Plan |
| 1 | Essential for Compliance | Update the ICRMP |  |  |  | |  | |  |  |
| 2 | Best Management | Complete the archeological inventory |  |  |  | |  | |  |  |
| 3 | Best Management | Complete the architectural survey |  |  |  | |  | |  |  |
| 4 | Best Management | Archeological significance testing |  |  |  | |  | |  |  |
| 5 | Best Management | Nominate eligible properties to NRHP |  |  |  | |  | |  |  |
|  |  | | | | |  | |  |  |  |
| 1      | = Ongoing compliance process or procedure  = Primary objective  = Finish objective, if not complete | | | | |  | |  |  |  |

**2.4.4 Estimate of Resources Needed**

This section includes the estimated staff and supplementary resources needed to implement this ICRMP.

**2.4.4.1 Staff Resources**

It is expected that, in addition to fulfilling regular and routine Section 106 compliance review, the CRM may be able to accomplish Objective No. 1 without the need for supplementary expertise. The remaining objectives should employ competent contractors.

**2.4.4.2 Supplementary Resources**

Supplementary expertise clearly will be necessary to begin Objectives No. 2 through 5. These are labor-intensive objectives and a sufficient number of personnel in these disciplines (archeology and architectural history) is not available within the in-house staff of IAAAP. Such supplementary expertise must be procured through contract.

Completion of Objective No. 3 calls for the archeological inventory of the remaining unsurveyed land; this will occur only as projects arise.

Completion of Objective No. 4 calls for the archeological significance testing of known, but unevaluated, archeological sites.

Completion of Objective No. 5 calls for the significant eligible properties on IAAAP to be nominated to the NRHP. The process of nominating significant eligible properties is quite lengthy and complex and may require additional fieldwork to document eligibility.

## 2.5 PLAN SUMMARY

In summary, the ICRMP for IAAAP for FYs 2013 through 2018 calls for the following objectives for cultural resource compliance and to enhance ICAAP’s cultural resource program.

1. **COMPLETE the Archeological Inventory**. IAAAP needs to complete the required inventory of cultural resources as funding is available. About 228 archeological sites need to be tested for NRHP eligibility, as necessary based on new undertakings.
2. **COMPLETE the Architectural Survey**. As buildings and structures become 50 years of age, survey and evaluation of those buildings should be conducted and coordinated with the SHPO. The Iowa SHPO has requested that IAAAP record all of the extant historic-era cemeteries on Iowa Site Inventory Forms and file them with the SHPO. Consideration should also be given to also recording the cemeteries as archeological sites with the Office of the State Archeologist.
3. **TEST Archeological Sites.** Significance testing of archeological sites having undetermined NRHP eligibility, if driven by a Section 106-required undertaking
4. **NOMINATE Eligible Properties**. IAAAP needs to begin the process of nominating its significant eligible properties to the NRHP, pending available funding.
5. **UPDATE the ICRMP**. IAAAP needs to integrate all work accomplished or not completed during the next five years for the next ICRMP.

The completion of these objectives will enhance IAAAP’s cultural resource management program and will better enable the successful completion of the proposed undertakings listed in this ICRMP.

# 3.0 OVERVIEW of IAAAP

This section presents an overview of IAAAP and is structured in six primary discussions:

* *A description of the installation* (see Section 3.1) summarizes its location, military mission, command structure, size, and tenant agencies.
* *An environmental overview* (see Section 3.2) presents key factors that are relevant to understanding the variety and distribution of cultural resources to be found on IAAAP, including its climate, geology, topography, soils, hydrology, and biology.
* *A description of undertakings* (see Section 3.3) reviews the variety of Federal actions at IAAAP that have the potential to affect cultural resources.
* *A review of current management practices* (see Section 3.4) summarizes the process by which cultural resources are currently being managed at IAAAP.
* *A historical narrative* (see *Section* 3.5) presents a concise synthesis of key points of the prehistory and history of the IAAAP and surrounding region from 10,000 Before Christianity (B.C.) until the end of the Cold War.
* *A review of Native American groups* (see Section 3.6) *summarizes* those tribes that have an interest in the prehistoric cultural resources of IAAAP.

## 3.1 INSTALLATION DESCRIPTION

*This section briefly describes the location, size, military mission, command structure, and tenant agencies of Iowa Army Ammunition Plant.*

IAAAP is located in southeastern Iowa in Des Moines County (see Figures 3.1 and 3.2). Entry to IAAAP is located in Middletown, Iowa, which is situated west of the Mississippi River town of Burlington, Iowa. In 2010, Middletown had a population of 318, whereas the nearby towns of West Burlington and Burlington had population totals of 2,968 and 25,663, respectively. The total population of Des Moines County dropped from 42,351 in 2000 to 40,325 in 2010 (U.S. Census Bureau 2010).

As of 2012, IAAAP employed 23 Department of the Army civilians and one Commander. The small government staff of Army civilians, led by the only uniformed soldier on site, the Commander, provides oversight of the Operating Contractor at IAAAP. Due to its status as a Government-Owned, Contractor-Operated (GOCO) facility, full IAAAP employment statistics are considered proprietary and are therefore unavailable. One source, however, stated that nearly 900 personnel are employed at IAAAP (Joint Munitions Command of the U.S. Army 2012; Global Security 2011). With a present contract from 2009 to 2018, the current Operating Contractor is American Ordnance LLC, which is owned by Day & Zimmerman and General Dynamics Ordnance Systems.

Within the 1,289 facilities on site, there is more than 4.3 million square feet of storage. The 19,192-acre plant holds 142 miles of roads and 102 miles of railroads (Joint Munitions Command of the U.S. Army 2012).

Figure 3.1 Iowa Army Ammunition Plant Location

Figure 3.2 Iowa Army Ammunition Plant Layout

IAAAP is a U.S. Army installation currently under the jurisdiction of the U.S. Army Materiel Command and the Joint Munitions Command (JMC). Created in 1941, the current mission of IAAAP is to produce and deliver Large Caliber munitions to U.S. Joint Forces that instill confidence through material superiority in their ability to engage and destroy targets at will (Joint Munitions Command of the U.S. Army 2012).

The capabilities of IAAAP include the following:

1. Load, assemble, and pack (LAP) a full range of munitions and high explosive components;
2. Tank ammunition (105 mm; 120 mm);
3. High explosive artillery;
4. Large-caliber mortars (81 mm; 120 mm);
5. Insensitive munitions;
6. Smart munitions mines/scatterable mines;
7. Missile assembly/missile warheads;
8. Rocket assisted projectiles;
9. Detonators;
10. Development;
11. Pressed and cast warheads; and
12. Testing.

Of the approximately 30 square miles occupied by IAAAP, about one third contains active or formerly active munitions production or storage facilities. The remaining two-thirds of the property is forested or used for outdoor recreation or leased for agricultural purposes and grazing land. Additionally, third-party production tenants also operate on IAAAP lands under arrangements with the Operating Contractor. The activities of these third parties do not extend beyond plant line buildings, and all ground-disturbing and/or building-altering activities require prior review and written consent of the Operating Contractor and the IAAAP CRM, and the Commander (as appropriate).

## 3.2 ENVIRONMENTAL SETTING

*This section reviews the natural environment of Iowa Army Ammunition Plant including its climate, geology, topography, soils, hydrology, and biology.*

The sections below provide details on the installation’s physiography, water resources, flora and fauna, and paleoenvironmental and modern climates.

### 3.2.1 Physiography

The IAAAP is located in Des Moines County, which is in the southeast portion of the state. It is situated approximately 10 miles west of Burlington and the Mississippi River. The 409-square mile Des Moines County consists of agricultural land, urban land, pasture, woodlands, and idle land (Brown 1983:1). The county is bordered by the Mississippi River on the east and the Skunk River on the south.

The topography of the area ranges from 520 feet above mean sea level (msl) at the confluence of the Mississippi and Skunk rivers to 862 feet above msl at the highest point near Yarmouth in the east central part of the county (Brown 1983:3). Generally, the county is nearly level to gently sloping. Within the IAAAP itself, elevations range from 544-732 feet above msl. The IAAAP is mostly flat in the north, with ridges between drainages in the south. Also in the southern portion of the plant, above the Skunk River, narrow and steep drainage valleys and bluffs are observed.

Soils in the Des Moines County area formed in loess, glacial till, alluvium, material weathered from limestone bedrock, and eolian sand (Brown 1983:119). Loess, silty wind deposited material, is the most common parent material in the county and was deposited during the Wisconsin glacial period (27,000- 12,000 years ago). In some areas of the county, the loess is 15 feet thick on the Mississippi River bluffs. Glacial till was likely deposited in the area during the Nebraskan, Kansan, and Illinoian periods (spanning 2.6 million to 130,000 years ago). These soils range from gray and clayey to firm loam to friable loam. Alluvium is water deposited sediment along rivers and steams that varies widely in texture. The majority of soils in the county are developed from loess, till, and alluvium from the Mississippi River. Limestone bedrock and Eolian sands are also present. Limestone bedrock, the oldest parent material in the county, is found on or near the surface, and is often found at the base of steep slopes. The wind deposited Eolian sands is mostly fine quartz and found on stream benches (Brown 1983:120-121).

The IAAAP is located at the meeting point of the Southern Iowa Drift Plain to the west and the Mississippi Alluvial Plain to the east. The movement of melting glaciers caused the formation of the Drift Plain, while the Mississippi Alluvial Plain was formed by cuts by the Mississippi River that created alluvial flood plains. Wind swept sand dunes are evident along portions of both the Mississippi and Skunk rivers (Prior 1991; Peyton 2001).

As Peyton observes, Morrow (1994) identified:

…nine different bedrock formations with surface outcrops across Iowa, which contain approximately 35 distinctive raw material types suitable for stone tool manufacture. IAAAP is on Mississippian bedrock, which contains a variety of high quality cherts. More specifically, the Burlington Formation of the Osagean Series underlies the installation. As such, outcrops of Burlington chert occur in the extreme southeastern portion of Iowa, in Des Moines County, both on IAAAP and in its immediate vicinity. Three different varieties of Burlington chert are recognized by Morrow (1994): Burlington white mottled chert, Burlington gray and tan chert, and Burlington fossiliferous chert. The white mottled variety is the most common of the series on archeological sites and was a preferred raw material during the Paleo-Indian, Early Archaic, Middle Woodland, and Late Prehistoric periods (Morrow 1994). Burlington white mottled chert is encountered on archeological sites not only in southeast Iowa, near the outcrops, but also across the state and Midwest. The archeological occurrence of other varieties of Burlington chert is restricted geographically to Louisa and Des Moines counties, and this chert is usually found in close proximity to outcrops (Morrow 1994). Other types of chert that may be encountered on archeological sites within IAAAP include Keokuk chert (documented outcrops exist to the south of the Plant area in Lee and Van Buren counties); Warsaw formation cherts (which are common in the Skunk River Basin), and Spergen cherts (Morrow 1994 in Peyton 2001).

Both quarries and outcrops have been documented within the IAAAP (Hansen 1973). Hanson recorded these formations south of the Plant, in South Augusta, along the Skunk River, and along Spring Creek east of Route 61, southeast of the installation. Outcrops are also found along the Mississippi River. Two lithic outcrops were noted within the Plant, north of Lake Mathes on Long Creek (Hansen 1973 in Peyton 2001).

During a 1991 archeological reconnaissance survey of the IAAAP, seven quarry sites and/or outcrops were recorded within the property boundaries (Winham et al. 1991). One of these may be one mentioned by Hansen (1973). Site 13DM487 is located on Long Creek west of Lake Mathes. Three more were located south of the Lake also on Long Creek: one is on an intermittent stream that drains into the Skunk River in the southwest part of the property; one is on Brush Creek north of Plant Road K and northeast of Shiloh (also known as Avery) Cemetery; and one is on a side ridge over Spring Creek in the northeast part of the IAAAP (Winham et al. 1991 in Peyton 2001). It is possible that additional outcrops and quarries are located within the confines of the IAAAP, as the property has not been completely surveyed for archeological remains.

#### 3.2.1.1 Soils

Six major soil types are documented within the IAAAP according to the Des Moines County Soil Survey (Brown 1983). These include: Weller-Pershing-Grundy, Nodaway-Lawson-Klum, Nira-Otley-Mahaska, Mahaska-Tainter, Clinton-Lindley, and Givin-Hedrick-Ladoga.

The Nodaway-Lawson-Klum association is found along the Long Creek Valley. These mostly level and moderately well drained to poorly drained soils are loamy and sandy and found in bottomlands and floodplains (Brown 1983:5). Slopes generally range from 0-2 percent in these areas and are found in up to seven percent of Des Moines County. Found in both major and minor stream valleys, these soils are found in narrow to moderately wide valleys. The soil association is comprised of roughly 20 percent Nodaway, 14 percent Lawson, 10 percent Klum, and 56 percent minor soil types (Brown 1983:5). Ranging in color from very dark grayish brown to very dark brown to very dark gray to black, the textures can be silt loam, silty clay loam, and fine sandy loam. The majority of land with these soil types is used for crops or hay and pasture; however, Mississippi and Skunk River floodplains support trees and other vegetation (Brown 1983).

Nira-Otley-Mahaska association soils are found in the far northwest corner of the IAAAP. These “nearly level to moderately sloping, moderately well drained and somewhat poorly drained, silty soils” are found in the uplands and formed from loess (Brown 1983:7). Located on moderately wide or wide ridge tops and short side slopes, the range of slope is 1-9 percent. Covering approximately eight percent of Des Moines County, this soil association is comprised of 35 percent Nira, 30 percent Otley, 15 percent Mahaska, and 20 percent minor soil types. Nira and Otley are moderately well drained, while Mahaska soils are somewhat poorly drained. The typical Nira soils profile consists of eight inches of black silty clay loam over six inches of very dark grayish brown silty clay loam over mottled friable silty clay loam subsoil. Otley soils generally contain six inches of very dark brown silty clay loam over an 8-inch layer of very dark brown and dark brown silty clay loam. Subsoils are around 35 inches thick and consist of silty clay loams. Mahaska soils are black silty clay loams in the upper 10 inches, followed by black and very dark grayish brown silty clay loam for eight inches. Subsoils are friable silty clay loam (Brown 1983). Used for agricultural crops and pasture, the soils are suited to this purpose.

Mahaska-Taintor association soils are “nearly level, somewhat poorly drained and poorly drained, silty soils on uplands” (Brown 1983:8). Developed in loess and found on wide or moderately wide ridgetops without well-defined drains, slopes range from 0-3 percent. Comprising 20 percent of Des Moines County, this association is made up of 48 percent Mahaska, 42 percent Taintor, and 10 percent minor soils. Mahaska soils were discussed in depth above. Typical soil profiles for Taintor soils include eight inches of black silty clay loam over 15 inches of black mottled silty clay loam over mottled silty clay loam subsoil. Used almost exclusively as cropland for growing soybeans and corn for years, urbanization is now taking over this soil type (Brown 1983). This soil association is found in the northern portion of the IAAAP and in on major ridges.

Clinton-Lindley association soils are found between the Givin-Hedrick-Ladago soils and the major river valleys within IAAAP. Consisting of “gently sloping to very steep, moderately well drained and well drained, loamy and silty soils on uplands and high stream benches”, these soils lie on narrow ridge tops and side slopes (Brown 1983:9-10). Formed in loess and glacial till, slopes range from 2-40 percent. Comprising 32 percent of Des Moines County, the association is made up of 45 percent Clinton soils, 25 percent Lindley soils, and 30 percent minor soil types. Clinton soils are found on gentle to strong slopes, while Lindley soils are found on strong to very steep slopes. Clinton soils typically display eight inches of dark brown silty loam over four inches of brown silt loam over dark yellowish brown silty clay loam subsoil. The surface layer of Lindley soils is typically three inches of very dark grayish brown loam over four inches of brown loam over subsoil. Land in these areas is generally used for crops, pasture, or timber production, with the number of farms having decreased (Brown 1983).

Givin-Hedrick-Ladoga association soils are located adjacent to the Mahaska-Taintor soils to the south. Defined as “nearly level to moderately sloping, somewhat poorly drained and moderately well drained, silty soils on uplands”, these soils are found on ridgetops and side slopes with well developed drainage systems (Brown 1983:11). Comprising 16 percent of Des Moines County, 35 percent of the association is made up of Givin soils, 25 percent are Hedrick, 20 percent are Ladoga, and the remaining 20 percent are a combination of minor soils. Gavin soils are typically eight inches of very dark brown silt loam over four inches of dark grayish brown mottled silty loam over subsoil. Hedrick soils display a typical soil profile of eight inches of very dark grayish brown silt loam over four inches of brown silt loam over friable silty clay loam subsoil. Ladoga soils generally contain eight inches of very dark grayish brown silt loam over three inches of brown silt loam over mottled friable and firm silty clay loam. Cultivated crops and permanent pasture are found in these soils.

Weller-Pershing-Grundy soils are found on the far western edge of the IAAAP and are defined as “gently sloping and moderately sloping, moderately well drained and somewhat poorly drained, silty soils on uplands” (Brown 1983:13). Found on narrow ridgetops and side slopes with well-developed drains, the soils formed in loess and are found on slopes ranging from 1-9 percent. Only making up about three percent of Des Moines County, the association is comprised of 32 percent Weller soils, 19 percent Pershing soils, 11 percent Grundy soils, and 38 percent various minor soil types. Weller soils are comprised of a five-inch layer of brown silt loam over four inches of brown mottled silt loam over subsoil. Pershing soils usually have nine inches of very dark grayish brown silt loam over subsoil. Grundy soils are generally black silty clay loams (10 inches) over very dark gray silty clay loam (4 inches) over subsoil. Crops and pastureland occupy much of these areas (Brown 1983).

Farming was the primary land use for the IAAAP area historically, and most the area was cleared of native vegetation for this purpose. Plowing and agricultural disturbances, as well as associated erosion, are evident in the soils. Erosion is common throughout the IAAAP, notably in the southern and western portions where it is more sloped.

### 3.2.2 Water Resources

The IAAAP is located just west of the Mississippi River and just north of the Skunk River. The Mississippi and its tributaries drain approximately 67 percent of the county, while the Skunk River and its tributaries drain 27 percent. The remaining six percent is drained by the Iowa River (located in Louisa County) to the north. Cedar Creek, Long Creek, and Brush Creek flow into the Skunk River, which forms the southern border of the county. A few small tributaries of the Iowa River flow north through the county while Flint Creek and Spring Creek flow into the Mississippi. Several creeks, including Yellow Spring Creek, Hawkeye Creek, and Dolby Creek, drain into diversion ditches, which are routed to the Mississippi (Brown 1983:3). There is a levee on the Mississippi north of Burlington that aids in flood protection. Drainage ditches are common and lead to pump stations, where water is pumped into the Mississippi over the levee. The water table is kept artificially low due to the levee and the pumps (Brown 1983:3).

### 3.2.3 Floral Resources

Originally, oak-hickory forests were found in this area eastern Iowa (Braun 1950). Black oak, white oak, shingle oak, shagbark hickory, and hazelnut are found in open forests on dry slopes (Conrad 1952; Schwegman 1973). In wetter areas, red oak, basswood, black walnut, slippery elm, and hackberry are common. Floodplain species include American elm, slippery elm, cottonwood, sycamore, green ash, silver maple, and black walnut with willow and river birch found on river and stream banks (Conrad 1952; Schwegman 1973).

Today, within the IAAAP, white oak, hickory, and mixed hardwoods are common in the woodlands. Sumac, hawthorne, ironwood, and wild berries are also found (Peyton 2001). Covered predominately in bluegrass, smooth brome, orchard, and bird's foot trefoil, 2,133 acres within the IAAAP are classified as grassland (Mason & Hanger-Silas Mason 1995).

### 3.2.4 Faunal Resources

Prior to European habitation, a diverse faunal community existed in the area surrounding the IAAAP. Species included elk, deer, raccoon, turkey, squirrel, bear, woodchuck, opossum, and rabbit. Prairie chicken and bison inhabited the prairie in prehistoric times (Peyton 2001). Migratory and woodland songbirds birds were common. The presence of major river systems (the Mississippi and the Skunk) and their tributaries supported a variety of fish and water birds, as well as turtle, muskrat, beaver, and mussels.

The conservation programs at IAAAP have supported numerous animal populations, including rabbits, squirrels, turkeys, raccoons, coyotes, bobwhite, and deer. The endangered Indiana bat and Orange Throated Darter are found in the IAAAP boundaries.

### 3.2.5 Paleoenvironmental Conditions

From a regional perspective, the environmental conditions in Iowa and adjacent areas have fluctuated moderately since the maxima of the last ice age, about 25,000-16,000 years ago (Saucier 1974, Albert and Wyckoff 1984, Davis 1989, and Story 1990). The maximum extent of the ice sheet stretched from northwestern Pennsylvania across Ohio, Indiana, and northern Iowa, and covered much of North and South Dakota (Flint 1957). It is estimated that the ice sheet may have been 1,000 feet thick in central Ohio (Hansen 2012). The climatic conditions were generally thought to be much cooler and moister than at present.

Spruce dominated forests dominated the landscape of Iowa from 30,000-21,500 years ago but were replaced by open tundra during the glacial maximum around 21,500 16,000 years ago. As glacial ice began to disappear and the climate warmed between 16,000 and 12,000 years ago, spruce forests re-emerged. Though climatic conditions became slightly warmer they were still cool and moist by modern standards. The continental glaciers were on the wane. This shift has been interpreted to reflect increased precipitation during the growing seasons (Delcourt and Delcourt 1985). About 9,000 years ago, prairies emerged in west and central Iowa. Oaks returned to Iowa between 4,000 and 3,000 years ago and survived until Europeans arrived in the area (University of Iowa 2012).

Prairie fires prevented the spread of the forest and helped maintain the prairie environment. These fires were naturally occurring due to lightening but may have also been intentionally set by Native Americans. It is estimated that by the Contact period, roughly 85 percent of the state was prairie (University of Iowa 2012).

From about 6,500-4,000 years ago, the period was marked by extreme warming and drying trends. Although once regarded as the Altithermal, Thermal Maximum, or the Hypsethermal, it is apparent that the drying trend across North America was neither synchronous nor uniform. Later, as Lake Albany shrank and the glacier retreated, the area dried and the Hudson River and Mohawk River drainage system emerged (Funk 1976:208; Thompson 1977:19-23).

### 3.2.6 Modern Climate

Variability in the climate of the interior of North America east of the Rocky Mountains is predominantly due to the interactions of three air masses: (1) the Arctic air mass from the polar region brings cold, dry air; (2) the Pacific air mass from the west coast brings in warm air, which is dried as it crosses the Rocky Mountains; and (3) the Maritime Tropical air mass brings in warm moist air from the Gulf of Mexico (Baerreis et al. 1970). The relative strength of these air masses on a seasonal cycle sets up the frontal boundaries that dictate where storm paths track across the eastern United States and determine general weather patterns.

Eastern Iowa has a moderate climate, with cold winters and hot summers. In Des Moines County the average yearly temperature is around 50 degrees Fahrenheit. In winter temperatures generally range from 12-48 degrees, Fahrenheit while in summer the range is from around 60-85 degrees Fahrenheit (Brown 1983: Table 1). The lowest recorded temperature for Burlington was -23 degrees Fahrenheit in 1977. The highest temperature recorded in Burlington was 101 degrees Fahrenheit in 1966. Average rainfall is approximately 36 inches, with the most of it falling in spring and summer. Thunderstorms occur mostly in summer, and on average during 51 days each year. Snowfall is about 25 inches per year. Tornadoes and severe thunderstorms occur from time to time (Brown 1983).

## 3.3 UNDERTAKINGS

*This section reviews the types of undertakings at Iowa Army Ammunition Plant that can affect cultural resources.*

At IAAAP, personnel conduct a wide variety of undertakings that have the potential to affect cultural resources. Some of these undertakings are ongoing, such as mission-related production of munitions; maintenance and repair operations; site remediation; and water treatment and sewage disposal. Other undertakings, such as agricultural use of lands, recur regularly. Additional undertakings are case-specific, such as the planned construction of new buildings or facilities. This section reviews in general terms the variety of undertakings and their possible effects. Specific undertakings that are planned, but not yet implemented, with a potential for impacting cultural resources are identified in the five-year plan in Section 4.0.

### 3.3.1 Planned Undertakings

This section discusses planned undertakings, including the construction of new buildings, revitalization of old buildings, building demolition, development of infrastructure, pollution control and remediation, and issues involving real property.

#### 3.3.1.1 Construction of New Buildings

IAAAP is planning construction of new ancillary facilities at production Lines 2 and 3A, and the replacement of the sewage treatment plant, but otherwise, there will be minimal new construction in the next five years.

The construction of new buildings and the expansion of existing buildings have the potential to affect historic properties. Site preparation often involves extensive earthmoving and trenching, which can result in damage to or total destruction of archeological sites. New buildings and structures can also interfere with the viewscapes of historic properties. However, impacts to cultural resources will only occur if construction is started on or in the immediate vicinity of NRHP eligible or unevaluated historic structures, archeological sites, or cultural resources significant to traditional groups.

#### 3.3.1.2 Revitalization of Existing Buildings

IAAAP is planning on alteration to and revitalization of existing buildings in the next five years. The alteration of existing buildings, including revitalization, renovation, and rehabilitation, has the potential to affect historic properties. These undertakings can involve a variety of alterations (ranging from minor to major) to the interior or exterior of a building. Alterations may include the following types of revitalization:

* Installation of access ramps or elevators in compliance with the Americans With Disabilities Act of 1990 (42 USC 12101), utilizing the 2010 standards;
* Changes to interior floor plans, interior finishing, and moving or closure of door and window openings;
* Installation of new windows or new exterior hardware;
* Application of exterior facings or changes to exterior surfaces;
* New roofing;
* Installation or upgrading of insulation, weather-stripping, and heating or air conditioning systems; or
* Installation or upgrading of electrical or plumbing systems.

#### 3.3.1.3 Demolition of Buildings

IAAAP is planning to demolish buildings to make way for new construction and to demolish buildings that have fallen into disrepair. In all, 291 buildings and structures are currently identified on a demolition priority list. While this list is lengthy, it is a priority list only and does not guarantee demolition within the next five years. A total of 221 of the proposed demolitions are facilities that have reached 50 years of age and are currently listed in the IAAAP buildings and structures inventory as ELPA.

For an NRHP-eligible building, demolition is always an adverse effect. In addition, demolition has the potential to damage known and unknown archeological sites that may be near or underneath the building.

Following a 1986 Programmatic Memorandum of Agreement (PMOA) issued between the DOD, the National Council of State Historic Preservation Offices (NCSHPO), and the ACHP, demolition of World War II-era temporary buildings and structures is excluded from Section 106 review. Undertakings excluded from the PMOA were rehabilitation, renovation, and relocation.

However, two Program Comments between DOD and ACHP address undertakings associated with World War II and Cold War Era (1939-1974) buildings and structures at IAAAP. These Program Comments provide mitigation guidelines for the treatment of eligible properties at IAAAP and other Army ammunition storage facilities and ammunition production facilities and plants.

Mitigation for Army ammunition production facilities and plants included the following:

* Preparation of a supplemental volume to the extant document, Historic Context for the World War II Ordnance Department’s Government-Owned Contractor-Operated (GOCO) Industrial Facilities 1939-1945, which includes a Cold War Era (1946-1974) context with a focus on plant alterations due to changing weapons technology and defense needs, and identifying architect-engineer firms that were instrumental in the creation of significant buildings and structures for Army Ammunition Plants;
* HABS/HAER documentation for selected architecturally significant Facilities and Plants at two installations;
* Develop public information on the Army ammunition process, from production through storage to include a display that can be loaned to Army museums and a popular publication on the ammunition process; and
* Encourage adaptive reuse of properties and use of historic tax credits by private developers under lease agreements.

Mitigation for Army ammunition storage facilities included the following:

* Expansion and revision of the context study, Army Ammunition and Explosives Storage in the United States, 1775-1945 to include the Cold War Era, with a focus on changing ammunition storage during this period due to technological advances, notable builders, architects, and engineers associated with ammunition storage facilities, and including a detailed inventory of ammunition storage facilities with information on building types and architectural styles and the quantity of each, and
* In-depth documentation of nine ammunition storage facilities, to include brief histories, with a primary focus on historic photographs and existing plans.

According to the Program Comments, Army completion of the outlined tasks accomplishes the Section 106 responsibility for these historic properties.

#### 3.3.1.4 Development of Infrastructure

IAAAP is planning on minimal development of infrastructure in the next five years. Infrastructure undertakings at IAAAP can include:

* Construction and widening of roads;
* Construction, and renovation of bridges and overpasses;
* Installation of new water, steam, gas, and sewer lines;
* Installation of new electric, cable, telephone, and fiber optic lines;
* Installation or removal of signage;
* Installation or removal of fences; and/or
* Development of outdoor recreational facilities such as boat ramps, picnic areas, angler access, and parking.

Such developments can affect historic properties. When these developments are below ground, the potential effect is to archeological sites. Depth of such developments is often between three and four feet below ground, and gravity flow sanitary lines may be more deeply buried. Aboveground infrastructure components can also affect historic structures, historic landscapes, and cultural resources significant to traditional groups.

#### 3.3.1.5 Pollution Control and Remediation

Remedial actions by the Army and USACE are ongoing or planned future actions. Those remedial actions currently planned are not known to potentially result in adverse effect to known historic properties, especially buried archeological sites. Activities associated with these types of undertakings include core borings, monitoring well installation, detonation of residual unmovable potentially live ordnance, and extensive earth moving.

#### 3.3.1.6 Real Property

Transference or leasing of real property to a non-Federal agency or to another Federal agency can result in effects to historic properties because of changed land management practices or through changes in the levels of building maintenance associated with transfer/leasing. Since its creation in 1941, IAAAP has undergone some boundary changes, reflecting various acquisitions and quit claim deeds. While IAAAP now measures 19,011 acres, the original boundaries of the property composed approximately 20,450 acres. The most recent conveyance of 121.17 acres of land from IAAAP to the City of Middletown took place in the 1990s and resulted in a loss of real property and, as a result, was seen as having an adverse effect on the potentially eligible district (IAAAP) due to the plant’s role in World War II.

#### 3.3.1.7 Memorials

It should be noted that military installations include buildings, roads, and landscaping that are memorialized in the name of individuals associated with the installations, like commanders or generals. The creation of memorials is overseen by the Army Memorial Program and Army Regulation 1-33. Part 2-5 of AR 1-33 outlines the procedures for memorials when an installation is closing:

When an installation closes, the installation commander is responsible for the disposition of memorial plaques. He or she should offer the plaque to the next of kin of the person memorialized. If the next of kin cannot be located or refuses a plaque, it will be sent to the U.S. Army Historical Clearing House.

### 3.3.2 Recurrent and Periodic Undertakings Involving Agriculture

Dating to the plant’s earliest days, IAAAP is home to one of the Army’s largest agricultural programs. Row crops, hay, and cattle grazing are all active agricultural enterprises at IAAAP and have taken place through agricultural leasing since 1945. Some agricultural land has been converted to native grass prairie. As of 2006, IAAAP had 43 crop leases, which are in place for five-year periods.

Row crops of primarily corn and soybeans compose about 5,532 acres at IAAAP. The 10 haying and grazing leases occur on approximately 1,575 acres. Each lease has its own management plan and leases on highly erodible lands also have conservation compliance plans. The no-till farming method, which involves no seedbed preparation besides opening a small slit or punching a hole in to the soil, and crop rotating is practiced at IAAAP (Gene Stout and Associates and Blythe & Trousil, Inc. 2006).

Yearly Agricultural and Grazing Outlease Tract Management Plans (TMPs) are submitted to SHPO for concurrence for tracts up for lease renewal and/or review. In the cover letter submitted to SHPO is a list of the tracts in question along with any archeological sites (and the associated site recommendation) that are within or partially within the tillage area of that tract (See Appendix F for an example of a TMP cover letter and concurrence).

### 3.3.3 Ongoing and Routine Undertakings

Many undertakings at Federal installations are ongoing and routine aspects of mission operations. Because these are considered routine, they are sometimes not recognized as undertakings. However, these routine undertakings often have very large effects on NRHP-eligible properties (if within the APE), as well as TCPs, sacred sites (both within and potentially outside of the APE), a condition or possibility that must be taken into account. Building repair and maintenance, landscaping, infrastructure maintenance, recreational activities, and testing and training operations are discussed below.

#### 3.3.3.1 Repair and Maintenance of Existing Buildings

In addition to planned revitalization projects, the routine maintenance and repair of existing buildings can potentially diminish the integrity of NRHP-eligible properties if materials, colors, styles, or workmanship that are not compatible with the existing architectural fabric and styles are used.

#### 3.3.3.2 Landscape Maintenance

Routine landscape maintenance can lessen the integrity of archeological properties. The alteration of existing land contours or drainage systems through blading, excavation, borrowing, or filling can damage sites. Landscape-related undertakings also include mowing of utility rights-of-way, fire lanes, athletic fields, and golf courses. Landscape planting to improve appearance, the removal of landscape trees, and agricultural processes all occur regularly at IAAAP. All these activities have the potential to affect NRHP-eligible properties if within the APE, as well as TCPs and sacred sites both within and potentially outside of the APE. Erosion control measures such as dams, contouring, and ground cover planting could also potentially affect cultural resources.

#### 3.3.3.3 Maintenance and Repair of Infrastructure

The regular repair and maintenance of infrastructure can result in effects to NRHP eligible properties. Earth-moving activities could disturb archeological sites, and aboveground repairs, if not in keeping with architectural elements of the original structure, can affect the viewsheds of historic buildings or districts. IAAAP regularly maintains and repairs roads, bridges, railroads, and overpasses; buried water, sewer, and gas pipes; electric, cable, telephone, and fiber optic lines; aboveground steam pipes and electric, cable, fiber optic, and telephone lines; and signs and fences.

#### 3.3.3.4 Recreation

NRHP eligible properties (if within the APE), as well as TCPs, sacred sites (both within and potentially outside of the APE), especially archeological sites, can be indirectly affected by public use of previously established recreational facilities such as parks, trails, and picnic, hunting, and camping areas. Such areas facilitate the casual collection of surface artifacts, and the degradation of stream banks that may contain archeological deposits.

#### 3.3.3.5 Testing and Training

The Iowa Army National Guard (the Guard) 524.1-acre tract southwest of Line 3A is currently closed to use by heavy equipment. An additional 144.7-acre training area is located near Mathes Lake. Guard training on these tracts was regarded by SHPO on October 3, 2000 as having “No Adverse Effect” on IAAAP resources. Provisions in an EA for such lands regulate various Guard missions and training conditions.

The areas established prior to 2010 for use as testing tracts for live munitions are significantly disturbed and therefore cultural resource surveys are not needed. However, NRHP-eligible properties within the APE, as well as TCPs or sacred sites within the APE and potentially outside of the APE may still be affected by ground-disturbing activities. Cultural resources investigations were conducted in 2010 for the establishment of a new 40-mm test range.

## 3.4 CURRENT MANAGEMENT PRACTICES

*This section summarizes the current process by which cultural resources at Iowa Army Ammunition Plant are being managed.*

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### 3.4.1 Personnel

One person, who serves as the IAAAP Natural Resources manager as well, conducts the management of cultural resources at IAAAP with assistance from the Operating Contractor as appropriate. The CRM is responsible for determining the APE for each undertaking, identifying and evaluating significance, assessing effects, and consulting with SHPO and other designated participants.

A complete list of archeological sites and buildings on IAAAP, with their National Register evaluations, are provided in Appendix C. As of 2012, only one archeological site has been determined eligible for the NRHP. A total of 957 buildings and structures at IAAAP are considered “eligible for the purposes of a program alternative,” or ELPA, as the result of two 2006 Program Comments.

### 3.4.2 Review of Undertakings

As the contractor-operator at IAAAP, the Operating Contractor has the overall responsibility for installation operations under a “facilities use” contract. However, since IAAAP is a government-owned facility, responsibility for the whole of IAAAP ultimately rests with the Army.

At IAAAP, the installations NRM also serves as the CRM. CRM duties at IAAAP are split to provide full installation coverage. CRM duties at IAAAP are additional duties to already existing positions. While the NRM serves as the overall CRM the NRM focus is on possible impacts to archeological resources. The Chief of Contract Administration also serves as RPAO who reviews requests for the modification of facilities for possible impacts to structures to include cultural and historical impacts. The NRM and RPAO work together to provide full installation coverage.

Non-routine undertakings such as new constructions (buildings or roads), demolitions, and relocations of buildings, are reviewed for possible adverse effects to cultural resources by submitting Dig Notices to the CRM and Modification Requests to the RPAO.

Currently, 957 buildings and structures at IAAAP are assigned the code ELPA (eligible for the purposes of a program alternative) as the result of two 2006 Program Comments between the DOD and ACHP. The program comments provide mitigation for eligible ammunition storage and production facilities and plants. Under the program comments, the DOD and Army have met Section 106 responsibilities regarding effects of the following management actions on World War II and Cold War Era ammunition storage facilities and ammunition production facilities and plants that may be eligible for National Register listing:

* Ongoing operations;
* Maintenance and Repair;
* Rehabilitation;
* Renovation;
* Mothballing;
* Cessation of Maintenance;
* New Construction;
* Demolition;
* Deconstruction and Salvage;
* Remediation Activities; and
* Transfer, Sale, Lease, or Closure of such facilities.

As of 2012, cultural resources procedures consisted of development of dig notices and land use procedures and controls by the CRM. Additionally, the CRM currently manages tillage procedures to sites already considered plow zones and avoidance of existing sites.

### 3.4.3 Agency Agreements

IAAAP currently has no MOAs concerning the management of cultural resources. In 2006, two separate PAs between DOD and ACHP were released that effect mitigation for Section 106 procedures at IAAAP. Program Comment for World War II and Cold War Era (1939-1974) Army Ammunition Production Facilities and Plants and Program Comment for World War II and Cold War Era (1939-1974) Ammunition Storage Facilities both state that if the Army follows the Program Comments, it will meet the responsibilities for compliance under Section 106 regarding the effect of several management actions on such World War II and Cold War Era buildings and structures that may be eligible for National Register listing.

An MOU has been completed between IAAAP and the University of Iowa, Office of the State Archeologist. The MOU facilitates the curation of archeological material recovered at or sponsored by IAAAP.

A Programmatic MOU between the Iowa SHPO and IAAAP has been drafted. The purpose of this MOU is to reduce Section 106 review for agricultural activities that meet qualifying criteria. The criteria stipulate that:

* Agricultural practices take place on existing cultivated lands; or
* Projects don't involve any ground disturbing activities on previously identified sites below the plow zone; or
* Cultivation of new ground is done on lands that have been previously disturbed and/or surveyed for cultural resources and determined to contain none of significance.

In addition, the Programmatic MOU outlines typical agricultural activities that can be excluded from Section 106 review. These include:

* No-till, conservation-till, or other tillage operations on agricultural fields that have no known archeological sites and/or have been severely disturbed from past land practices; or
* No-till or conservation till agricultural practices on areas with known archeological sites; or
* No-till agricultural practices on fields subject to moderate to sever erosion due to % slope of field; or
* Harvesting of crops; or application of pesticides, fertilizers, or water onto the fields, as long has there are no changes in application methods or significant increases in fertilizer use; or
* Mowing of roadside vegetation; or
* Routine maintenance of the access roads with no previously identified archeological sites; or
* Installing or repair of field tile and waterways in areas with no previously identified archeological sites; or
* Conventional tillage for establishment of hay crops or small grains.

The MOU has not, as yet, been finalized.

## 3.5 HISTORIC OVERVIEW

*This section reviews the past human habitation of the Iowa Army Ammunition Plant from the earliest arrival of people to the twentieth century.*

### 3.5.1 Prehistoric Period

This discussion of southeastern Iowa prehistory is based on the original Cultural Resource Management Plan (Geo-Marine 1996) and an additional plan compiled in 2001 (Peyton 2002). These two works utilized a number of studies, including: Griffin 1967; Morrow 1984 a and b; Goodyear 1982; Bell 1958; Chapman 1975; Dumont 1981; Hayden 1982; Warren and O’Brien 1982; Brown and Viterra 1983; Warren 1982; Conrad 1981; McElrath 1993; McElrath et al. 1984; Hall 1977; Hall 1980; Benn 1984, 1986; Benn et al. 1988; Benn 1989; Gibbon 1986, 1974; Henning 1970; Asch and Asch 1985; Benn and Rogers 1985; Green 1987; Kelly et al. 1984; McConnaughy et al. 1985; Tiffany 1979; Moffat and Moffat 1988; and Markman 1991.

The earliest accepted date of humans settling North America is about 10,000 B.C. While there are some sites that have been dated earlier, it is apparent that human beings were occupying North America by this date. It is also generally accepted that humans first came to North America from Siberia through the Bering Strait. Due to the glacial ice of the Middle and Late Wisconsin age, the sea level was lower than it is today. Geologic evidence indicates that the lower sea level exposed a land bridge between North America and Siberia, which allowed humans to cross. From this point, humans eventually migrated into present-day Iowa.

The prehistory of southeastern Iowa is divided into four broad periods: the Paleoindian (10,500-7500 B.C.), Archaic (7500-800 B.C.), Woodland (800 B.C.-A.D. 1000), and Mississippian (A.D. 1000-1700). Within these four broad time periods, shorter phases are discussed. Generally speaking, over time there was a gradual increase in social complexity and accompanying cultural and technological change. Paleoindian people hunted large game; however, environmental changes precipitated a shift to hunting and gathering in the Archaic period. The Woodland Tradition was much different than the preceding periods with the introduction of pottery, the bow and arrow, and more advanced horticulture. During the Mississippian, tribal social organization emerged.

#### 3.5.1.1 Paleoindian Period (10,500-7500 B.C.)

The Paleoindian period extended from 10,500-7500 B.C. After the retreat of the glaciers approximately 13,000 years ago, environmental changes ensued and Paleoindian people were the first to inhabit the Iowa area. It is generally thought that Paleoindians hunted megafauna; however, fewer than 100 archeological sites are associated with these now extinct megafauna, making study and inference difficult and problematic (Krech 2012). In the Upper Mississippi River Basin, it is thought that Paleoindians roamed the boreal forest hunting megafauna, such as mastodon, mammoth, and moose elk. It is probable that they hunted smaller animals as well: perhaps deer, wolf, moose, elk and bison. It seems likely that Paleoindians utilized aquatic resources as well, though this is not documented.

The finely flaked lanceolate projectile point, most notably the fluted point, is the primary technological remnant of the Paleoindian period. Early points exhibit fluting, while later points do not (Geo-Marine 1996). Other artifacts of the period include transverse side scrapers, spurred end scrapers, drills, knives, blades, retouched flakes, and choppers (Peyton 2002). Towards the end of the Paleoindian, woodworking tools are utilized (Geo-Marine 1996) and more stemmed varieties of points are found (Cunning et al 2009). One Paleoindian site has been excavated in Iowa, though surface finds are more common (Cunning et al. 2009).

#### 3.5.1.2 Archaic Period (7500-800 B.C.)

The Archaic period (from about 7500-800 B.C.) showed a gradual transition from the Paleoindian period. The main difference between the Early Archaic and the Paleoindian stage is the method of producing stone tools and a less nomadic existence. In addition, population appears to have grown (Cunning et al. 2009). The Archaic is generally divided into Early, Middle, and Late.

#### 3.5.1.2.1 Early Archaic (7500–5000 B.C.)

Evidence suggests that hunting megafauna was no longer the main subsistence strategy and bands of people began to move seasonally through a territory. The warmer Holocene temperatures allowed a more diversified subsistence strategy of hunting and gathering in the Plains and Midwest. It is posited that Early Archaic people lived in small, extended family bands of approximately 20 people and roamed over a range hunting and gathering what was available seasonally (Peyton 2002). They did rely on a wider range of food resources, but bison were still hunted in the plains and prairies and deer in the woodlands. The chipped stone tool technology became more varied and included side notched and stemmed point types (Dalton, Graham Cove Notched, Hardin Barbed, Riced Lobed, St. Charles Notched). Beveled blade edges and basal grinding was also noted. Other artifacts that first appeared in the Early Archaic include: bannerstones, which may have served as atlatl weights, grinding stones, and ground stone tools like axes (Peyton 2002). Base camps that were occupied on a semi-permanent basis are known during this time. Cemeteries with grave goods such as shell, copper, and non-local chert, are documented during the Early Archaic as well. In Iowa, many surface sites date to the Early Archaic (Cunning et al. 2009).

#### 3.5.1.2.2 Middle Archaic (5000-2500 B.C.)

The Middle Archaic (5000-2500 B.C.) period was one of gradual change, adapting to a wooded environment. Floral and faunal remains indicate the Middle Archaic population relied on a diet rich in forest animals, as well as tree nuts, seeds, mussels, fish, and other river animals. There is evidence that though people still moved around foraging for food, some long term base camps were established to take advantage of abundant natural resources (Brown and Vierra 1983). It has been suggested that high terraces and the bases of bluffs were often occupied, perhaps due to drier climatic conditions around 6000-3000 B.C. in the Hpysithermal (Warren 1982). The tool kit and other artifacts associated with the Middle Archaic evidence organization and ability to exploit the environment. Artifacts are diverse and include fabrics, baskets, sandals and other unstable items as well as a wide variety of stone tools. Stone tools include: axes, plummets, hematite tools, grindings stones and slabs, winged “T” drills, scrapers, bannerstones, large bifaces, and specialized flake tools. In addition bone pins and shell ornaments are found (Peyton 2002). Point types include medium stemmed and corner notched points such as Jakie; however, later the side notched ypes like Matanzas and Raddatz/Godar points were more common (Cunning et al. 2009). No Middle Archaic sites have been documented in the IAAAP area and the area may not have been utilized during this time (Cunning et al. 2009).

#### 3.5.1.2.3 Late Archaic (2500-500 B.C.)

There is evidence for increasing variation in the Late Archaic, both in regional and chronological terms (Peyton 2002). Five complexes, or phases, are identified for the region based on projectile point types. The Helton phase (3500-2000 B.C.) in the Lower Illinois Valley, was a transitional period, connecting the Middle to the Late Archaic. Small to medium side notched points, winged “T” drills, grooved axes, large scrapers, bifaces, and ground stone ornaments such as plummets are indicative of the phase (Conrad 1981; Peyton 2002). The Hemphill phase (2950-2250 B.C.) defined initially in west central Illinois may overlap the Helton phase or come after it. Diagnostic artifacts include deeply side notched Godar, Raddatz, and Osceola points. In addition, winged drills, large bifaces, scrapers, grooved axes, plummets and other grinding tools are found (Conrad 1981). The Titterington phase (2200-1800 B.C.) is defined for the American Bottom and Lower Illinois River Valley and is evidenced by gouges, drills, heavy scrapers, axes, and grinding tools (McElrath 1993; McElrath et al. 1984). Generally referred to as a Stemmed Point Complex (1500-800 B.C.), the fourth complex is defined by Table Rock Stemmed, Durst Stemmed, Tipton, Merom, and Trimble points in the American Bottom and Upper Mississippi Valley (Morow 1984). Though some of these points types are found in Iowa, the phase is not clearly defined. The Terminal Late Archaic has been defined for the American Bottom and is called “Prairie Lake” (900-500 B.C.) (McElrath et al. 1984). During this time, straight stemmed Dryoff and Springly points and expanding stemmed Mo-Pac points, along with scrapers, drills, gravers, celts, metates, pipes, plummets, galena, worked hematite are found (Peyton 2002).

#### 3.5.1.3 Woodland Period (800 B.C.-A.D. 1000)

The manufacture of pottery, the use of bow and arrow, and the development and expansion of horticulture are hallmarks of the Woodland period. The development of these three things brought change in economic, social, and political realms (Peyton 2002). The Woodland period is divided into Early (800 B.C.-A.D. 200), Middle (A.D. 200-650), and Late (A.D. 650-1000).

#### 3.5.1.3.1 Early Woodland (800 B.C.-A.D. 200)

A major technological change during the Woodland period is the advent of pottery production. The first vessels were small and crude with thick walls and heavy temper. Wide mouthed conoidal, shoulder-less jars with flat (Marion Thick) or pointed (Liverpool) bases could be heated for cooking (Peyton 2002). Fewer sites are found in upland environments, which may foreshadow the later shift to river valley occupations seen in the Middle Woodland (Peyton 2002). The presence of exotic materials suggests inter-regional trade (Perry 1996). In addition, mound construction, more permanent settlements, and the inception of agriculture begin during this period (Cunning et al. 2009). Kramer points are diagnostic for the Early Woodland and though horticulture is evident it does not appear to have played a major role in subsistence at this time (Cunning et al. 2009).

#### 3.5.1.3.2 Middle Woodland (A.D. 200-650)

Benn (1986) described the four trait complexes for the Middle Woodland: technological innovation (bow and arrow, ceramic), elaborate ritual activity (mound construction), larger groups of people conducting more labor intensive subsistence practices, and population increase (Peyton 2002). During the Middle Woodland, rights to territories were often fortified by mound construction, the creation of “cult” objects such as human figurines, platform pipes, and specific point and ceramic styles. Exotic materials (grizzly bear teeth, galena, obsidian, mica, marine shell, copper and pipe stone) were also exchanged throughout the region and beyond (Peyton 2002; Perry 1996). This trade of exotic materials is often referred to as the Hopwellian Interaction Sphere (Perry 1996). Burials could be elaborate with limestone caps or cobbled enclosures within earthen mounds (Peyton 2002). The Toolesboro Mounds State Preserve in southeastern Iowa dates to the Middle Woodland and contains individuals buried with finely crafted pottery, stone tools pipes and items of exotic raw materials and may symbolize class differentiation (Perry 1996).

#### 3.5.1.3.3 Late Woodland (A.D. 540-1000)

Though regional interaction continued, exotic trade declined in the Late Woodland (Perry 1996). Small dispersed settlements were common, though larger habitation sites were known. As Petyon (2001:3-9) stated “the purported fissioning of productive units during the Late Woodland period has been described by many researchers (e.g., Asch and Asch 1985; Benn and Rogers 1985; Green 1987; Hall 1980; Kelly et al. 1984; McConnaughy et al. 1985; Markman 1991)”. This breakdown of the Hopewellian Interaction Sphere resulted in less elaborate ceramics and burials. However, some new innovations are noted, such as the bow and arrow. The use of the bow and arrow significantly altered hunting and may have increased warfare. Klunk and Koster point types are side and corner notched, respectively, and were used as arrow points. Later, more simple triangular formed Madison points were utilized (Cunning et al. 2009). Pottery becomes thinner walled and is often punctated, cord marked, cord impressed, or cord roughened. More processing areas for plant foods are noted, with domesticated plant remains, including maize, found at a growing number of sites (Cunning et al. 2009).

### 3.5.2 Late Prehistoric Culture (A.D. 1000-1650)

Over much of the eastern United States, tribal organization is common at this time. In the Midwest, the Mississippian and Oneota complexes are well defined as tribal societies; however, the paucity of archeological research in the eastern Iowa area limits what is known about the area at this time. Though the Oneota tradition dominates eastern Iowa there are certain areas with no artifacts dating to this time period, begging the question of weather these areas were utilized at that time (Peyton 2002). The Late Prehistoric period in Iowa includes four distinct cultures: Great Oasis, Mill Creek, Glenwood, and Oneota (Alex 2000).

The four Late Prehistoric Cultures mark the introduction of semi-permanent villages centered on corn farming. In addition, the introduction of maize and bean agriculture solidified the semi-permanent village settlement pattern. Great Oasis sites have been discovered along lakeshores and floodplains of rivers and streams. Seasonal campsites during the summer with communal bison hunts characterize the pattern of settlement for the Great Oasis culture, as well as the Mill Creek culture. Mill Creek villages were located in northwest Iowa, and consisted of individual earthlodges and internal storage pits (Alex 2000; Schermer et. al. 1995).

Maize horticulture, along with hunting and foraging, were typical of the Oneota culture (Benn 1989; Gibbon 1974; Henning 1970). Shell tempered pottery with trailed designs, small triangular points, and large villages with storage pits and trade materials are indicative of the period (Peyton 2002). Tiffany's (1979, 1982b) overview of 22 Oneota sites around Burlington, led to the description of two phases: Burlington (A.D. 1300s) and Kelley (A.D. 1500s). Others (Moffat and Moffat 1988) suggested that Moingona phase occupations are between A.D. 1100 and 1420. Major sites types are large villages and small habitation sites. Two alternatives have been suggested to explain these living situations. In the first model, the villages are the base camps with smaller sites used as seasonal habitations for that same group. Alternatively, the village is surrounded by hamlet occupations (Peyton 2002).

### 3.5.3 Contact Period (1682-1832)

The Illniwek, Ioway (Iowa), Sauk (Sac), and Fox tribal entities occupied southeastern Iowa during the Contact period. The Mississippi River and its tributaries were home to many of these tribes and their subtribes, or bands. The Ioway and Sauk lived near the mouth of the Des Moines River and near the American Fur Company trading post at Fling Hills (now Burlington) in the late eighteenth and early nineteenth centuries. A series of treaties with the U.S. government ended Native sovereignty between 1825 and 1832.

The Illiniwek inhabited the Upper Mississippi Valley in southeastern Iowa and the French were the first to encounter them around 1670 (Calendar 1978; Temple 1966; Peyton 2002). The Illiniwek eventually banded together in large villages along the Illinois River, having sought protection from the French by aligning with them. The Iroquois War displaced many of the Illiniwek, who “seem to have withdrawn from their trans-Mississippi territories before 1700” (Peyton 2002:3-11). Temple (1966) and Calendar (1978) both suggested that the Illiniwek cultivated corn, beans, and squash. Horses and firearms aided in large-scale bison hunts. They occupied long houses in villages, with temporary summer housing in the uplands and temporary camps used for hunting, trapping, and trading (Peyton 2002).

Sometime prior to 1700, the Ioway moved west into areas including the Mississippi River Valley (Tucker 1942). In addition to maize and bison, they relied on trade to diversify their diet. During the War of 1812, they sided with the British but were severely affected by European wrought disease. Treaties between 1824 and 1830 involved cessation of land to the U.S. and their move to a reservation west of the Missouri River in Kansas (Peyton 2002).

The Fox and the Sauk were both Algonquin tribes. The Fox were involved in the only documented military altercation between Native Americans and Europeans during the colonial period (Peyton 2002). The Fox began to raid Native American (Ojibwa and Eastern Dakota) fur traders using the Fox-Wisconsin waterway, which connected the Great Lakes to the Upper Mississippi River. The French, along with their Native allies, “assaulted a Fox and Sauk winter bivouac on the Des Moines, 60 leagues above its junction with the Mississippi” (Peyton 2002; Temple 1966).

Originally from the Green Bay area, conflicts caused the Sauk to join the Fox to resettle along the Upper Mississippi River. The Sauk and the Fox combined forces and controlled most of eastern Iowa by the late 1700s (Petyon 2001). New tensions regarding the pelt and fur trade after the Louisiana Purchase led to aggressive attacks and counter-attacks, with Europeans favoring and threatening Native American removal from the area.

### 3.5.4 Historic (Pre-IAAAP Era)

#### 3.5.4.1 Southeastern Iowa and the Upper Mississippi Valley Borderlands (1682-1832)

Jesuit missionary Pere Jacques Marquette and French trader Lois Joliet were the first known Europeans in Iowa and the first to enter the Fox-Wisconsin waterway trade route in the summer of 1673. Spurred by this initial foray into the area, by the early 1700s fur trade and missionary work was being conducted up and down the Mississippi River. Fur trade in the Upper Mississippi Valley, controlled by the British, was taken over by Americans when the British abandoned posts in the southwestern Great Lakes. Between 1785 and 1822, Fort Madison (1808) and Prairie du Chien (1816) were used to establish factories, as the “United States attempted to monopolize the western fur trade” (Peyton 2002). St. Louis became the main hub for fur trade in the area after the War of 1812.

#### 3.5.4.2 Euro-American Immigration and Settlement (1830s-1940s)

The Midwest was settled originally through waterways, as the first major settlements were on major rivers and streams, including the Mississippi, the Skunk, and the Des Moines. An environment containing both forest and prairie was considered most desirable because of timber resources and fertile soils. Hence, open prairie lands were not settled until the late 1830s (Peyton 2002).

The next phase of settlement is referred to as “spread” phase (Hudson 1969) and took place between 1830 and 1870. Widespread immigration, commercial agriculture, and railroad construction are the hallmarks of the era. To keep up with demand for moving agricultural products, transportation had to be improved. By the 1860s, railroads were being constructed west from Burlington. As Peyton (2001) noted, “land speculation ran high and reached epidemic proportions during the years leading up to the panics of 1837 and 1857.” The number of farmsteads in the IAAAP area was at its peak.

The method for land parceling was outlined by the Land Ordinance of 1785 and included “rectangular rather than metes and bounds surveys based on 6-mile square townships of 36 640-acre sections; reservation of part of the public domain for financing education; and the sale of public lands to private owners in fee simple. Land was auctioned off by the General land Office at prices starting at $1.25 an acre with a minimum parcel size of 40 acres” (Peyton 2002:3-15). Real estate speculation, along with claim jumping, trick resales, and false claims, were part of frontier society (Antrobus 1915; Billington 1945). Peyton (2001:3-15) stated that “a cursory review of land entry records suggests that a significant proportion of the original land claims in the Des Moines County region were made for speculative purposes”.

Hudson calls the next era the “competition” phase, which spanned the 1870s. The decline of wheat production, coupled with a call for greater crop diversification, led agriculturalists to corn farming. Corn was used to feed livestock and people (mostly as corn meal). Corn was a diet staple during these times (Anderson and Brown 1952; Hewes and Jung 1981).

The aforementioned railroad development, along with agricultural endeavors and a steady stream of immigrants, combined to spur urban growth in the late nineteenth and early twentieth century. Manufacturing grew after the 1870s and the automobile and the construction of new roads and highways made travel and marketing easier. By around 1920, corn and soybeans were the principal crops and were fed to cattle and hogs. Though much of the corn was used to fed livestock, corn was shelled, dried, and ground into meal for human consumption. Around this time, population growth peaked in the area.

### 3.5.5 History of the IAAAP

The lack of military ammunition facilities in the United States during the 1940s, with the threat of war looming, was problematic. As noted in Peyton (2001:3-17), Thomson and Mayo stated:

Only a handful of small plants were making propellant powder and high explosives, and there were virtually no facilities for the mass loading and assembling of heavy ammunition. American industry was just beginning, through educational orders, to learn techniques for forging and machining shells and producing intricate fuze mechanisms. The only sources for new artillery ammunition wereFrankford and Picatinny Arsenals, while a few ordnance depots were equipped to renovate old ammunition. Private (military) ammunition plants did not exist, and, because of the specialized nature of the process, there were no commercial plants that could be converted to ammunition production.

Between the summer of 1940 and December of 1942, the U.S. Ordinance Department created 60 plants to help build bombs, mines, artillery shells, and other explosives. These facilities were required to meet the following parameters for safety and efficiency (Peyton 2002):

* Should be a mid-continent site, in order to insulate it against enemy bombardment;
* Should be in close proximity to rail lines
* Should have available water and power supplies adequate for the load-pack-assembly process;
* Should have an adequate labor pool close at hand;
* Should be remotely situated from large population centers; and
* Should have large tracts of land available in order to permit safe distance buffers between both plant and storage facilities.

The IAAAP was one of the first of these facilities constructed. The outskirts of Burlington, Iowa met the above listed criteria, as it was in the middle of the U.S., had access to rail lines, was located along two sources of water (the Mississippi and the Skunk rivers), had a population of about 25,000, and was surrounded by farmland (Peyton 2002). The government purchased approximately 20,000 acres and in 1941, construction began and was completed nine months later. The government condemned 200 farmsteads, six school districts, churches, cemeteries and the Des Moines County indigent farm (Peyton 2002). The majority of buildings were razed; however, the Shiloh Church Cemetery was saved after public outcry (Peyton 2002). Day and Zimmermann of Philadelphia operated the plant. Though World War II ended in 1945, and Day and Zimmermann's contract ended in 1946, the plant continued to churn out products through the Korean Conflict in the late 1940s. The plant was operated by the government until January of 1951 when Silas Mason Company of New York became the new manager (Peyton 2002). In 1947, the Silas Mason Company had run a classified line for the Atomic Energy Commission. Nuclear grade weapons were produced at IAAAP until 1975 (Peyton 2002).

Between the end of the Korean Conflict and the beginning of the Vietnam War, production of conventional weapons at the Plant was light. However, by 1967, “production and employment figures far surpassed even those set during the Korean Conflict” (Peyton 2002:3-20). Having been in operation for over 25 years, machinery and equipment was beginning to age and parts became harder to find. Major renovation and updating was undertaken in the early 1970s. Some areas were completely rebuilt, while others were tweaked to accommodate new products, such as anti-armor munitions and guided missile warheads (Peyton 2002).

American Ordinance, the current contractor-operator of the IAAAP, is a major manufacturer of military ammunition for the government, overseeing 41,000 acres of government owned property and producing more than 15 million rounds per year (American Ordinance 2012). American Ordinance oversees operations and privatization of parts of the Plant; some of the production facilities are available to lease. They also seek bids on raw land within Plant boundaries (Peyton 2002). In addition, they provide x-ray, chemistry, environmental, and meteorology labs, secured storage space, conduct research and development, and test fire procedures (Peyton 2002).

## 3.6 NATIVE AMERICAN GROUPS

*This section summarizes those Native American tribes that have an interest in the prehistoric cultural resources of Iowa Army Ammunition Plant.*

### 3.6.1 Ethnohistorical Overview

The following federally recognized groups have primary interest in IAAAP (see Appendix B):

Iowa Tribes

* The Iowa Tribe of Kansas and Nebraska
* The Iowa Tribe of Oklahoma

Sac and Fox Nation

* The Sac and Fox Tribe of the Mississippi in Iowa
* The Sac and Fox Nation of Missouri
* The Sac and Fox Nation of Oklahoma

There are other tribes that could potentially have interests in sites and places that have traditional religious and cultural importance in the area of IAAAP; these tribes will be consulted with as appropriate.

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#### 3.6.1.1 The Iowa Tribes

While the word Iowa is derived from the French term for “tribe,” the Iowa people historically referred to themselves by a term meaning gray snow: “Bah-kho-je.” This term was likely taken adopted due to their dwellings, which were often covered in soot-tinted snow in the winter months. The Iowa tribe, whose language is a Chiwere dialect of the Sioux dialect, located to southeast Iowa and the banks of the Des Moines River sometime in the late eighteenth century. A hunter-gatherer economy sustained the Iowa tribe, who relied mainly upon bison and maize cultivation, but also supplemented their way of life by trading within the French trade network (Waite 1996).

With onslaught of Euro-American diseases, combined with continued harassment by other Native American groups, the role of the Iowa tribe in trade and diplomacy dwindled. As white settlers encroached upon the Iowa, their lands were ceded in 1824, and again in 1836 and 1838. The Iowa tribe lands were reduced to a strip of land near the Missouri River in Kansas. This strip was shared with the Sac and Fox tribe, which caused discontent amongst portions of the relocated groups. Permission was granted to the disgruntled to relocate into the Oklahoma Indian Territory in 1878. As a result of this relocation, there are now two branches of the Iowa Tribe (Peyton 2002).

#### 3.6.1.2 Sac and Fox Nation

Though commonly known as the Sac and Fox Nation, this Algonquian people indigenous to the Western Great Lakes Region is federally recognized as the “Sac and Fox Tribe of Indians of the Mississippi River in Oklahoma.” Though similar in culture, customs, and language, the Sac and Fox were two distinct tribes. The Sac (Sauk), or Thakiwaki (meaning “people coming forth from the water”), and Fox, or Meskwaki (meaning “people of the red earth”) was a misnomer applied by the U.S. government during treaty negotiations in 1804 (McCollum n.d.).

The Sac and Fox, like the Iowa tribe, also augmented their hunter-gatherer economy by the fur trade. By the middle of the eighteenth century, the Sac and Fox had relocated from their indigenous lands to southeast Iowa. With white settlement, however, the two tribes were to be relocated once again to Kansas, and then to the Indian Territory in the 1870s (McCollum n.d.).

Today, the Sac and Fox tribes are recognized under the broader term “Sac and Fox Nation.” The Nation subdivisions with an interest in IAAAP are the Sac and Fox Tribe of the Mississippi in Iowa, the Sac and Fox Tribe of Missouri, and the Sac and Fox Tribe of Oklahoma.

### 3.6.2 Federal Recognition

The Iowa Tribes and the Sac and Fox Nation are Federally recognized tribes with affiliations to the IAAAP region. As described in Section 3.6.1, the Iowa Tribe and Sac and Fox Nation both once inhabited the area presently occupied by IAAAP (Waite 1996; Peyton 2002; (McCollum n.d.). Appendix B contains the name and address of the Iowa Tribe and Sac and Fox Nation points of contact for NAGPRA consultation with IAAAP.

# 4.0 INVENTORY

This section presents a summary of the cultural resources known to exist at IAAAP. The section is organized in three major elements:

* *A discussion of significance standards* (see Section 4.1) delineates specific criteria for assessing the NRHP eligibility of all cultural resources that are found at IAAAP. Significance standards are defined for architectural properties, historic and prehistoric archeological sites, as well as cultural properties and sacred sites;
* *A discussion of previous work* (see Section 4.2) summarizes earlier management plans, inventories, surveys, NRHP eligibility assessments, and other cultural resource studies that have been conducted at IAAAP; and
* *An inventory review* (see Section 4.3) summarizes IAAAP known cultural resources, including buildings, structures, archeological sites, cemeteries, and other types of properties. This section is a synthesis and should not be used as primary data; in every case, the management of particular resources should refer to and use the primary documents, including site reports, maps, and databases.

## 4.1 CRITERIA FOR ESTABLISHING SIGNIFICANCE

*This section specifies NRHP eligibility standards at Iowa Army Ammunition Plant for both architectural properties and prehistoric and historic archeological sites. A discussion of significance criteria for traditional cultural properties is also included.*

Cultural resources include a variety of types. In general, a cultural resource is any place, site, building, structure, or object, or collection of these, that was built or fashioned by people. Not all cultural resources belong to the more restricted class of historic properties. Historic properties are those resources that are actually listed on the NRHP, as well as those not yet listed but that are eligible for listing. Other types of cultural resources may include TCPs and sacred sites. To be eligible for or listed on the NRHP, a property would normally be at least 50 years of age before consideration. However, a property can be more recent (less than 50 years of age) if it meets the criteria for exceptional significance (see Section 4.1.2.3).

The NRHP is the official Federal list of cultural resources important to American history, archeology, and culture. It consists of districts, sites, buildings, structures, landscapes, and objects significant in American history, architecture, archeology, engineering, and culture. One kind of cultural significance a property may possess, and that may make it eligible for inclusion on the NRHP is traditional cultural significance. All NRHP properties have been found to be significant to the prehistory or history of their community, state, or the nation. In states with approved state historic preservation programs, the State Review Board reviews and approves National Register nominations before they are submitted to the NPS.

### 4.1.1 Types of Cultural Resources

A *site* is the location of a prehistoric or historic event or occupation. Some sites are historical in character, such as a famous battlefield (Gettysburg), the place of a significant treaty signing (Guadelupe Hidalgo), or the place of an important event. Many other sites are archeological in character. For these sites, minimal (or no) written or historical information exists and their importance must be determined through archeological examination. More than 300 archeological sites are known to exist at IAAAP, but not all are NRHP eligible (these are discussed in Section 4.3.2 below). The site of a TCP does not have to be the product of, or contain, the work of human beings in order to be classified as a property. Therefore, a TCP may be classified as a “site” as long as it was the location of a significant event or activity, regardless of whether the event or activity left any evidence of its occurrence.

A *traditional cultural property* is a location defined by local culture or by religious beliefs. It may be evidenced by a ring of stones on a sacred knoll or hill top, it may be a distinctive natural feature such as spring or mountain, or it may be a zone or district where subsistence resources, such as nuts and game, or sacred items, such as eagle feathers and quartz crystals, were traditionally collected or gathered. TCPs may also include buildings and structures; however, not all TCPs are eligible for the NRHP. TCPs are also protected under AIRFA, EO 13007, and NEPA. No traditional cultural places are known to exist at IAAAP.

A *building* is a structure created to shelter human activities such as a house, barn, or factory. If the building is in such total disrepair to be considered a ruin, then it may be considered to be an historic archeological site. Historic buildings may be in the same place as a site and the building may or may not be related to the site. For example, a 1880s church may be associated with the site of a historic cemetery and be unrelated to a 3,000-year-old Native American encampment buried beneath the cemetery. Buildings may also be TCPs.

A *district* is a geographically definable area with a concentration of cultural resource properties that are united by past events, or aesthetically by plan or physical development. Most often, districts contain several historic buildings, such as the Hancock Shaker Village in Massachusetts. However, TCPs consisting of a concentration, linkage, or continuity of buildings or structures may also be classified as a district. Districts may be eligible for the NRHP. While at one time, the Iowa SHPO suggested that the entire IAAAP facility is eligible as a district, no formal determination or survey of such a district has yet been made.

A *structure* is an engineering edifice designed to aid human activities, such as a road, bridge, or canal. Military structures include communication antennas, launch vehicle test stands, and other engineered facilities. Many historic structures exist at IAAAP. Again, structures may also be classified as TCPs.

The term *object* is used to distinguish from buildings or structures those constructions that are primarily artistic in nature or are relatively small in scale and simply constructed. Although it may be, by nature or design, movable, an object generally must be associated with a location from which it derives its significance. Its value as a cultural resource may be functional, aesthetic, cultural, historic, or scientific, or a combination of these. An object may also be classified as a TCP if it is associated with a significant tradition or use. Examples of objects include military weaponry such as a cannon or missile, prehistoric artifacts, historical items such as documents or a church bell, and Native American sacred. No such objects have been identified to date at IAAAP.

### 4.1.2 NRHP Significance Criteria

To be listed in the NRHP, properties (including sites, buildings, structures, objects, and TCPs) must have both physical integrity and historic significance (36 CFR Part 60). Integrity is the authenticity of a property’s historic identity and is evidenced by the survival of physical characteristics that existed during the property’s prehistoric or historic period. Qualities that make up integrity include location, design, setting, workmanship, feeling, or association. A property must resemble its historic appearance as well as its physical materials, design features, and aspects of its construction dating from the period it attained its significance. For archeological sites, integrity is the degree to which remaining evidence can provide important information.

Historic significance is the importance of a property to the history, architecture, archeology, engineering, or culture of a community, state, or the Nation. In addition to physical integrity, there are four Criteria for Evaluation, designated Criteria “A” through “D”. A property must meet at least one of the following criteria for listing in the NRHP (36 CFR 60.1; National Register Bulletin 15, 16B:

1. Be associated with historic events or activities that have made a significant contribution to the broad patterns of our history;
2. Be associated with the lives of persons significant in our past;
3. Embody the distinctive characteristics of a type, period, or, method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguished entity whose components may lack individual distinction; or
4. Have yielded or be likely to yield important information about prehistory or history.

Properties that may be considered for evaluation include buildings, structures, objects, sites, districts, and TCPs. Buildings are created principally to shelter some form of human activity. Structures are made for purposes other than creating human shelter. Objects are primarily artistic in nature, are relatively small in scale, or are simply constructed. Although an object may be movable, it is usually associated with a specific setting or environment. Sites are locations of significant events, a prehistoric or historic occupation or activity, or a building or structure, whether standing, ruined, or vanished. The location itself possesses historic, cultural, or archeological value, regardless of the value of any existing structure or the property. Districts are a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development. Similar to historic properties, TCPs and sacred sites must be evaluated with reference to the NRHP Criteria for evaluation (36 CFR Part 60.1). The National Register Bulletin 38 outlines the steps necessary for such evaluations.

#### 4.1.2.1 Historic Context

The significance of a property is determined by historic context. A historic context is the interrelated set of conditions under which the property existed or was created or used. For NRHP purposes, historic context includes information about historic trends and properties that are grouped by an important theme in the prehistory or history of a community, state, or nation during a particular period of time. These are organized by theme, place, and time. Historians, architectural historians, folklorists, archeologists, and anthropologists use different words to describe historic context (e.g., trend, pattern, theme, cultural affiliation), but they all refer to the same concept. A fundamental premise to all these approaches to historic context is that resources, properties, and events in history do not occur in a vacuum. They are part of larger trends or patterns. To evaluate a property within its historic context, it is necessary to determine the following:

1. What facet of local, state, or national prehistory or history is represented;
2. Whether that facet is significant;
3. Whether the property has relevance or importance in illustrating the historic context;
4. How the property illustrates that historic context; and
5. Whether the property possesses the physical features necessary to convey the aspect of prehistory or history with which it is associated.

#### 4.1.2.2 Special Considerations

The following types of properties do not ordinarily qualify for inclusion on the NRHP: (1) cemeteries and the birthplaces or graves of historical persons; (2) properties owned by religious institutions and those used for religious purposes; (3) properties that have been reconstructed or moved from their original locations; (4) properties primarily commemorative in nature; and (5) properties less than 50 years old. However, these types of properties may be eligible for the NRHP if they are integral parts of eligible historic districts or if they fall under certain categories called “Criteria Considerations” (36 CFR 60.4; National Register Bulletin 15). The seven Criteria Considerations (A through G) are as follows:

1. A religious property deriving primary significance from architectural or artistic distinction or historical importance;
2. A building or structure removed from its original location but that is significant primarily for architectural value, or that is the surviving structure most importantly associated with a historic person or event;
3. A birthplace or grave of a historical figure of outstanding importance, if there is not an appropriate site or building directly associated with his or her productive life;
4. A cemetery that derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design feature, or from association with historic events;
5. A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived;
6. A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; and
7. A property achieving significance within the past 50 years if it is of “exceptional importance.” This consideration is discussed further below.

#### 4.1.2.3 Properties Less Than 50 Years Old

Generally, it is not possible to determine overall historic importance soon after an event occurs. For this reason, the arbitrary 50-year guideline was designed as a filter to ensure that enough time had passed to evaluate a property within its historic context. However, in rare cases, an event or building is so exceptional that it can be recognized well before the 50-year waiting period. In such cases, Criteria Consideration G is applied. If the exceptional significance of the property can be clearly documented, the property may be eligible for inclusion on the NRHP. Such nominations must clearly justify a building’s or event’s exceptional importance and must present sufficient evidence to permit a dispassionate evaluation of the property (Sherfy and Luce 1998).

### 4.1.3 Criteria for Architectural Properties

Buildings and structures may meet NRHP eligibility criteria, listed in Section 4.1.2, for their ability to convey significant information about events or patterns of events contributing to the understanding of American history, their association with the lives of significant persons in our past, their distinctive architectural characteristics, and information potential. A building, as identified in National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation (National Register of Historic Places 1997), is any construction that was primarily created to shelter human activities. The term “building” may also refer to a “historically and functionally related unit, such as a courthouse and jail or house and barn” (National Register of Historic Places 1997). The term “structure” is distinguished from a building by its functional construction, which is usually intended for a purpose rather than a shelter. For a building or structure to be eligible for the NRHP, not only must it be significant for at least one of the criteria for evaluation identified previously in Section 3.1.2, it must also retain its basic structural elements and overall historic appearance. Buildings and structures that fail to include all of their fundamental building elements are considered to be ruins and are classified as “sites.”

#### 4.1.3.1 Architectural and Historical Significance

Buildings and structures are eligible for NRHP listing meeting Criterion A, listed in Section 4.1.2, if associated with significant historical events. Properties that are identified as eligible under Criterion A should be discussed in consideration of an associated historic context. However, each property does not require its own historic context. Rather it needs to be demonstrated that the property is associated with some aspect or association that itself is considered important. Properties are eligible under Criterion A if they can be directly associated with an event or pattern of events that made significant contributions to the broad patterns or trends of American history. Eligible properties must also be associated with one or more events outlined in the historic contexts. As with all NR criteria, Criterion A requires that eligible properties retain historic integrity. Because Criterion A evaluates properties based on their “associative” value, it is necessary to determine the nature and origin of resources as well as their historic context(s) and individual histories as much as possible. The “mere association” with historic events or trends is not enough to nominate a property solely under Criterion A. The property must also be considered important for its specific association.

Buildings and structures that are eligible for NRHP listing because of their association with lives of persons significant in our past meet Criterion B (person), listed in Section 4.1.2. Person significant in our past refers to individuals whose activities are demonstrably important within a local, state, or national historic contexts. Such properties generally illustrate rather than commemorate a person’s important achievements. Several steps are necessary for determining a property as eligible under Criterion B. First, the importance of the individual must be identified and documented. Second, the length and nature of the association of the individual with the property must be demonstrated. And, third, comparisons to other possibly related properties must be made.

Buildings and structures that are eligible for NRHP-listing because of their architectural or engineering significance meet Criterion C (design or construction), listed in Section 4.1.2. A property’s significance relates to its association with the historic context in which the property is being evaluated. Eligible properties meeting Criterion C may reflect distinctive visual characteristics that relate to a specific type, era, or mode of construction, may represent the work of a master architect or craftsman, or it may possess unique artistic significance. To be eligible under Criterion C, a property must retain at least one of the above characteristics. The only exceptions to this rule are properties included in a NRHP district nominated under Criterion C. Resources within a district are considered eligible if they portray a “significant and distinguishable entity.” They need to be eligible on an individual basis. All NRHP properties, whether they are in a district or not, must retain integrity as discussed previously.

Although not generally eligible for NRHP listing under Criterion D (information potential), listed in Section 4.1.2, buildings and structures may themselves be, or have been, the principal source of the important information. In such a case, it must be demonstrated that the property has information that can contribute to our understanding of human history and this information must be considered important in terms of historic contexts or archeological research.

#### 4.1.3.2 World War II-Era Historic Context

World War II-era properties, all of which are at least 50 years of age (built prior to 1963), must meet at least one of the four NRHP significance criteria and retain integrity in order to be determined eligible for NRHP listing (see Section 4.1.2). As discussed previously, significance can be determined only after historic contexts have been identified. Individual buildings, structures, landscape features, and districts are evaluated for their direct association with the installation’s significant themes and period of significance.

#### 4.1.3.3 Cold War-Era Historic Context

Properties less than 50 years old (those built after 1962) at IAAAP must exhibit qualities of exceptional significance associated with Criterion Consideration G, listed in Section 4.1.2.2. The 50-year guideline provided by the Secretary of the Interior generally ensures that listed properties are truly “historic”. That is, they are not listed merely because of an association with passing modern issues. For a property to be listed under Criterion Consideration G, it must have achieved exceptional significance within the last 50 years (Sherfy and Luce 1998). Exceptional significance means that the eligible property must exhibit “deliberate [and] distinct justification” of its extraordinary importance. In addition, eligible properties less than 50 years of age must meet one of the four evaluation criteria discussed previously in Section 3.1.2.

Many Cold War-era military properties could conceivably be categorized as having exceptional significance provided that they retain sufficient integrity. Therefore, it is necessary to provide stricter guidelines for evaluation of properties possibly eligible for their association with this broad historic context. Eligible properties relating to the Cold War-era may reflect the themes of strategy or policy, weapons deployment, and research and development. It is not enough that a potentially eligible Cold War-era property be unique. The resource also must be strongly associated with a specific military endeavor in a manner that is recognized by the general public. *Looking Between Trinity and the Wall: Army Material Command Cold War Material Culture Within the Continental United States 1945-1989* is the principal historic context used for evaluating such resources by the Army (Gaither 1997).

### 4.1.4 Criteria for Archeological Properties

Archeological properties can be either prehistoric or historic resources. Physical integrity and research value are two important aspects for evaluating the significance of an archeological property.

#### 4.1.4.1 Physical Integrity

For both prehistoric and historic archeological sites, integrity is essential. Archeologists are interested not only in archeological materials, but in the relationship or association among them. As noted above, integrity generally means that the site contains evidence that can provide important information about prehistory or history. In practice, archeologists assess integrity by the level of disturbance to ground by natural processes, such as erosion, or by human activity, such as construction, plowing, or earth moving. If both horizontal and vertical movement of the sediments has substantially disrupted the natural stratigraphy or the stratigraphy that resulted from historic use of a site, little information can be extracted.

#### 4.1.4.2 Research Value

Research value is more difficult to measure. Unlike popular expectations of what makes an archeological site interesting or important, no single factor (size, age, quantity of artifacts present, or even uniqueness) determines its overall research value. These factors are relevant only in relation to the historic context of the site and the particular research questions that are developed from the historic context by investigators.

In this ICRMP, two sets of research issues are presented as standards for evaluating the significance of archeological sites. These research issues are drawn from the historic contexts that have been developed for prehistoric and historic southeastern Iowa. They are the basis for specific research questions that can be formulated when a given site is to be investigated. The first set of research issues includes the fundamental questions archeologists must ask to define a site. If these basic questions are answered, then an investigator can address a second set of research issues that is more specific to the cultural history of the region or is focused on processes of past human behavior.

#### 4.1.4.3 General Research Issues

For a prehistoric or historic archeological site, the following five general research issues must be addressed to evaluate its significance or to provide a basis for further research.

* *Site location, boundaries, and size*. Where is the site? What is the extent of the site? What topography and environment are included? Does it border or overlap with other sites? What is its configuration and spatial organization? What is its depth? What is its physical, condition? Can estimates of the population of the site be made? How is the site related to other sites in the region?
* *Site chronology*. When was the site occupied? Was it occupied once or repeatedly? Was it occupied seasonally? What modifications took place over time? How has the site been affected by natural processes since occupation? Is there archeological material that can be dated by chronometric methods (for example, radiocarbon dating)?
* *Site function*. What did people do here? Is there evidence of particular activities in certain portions of the site? How did people use the location or resources of the site for their purposes? Was the site used for a single activity or was it more generalized? How do the activities conducted here relate to what is known about the way of life of people in the past?
* *Cultural affiliation*. What cultural group occupied the site? Can archeological materials reveal information about the way of life of the occupants that is specific to members of a particular group (for example, ethnic group, regional population, social class, profession, gender)? Is there evidence of occupation by more than one cultural group? Is there evidence of trade with or travel to other regions?
* *Environment*. What was the environment when the site was occupied? Is there evidence of modification of or adaptation to the environment by the occupants? What resources could have been used by the occupants for their subsistence or other purposes? Is there evidence relating to the health and population structure of the occupants?

Historic sites have the additional advantage of having been produced by people who often left records about the site or information that can place the site in a broader picture. Part of research at historic archeological sites includes examining primary and secondary documentation and, if possible, interviewing persons knowledgeable about the site.

#### 4.1.4.4 Research Issues for Prehistoric Sites

High-sensitivity areas for prehistoric cultural resources are based first and foremost on access to water, with a reasonably level topography and ridge crest locations being of added importance. Accordingly, the highest density of prehistoric sites should be found within 1,000 feet of streams and along the tops of the interfluves, which are common throughout IAAAP. Most favored areas for both short- and long-term habitation are places of relatively level topography that occur near water sources, particularly those associated with stream confluences. Those areas considered moderate to high in prehistoric site potential would be lower-order ephemeral drainage areas and springs that provided water sources at different times of the year. Archaic sites are likely to occur around ridge crests commanding advantageous viewpoints over the surrounding terrain, especially with respect to short-term hunting or extractive camps and isolated residences.

Those areas having low prehistoric cultural resources would be lands lacking access to water or that are on steeper slopes. Undisturbed areas that are beyond the limits of the high-sensitivity areas are considered to have low sensitivity for prehistoric sites as well.

It is important to note that a number of IAAAP's archeological sites are situated within agricultural areas that have been plowed and cultivated for more than 100 years. Sites situated in plowed areas have the potential to retain some degree of historical integrity in that the archeological remains are disturbed only within the plow zone; below that zone, cultural materials may remain intact. Additionally, rare sites, such as PaleoIndian cultural period sites that are wholly contained in the plow zone, are still considered eligible under Criterion D for their potential significance; site integrity is not always the deciding factor in site evaluation. Therefore, the probability for finding archeological sites in cultivated areas is moderate to high (Peyton 2002).

#### 4.1.4.5 Research Issues for Historic Sites

From the early to mid-eighteenth century, sites preferred by frontier homesteaders were, in all probability, not much different from aboriginal settlement preferences. Proximity to well-drained soils, water, and wood stands for building and fuel supplies were of particular importance. With the development of the agricultural, market-oriented economy prior to the early frontier period, however, the areas preferred for later historic settlement may have differed considerably from ones preferred by aboriginal populations: more sophisticated lifestyles had evolved by then, nurtured in part by Euro-American adaptations. Despite such change in preference by the latter-day settlers; however, it is believed that earlier frontier settlements still occurred within areas designated as high in sensitivity for prehistoric sites.

During the first years of settlement (ca. 1833-1838), homesteads situated on present-day IAAAP land were not cartographically documented according to land ownership (Waite 1996). Moreover, there was a 35-year gap between the first General Land Office records (1838) and the Andreas atlas (1873), and that, undoubtedly, would have left a number of farmstead locations undocumented. Accordingly, the precise locations of early homesteads are not well known. Data is necessary to establish those particular variables of early farmstead siting and any noticeable differences in settlement patterns. In other regions, preference for farmstead siting includes such issues as slope, drainage, water access, and soils (Louis Berger & Associates, Inc. 1990, 1991); protection from prevailing winds and view shed (Manning 1984); prevailing ethnic or local tradition (Allen 1852); and evolving property lines (Wacker 1975). It is believed that by the 1870s, the factors influencing location of a farmstead would have included an access to developing market-oriented economy and an adequate road network, as well as proximity to population centers hosting such services as saw and grist mills, potteries, tanyards, and blacksmith shops. The large, relatively undisturbed landscape of IAAAP may be particularly suited for research to address the ongoing debate of the nineteenth-century settlement in Iowa and the Central Plains (Peyton 2002).

Another important historic context to consider for IAAAP is the Underground Railroad, the nineteenth century secret system of safe houses and routes, which slaves used to escape to free states or to Canada. Dr. Edwin James, noted surgeon, botanist, geologist, and linguist, operated a safe house on his property, which was on land associated with IAAAP, from about 1838 until his death in 1861.

### 4.1.5 Criteria of Other Types of Resources

In addition to cultural resources such as archeological sites, buildings, structures, and objects, a broad category of resources exist that include sacred sites (which may be protected by AIRFA), NAGPRA-related items (see Section 4.1.3), and TCPs or lifeways that could be considered by NEPA. The following subsections provide descriptions for these properties, suggestions for identification and consultation of such properties, and their evaluation.

#### 4.1.5.1 Descriptions of Properties

As discussed in National Register Bulletin 38 (USDI n.d.:1) a “traditional cultural property can be defined generally as one that is eligible for inclusion in the National Register because of its association with cultural practices or beliefs of a living community that (a) are rooted in that community’s history, and (b) are important in maintaining the continuing cultural identity of the community”. The physical manifestation of these resources is often subtle and may be easily overlooked during an archeological survey, especially by field workers who have not been trained to look for such places. TCPs and sacred sites sometimes occur on physiographic features such as springs, knolls, hilltops, or caves.

“Examples of properties with such significance include: (1) a location associated with the traditional beliefs of a Native American group about its origins, its cultural history, or the nature of the world; (2) a rural community whose organization, buildings, structures, or patterns of land use reflect the cultural traditions valued by its long-term residents; (3) an urban neighborhood that is the traditional home of a particular cultural group, and that reflects its beliefs and practices; (4) a location where Native American religious practitioners have historically gone, and are known or thought to go today, to perform ceremonial activities in accordance with traditional cultural rules of practice; and (5) a location where a community has traditionally carried out economic, artistic, or other cultural practices important in maintaining its historical identity.” (USDI n.d.:1).

#### 4.1.5.2 Issues of Concern

A number of issues concerning Native American participation in the identification of these properties should be kept in mind (AR 200-1), including the following:

* The protection of culturally sensitive information, such as archeological site locations, locations of sacred sites, and religious or other cultural properties;
* Maintaining reasonable access to religious and sacred sites and resources necessary for other cultural ceremonies;
* Treatment of human remains in a culturally sensitive manner by limiting the study or display of human remains affiliated with a certain tribal group;
* Numerous tribes have internal tribal regulations and other compliance policies that should be reviewed by the installation and followed where appropriate in consultation proceedings; and
* Developing a consultation schedule that affords tribal representatives sufficient opportunity to consult.

#### 4.1.5.3 Identification and Consultation

As with other types of cultural resources, TCPs and sacred sites should be systematically addressed in programs of preservation planning and in the historic preservation components of land use plans. Given that such properties are often difficult to determine, the identification and subsequent evaluation of the property can require detailed and extensive consultation, interview programs, and ethnographic fieldwork with traditional groups who may value a particular property. Having to conduct such activities may add to the time and expense for compliance with the NHPA, NEPA, and other regulations and mandates.

Areas that may be affected by a construction or land-use project should include a reasonable effort to identify TCPs. In order to determine what constitutes a “reasonable effort”, some background information about the area’s history must be known to determine the likelihood that such properties may be present and whether the type of project could affect TCPs. For example, rehabilitation of historic buildings may have relatively little potential for effect on such properties. However, rehabilitation that results in the displacement of residents who place a traditional value on the neighborhood may result in effects to the property.

An early step in an effort to identify TCPs is to consult published and unpublished source material on the historic and contemporary composition of the area’s social and cultural groups should be consulted. Having reviewed the available background material, the next step is to contact groups and individuals who have special knowledge about the history and culture of the area to be studied. Fieldwork to identify TCPs involves consultation with knowledgeable parties, field inspection, and recordation of locations identified as significant by such parties.

It should be noted that knowledge of traditional cultural values may not be shared readily with outsiders and should be conducted in a culturally sensitive manner, which may require the use of languages other than English, the conduct of community meetings in ways consistent with local traditional practice, and the conduct of studies by trained ethnographers, ethnohistorians, or folklorists.

#### 4.1.5.4 Evaluation

Whether a TCP or sacred site is known in advance or found during an identification effort, it must be evaluated with reference to the NRHP Criteria for Evaluation (36 CFR Part 60) in order to determine whether it is eligible for inclusion on the NRHP. Four steps are involved in this process.

* **Step 1:** Ensure that the entity under consideration is a property. Often it is the intangible beliefs and practices that may give the property its significance. However, the NRHP does not include intangible resources. The entity evaluated must be a tangible property, such as a site, buildings, structure, or object. Beliefs and practices associated with the tangible property must, however, be considered.
* **Step 2:** Consider the property’s integrity. As with all types of cultural resources evaluated to the NRHP, properties must have “integrity of location, design, setting, materials, workmanship, feeling, and association.” For TCPs and sacred sites two fundamental qualities of integrity must be addressed. First, does the property have an integral relationship to traditional cultural practices and beliefs; and second, is the condition of the property such that the relevant relationships survive?
* **Step 3:** Evaluate the property with reference to the NRHP criteria. Assuming the entity to be evaluated is a property, and that it retains integrity, it is next necessary to evaluate it against the four basic NRHP criteria (36 CFR Part 60). If the property meets one or more or the criteria, it may be eligible; if it does not, it is not eligible.
* **Step 4:** Determine whether any of the NRHP criteria considerations make the property ineligible. Generally, a property is not eligible for inclusion in the NRHP if it represents a class of properties to which one or more of the six “criteria considerations” listed in 36 CFR Part 60.4 applies, and is not part of an identified eligible district.

As with any cultural resource, establishing that a TCP or sacred site is eligible for the NRHP does not necessarily mean that the property must be protected from disturbance or damage, but it does mean the property must be given meaningful consideration in project planning. Establishing that a property is eligible means that it must be considered in planning undertakings, but it does not mean that such an undertaking cannot be allowed to damage or destroy it. Consultation must occur in accordance with the regulations of the ACHP (36 CFR Part 800) to identify, and if feasible adopt measures to protect it.

### 4.1.6 Criteria for Cemeteries

Cemeteries do not ordinarily qualify for inclusion on the NRHP. Exceptions are made for cemeteries that derive their primary significance from extreme antiquity, distinctive design, graves of famous persons, or association with significant historic events. The cemeteries at IAAAP all date to the nineteenth century and are rural vernacular in design. Two of the cemeteries are active and still accept new interments. No famous persons are known to be buried on IAAAP, and none of the cemeteries are associated with important historic events. As a consequence, none of the special criteria apply and none of the cemeteries at IAAAP are eligible for inclusion on the NRHP.

## 4.2 PREVIOUS STUDIES

*This section summarizes earlier cultural resource studies conducted at Iowa Army Ammunition Plant, including management plans, architectural surveys, archeological surveys, and archeological excavations.*

### 4.2.1 Management Plans and Syntheses

Prior to this current ICRMP, there have been three management plans for cultural resources at IAAAP and two summary documents not intended as management plans (see Table 4.1).

The first plan for IAAAP cultural resource work was prepared in 1984 (Stafford et al. 1984). This document was prepared as a portion of the Development and Readiness Command (DARCOM) Historical/Archeological Survey (DHAS). As a preliminary survey, it identified 197 potential historic archeological resource sites on IAAAP. The records of the IAAAP cultural resource management files (either the Operating Contractor or the Army files) do not indicate that the SHPO was consulted or concurred with the findings and determinations of this study.

In 1996, Geo-Marine, Inc. prepared a CRMP for IAAAP that was accepted by the Army (Waite 1996). During this study, a large number of architectural resources at IAAAP (382 dating to World War II and 20 dating to the Cold War era) were identified as potentially eligible for listing in the National Register. However, a comprehensive inventory and evaluation of the 402 resources was not completed, nor was it within the scope of the 1996 CRMP plan to do so. The lists of these buildings and structures are reproduced in Appendix D of this report. In the same study, an additional 788 architectural resources constructed during the World War II or the Cold War era are described as being of unknown eligibility due to their association with significant events in American history. The records of the IAAAP CRM do not indicate that the findings regarding 1,190 resources have ever been presented to the SHPO, and no letters of concurrence were located during the records search for this ICRMP.

| Table 4.1 Cultural Resource Studies at IAAAP | | | | |
| --- | --- | --- | --- | --- |
| **Year** | | **Document Purpose** | **Author** | **Organization** |
| **Management Plans** | | | | |
| 1984 | Overview, management plan | | Stafford et al. | Woodward-Clyde Consultants |
| 1996 | CRMP | | Waite | Geo-Marine, Inc. |
| 2002 | ICRMP | | Peyton | Earth Tech, Inc. |
| **Summary Documents** | | | | |
| 1984 | Review of DA acquisition maps and photographs | | Not identified | National Park Service |
| 1995 | NAGPRA collections summary | | Not identified | USACE, St. Louis District |
| **Architectural Property Inventories and Assessments** | | | | |
| 1984 | Historic properties report | | Not identified | MacDonald and Mack Partnership |
| 1996 | Section 106 review of 121.17 acres containing residential properties | | Not identified | Mason & Hangar-Silas Mason Co., Inc. |
| 2005 | Survey and evaluation of seven production lines | | Griffitts | Parsons, Inc. |
| **Archeological Studies** | | | | |
| 1987 | Reconnaissance survey, 520 acres and survey, 140 acres | | Brodnicki | USACE, Omaha District |
| 1987 | Reconnaissance survey, 25 acres | | Barr | USACE, Rock Island District |
| 1989 | Letter report survey, 133 acres | | Hillerson | USACE, Omaha District |
| 1991 | Reconnaissance survey, 14,720 acres | | Winham, et al. | Archeology Laboratory, Augustana College |
| 1997 | Intensive survey of 14 sites | | Bienenfeld | Tetra Tech, Inc. |
| 2000 | Light phase II survey, acreage not identified | | Bienenfeld | Tetra Tech, Inc. |
| 2000 | Reconnaissance survey, 113.6 acres | | Harvey and Kolb | Center for Archeological Research at Marquette University |
| 2002 | Light phase II survey of 27 sites | | Leininger and Bienenfeld | Tetra Tech, Inc. |
| 2005 | Light phase II survey of three sites | | Not identified | Tetra Tech EC, Inc. |
| 2005 | Survey, 101 acres | | Kolb and Harvey | Great Lakes Archeological Research Center, Inc. |
| 2009 | Letter report survey of two sites | | Hinks | Michael Baker Jr., Inc. |
| 2009 | Supplemental survey, 1.15 acres | | Lombardi | Michael Baker Jr., Inc. |
| 2009 | Survey, 69.8 acres | | Cunning et al. | Michael Baker Jr., Inc. |
| 2009 | Survey, 44 acres | | Cunning et al. | Michael Baker Jr., Inc. |
| 2009 | Letter report survey of two sites | | Hinks | Michael Baker Jr., Inc. |
| 2010 | Survey, 14.6 acres | | Thompson | Bear Creek Archeology, Inc. |
| 2010 | Survey, 28 acres | | Cunning et al. | Michael Baker Jr., Inc. |
| 2010 | Survey, 125.4 acres | | Thompson | Bear Creek Archeology, Inc. |
| 2011 | Survey, 93.5 acres | | Gooder and Blikre | Bear Creek Archeology, Inc. |
| 2011 | Survey for proposed construction of a fire and security facility | | Bond and Stanley | Bear Creek Archeology, Inc. |
| 2011 | Survey for proposed closure of wells and cisterns, acreage not identified | | Bond and Stanley | Bear Creek Archeology, Inc. |
| 2012 | Survey, 328.1-ft corridor | | Bond and Stanley | Bear Creek Archeology, Inc. |

In 2002, Earth Tech, Inc. prepared an ICRMP for IAAAP (Peyton 2002). Most of the general goals laid out in the 2002 plan have been met, though the specific goal of a comprehensive, site-wide inventory and evaluation has not yet been met.

### 4.2.2 NAGPRA Compliance Documents

In compliance with NAGPRA, in 1995, the U.S. Army Environmental Center (AEC) commissioned a study to locate, inventory, and assess archeological collections from IAAAP that may be subject to repatriation consultants (U.S. Army Corps of Engineers 1995). The study also compiled points of contact for Federally-recognized Native American tribes. The NAGPRA inventory completed for IAAAP identified no human remains or funerary objects as being from IAAAP that required consultation. Although no items in the collections were found to be historically connected to any specific Native American individuals or tribal groups, USACE did note that the Sac and Fox tribes occupied southeastern Iowa during the early period of Euro-American contact. Correspondence initiated by IAAAP has received no significant response, which ends the NAGPRA consultation unless unanticipated buried remains are found.

### 4.2.3 Archeological Studies

This section lists archeological surveys that have been completed as well as sites that have been tested for NRHP eligibility.

#### 4.2.3.1 Surveys

Since 1987, four contractors and two colleges have conducted a total of 19 archeological surveys; the Omaha and Rock Island USACE districts conducted three additional studies (see Table 4.2). Figure 4.1 shows the locations of the previous archeological surveys.

As new projects are proposed, current cultural resource staff at IAAAP proceeds with archeological surveys as needed in areas that have yet been studied.

Figure 4.1 Locations of Previously Identified Archeological Sites

Information regarding the location, character, or ownership of historic resources withheld pursuant to National Historic Preservation Act, Section 304, and Advisory Council on Historic Preservation regulations at 10 CFR 800.11(c).

| Table 4.2 Archeological Surveys Conducted at the IAAAP 1987 to 2012 | | | |
| --- | --- | --- | --- |
| Survey Institution | Report Date | Acres | Newly Recorded Sites on IAAAP |
| U.S. Army Corps of Engineers | 1987 | 140 | 2 |
| U.S. Army Corps of Engineers | 1987 | 25 | 1 |
| U.S. Army Corps of Engineers | 1989 | 133 | 1 |
| Archeology Laboratory, Augustana College | 1991 | 14,7201 | 274 |
| Tetra Tech, Inc. | 1997 | Not Identified | 0 |
| Tetra Tech, Inc. | 2000 | Not Identified | 0 |
| Center for Archeological Research at Marquette University | 2000 | 113.6 | 0 |
| Tetra Tech, Inc. | 2002 | Not Identified | 0 |
| Tetra Tech EC, Inc. | 2005 | Not Identified | 0 |
| Great Lakes Archeological Research Center, Inc. | 2005 | 101 | 13 |
| Michael Baker Jr., Inc. | 2009 | Not Identified | 0 |
| Michael Baker Jr., Inc. | 2009 | 1.15 | 2 |
| Michael Baker Jr., Inc. | 2009 | 69.8 | 0 |
| Michael Baker Jr., Inc. | 2009 | 44 | 5 |
| Michael Baker Jr., Inc. | 2009 | Not Identified | 0 |
| Bear Creek Archeology, Inc. | 2010 | 14.6 | 3 |
| Michael Baker Jr., Inc. | 2010 | 28 | 1 |
| Bear Creek Archeology, Inc. | 2010 | 125.4 | 13 |
| Bear Creek Archeology, Inc. | 2011 | 93.5 | 5 |
| Bear Creek Archeology, Inc. | 2011 | Not Identified | 0 |
| Bear Creek Archeology, Inc. | 2011 | Not Identified | 0 |
| Bear Creek Archeology, Inc. | 2012 | Not Identified | 0 |
| Total |  | 1,021.142 | 320 |
| 1 Reconnaissance survey acreage  2 Total acres surveyed on IAAAP is an estimate. | | | |

#### 4.2.3.2 Testing and Excavations

The 1987 survey by USACE, Rock Island District identified a 17-acre prehistoric site (13DM303). A surface collection recovered 172 lithic items from local cherts of the Burlington formation. It was recommended that this site be tested to determine its NRHP eligibility (Peyton 2002).Seven of 14 prehistoric and historic tested sites were recommended potentially eligible for NRHP listing in a 1997 survey completed by Tetra Tech. The potentially eligible sites were 13DM367 (partial site), 13DM439 (historic component only), 13DM441 (undisturbed portions only), 13DM451 (partial site), 13DM468 (partial site), 13DM470, 13DM541 (partial site) (Tetra Tech, Inc. 1987).

Another Tetra Tech Light Phase II survey testing of 27 sites in 2002 yielded an additional three potentially eligible sites (13DM419, 13DM420, 13DM473) and four eligible sites (13DM303, 13DM376, 13DM426, 13DM574). At this time, site 13DM473 was also recommended for further testing (Leininger and Bienenfeld 2002).

In 2005, Tetra Tech tested three additional sites (13DM366, 13DM577, 13DM611) as part of a Light Phase II survey. It was recommended that portions of site 13DM366 be considered potentially eligible for the NRHP, but the remaining two sites were considered ineligible (Tetra Tech EC, Inc. 2005).

Excavations performed by Great Lakes Archeological Research Center in 2005 and again by Michael Baker Jr., Inc. in 2009 led to the determination of eligibility for sites 13DM1052, 13DM1054, 13DM1067, and 13DM1068. Of these, 13DM1054 and 13DM1068 were deemed potentially eligible for NRHP listing (Gregory et al. 2005; Hinks 2009; Cunning et al. 2009; Michael Baker Jr., Inc. 2009; Hinks and Lombardi 2009).

Another 2009 survey by Michael Baker Jr., Inc. for the proposed West Perimeter Fence Alignment recommended further deep testing for the recommended potentially eligible site 13DM1107 and avoidance of an additional site (13DM1109) (Cunning et al. 2009).

Prehistoric sites 13DM1272 and 13DM1277 were recommended for Phase II testing or avoidance as part of a 2010 survey by Bear Creek Archeology (Thompson 2010a). An additional survey by Bear Creek Archeology conducted during the same year also included further investigation of 13DM1272, which was recommended yet again for avoidance or Phase II testing (Thompson 2010b).

For additional information concerning sites identified at IAAAP, see Appendix C.

### 4.2.4 Architectural Inventories and Assessments

As of 2012, about 1,289 buildings, sites, structures, and engineering works existed at IAAAP. Appendix D provides a complete listing of all of these resources. Although the vast majority of these properties have identifying numbers, some minor engineering works and structures were not assigned numbers.

The types of resources included within this inventory include such diverse properties as ammunition storage facilities, ammunition production plants, operations supply buildings, locker rooms, covered storage buildings, railroad tracks, roads, vehicular and railroad bridges, cemeteries, exterior lighting, fencing and walls, flagpoles, facility signs, sewer and industrial waste lines, hazardous materials storage, administration buildings and structures, open storage units, a fire station, a family housing dwelling, a police station, a small arms range, sidewalks and walkways, an electronic communication and maintenance shop, an ammunition depot and arsenal, vehicle maintenance shops, a non-exchange eating facility, training support structures, utility buildings, security support buildings, overhead power lines, public restrooms, a POL pipeline, bulk liquid fuel storage, pavilions, gas distribution lines, fuel storage facilities, cemeteries, industrial waste treatment facilities, heat distribution lines, earth-covered magazines (ECM), electrical power transformers, gas production plant, levees and dikes, water reservoir, wells, and loading platforms and ramps.

Three separate architectural assessments have been conducted at IAAAP (Table 4.3). Currently, architectural inventories conducted under AR 200-1 classify properties as either eligible or not eligible for the NRHP.

Table 4.3 Summary of Architectural Inventories at the IAAAP

|  |  |  |  |
| --- | --- | --- | --- |
| Author | Report Date | Historical Context | Total Buildings/Structures Inventoried |
| MacDonald and Mack Partnership | 1984 | World War II, Cold War | 29 |
| Mason & Hangar-Silas Mason Co., Inc. | 1996 | World War II | 72\* |
| Waite | 1996 | World War II, Cold War | 1,190\*\* |
| Griffitts | 2005 | World War II, Cold War | 7 |
| \*Buildings no longer located on IAAAP property. \*\*No full evaluations associated with this inventory, which was compiled for the 1996 CRMP. | | | |

In 1984, a document by MacDonald and Mack Partnership was prepared as a portion of the Development and Readiness Command (DARCOM) Historical/Archeological Survey (DHAS) (MacDonald and Mack Partnership 1984). The DARCOM study determined significance of properties according to standards provided by AR 420-40 and Technical Manual 5-801-1. These standards classified properties ranging from Category I through Category V in an attempt to define levels of significance for operation and maintenance funding priorities only:

* Category I—properties of major importance;
* Category II—properties of importance;
* Category III—properties of minor importance;
* Category IV—properties of little or no importance; and
* Category V—properties detrimental to the significance of adjacent historic properties.

Due to the review of architectural, historical, and technological resources identified on Army facilities nationwide (73 DARCOM studies at other facilities), four additional criteria were employed to aid in determining appropriate category levels for properties at IAAAP. The criteria were used to assess the importance not only of properties of traditional historical interest, but also of ubiquitous standardized or prototypical buildings, structures, and production facilities that were constructed and put into service during World War II, as well as of properties associated with many post-war technological achievements (regardless of building age). The four criteria were often used in combination and include (MacDonald and Mack Partnership 1984):

* Degree of importance as a work of architectural, engineering, or industrial design (e.g., workmanship, materials, functionality);
* Degree of rarity as a remaining example of a once widely used architectural, engineering, or industrial design or process (utilized with standardized construction and nonmilitary designs);
* Degree of integrity of completeness (intactness); and
* Degree of association with an important person, program, or event (significant associations).

Most DARCOM properties were constructed just prior to World War II, and special consideration was given to the evaluation of such. While those extant properties from this period are not individually significant, they are collectively an important representation of the vast construction undertaking associated with World War II; Together, the historical, architectural, and technological significance of the properties guided the DARCOM study to focus on military construction between 1940 and 1945, as well as its contribution to the history of World War II and to the post-war Army landscape.

All properties were placed into one of the five categories, with those assigned to Categories I, II, and III assessed under additional criteria: structural condition and state of repair, and potential for adverse effects to occur (e.g. demolition). No Category I properties were found to be present at IAAAP, but one property, Avery Fruit Cellar, was classified as Category II. The report indicated that Avery Fruit Cellar was a “rare architectural artifact of southeastern Iowa’s once-flourishing orchard industry.” Based on historic property guidance outlined in AR 420-40, which was in force at this time, the cellar was considered of “importance,” or Category II. At that time, the property was photographed and a HABS/HAER Level IV Inventory Card completed. A brief description of the resource was also included in the report.

The 1872 Winnebago School was classified as Category III, of “minor importance,” as a local historic landmark and a good example of vernacular stone architecture. This resource was documented in the same manner as the Avery Fruit Cellar. All remaining properties were assigned Categories IV or V classification.

As part of the DARCOM study, 29 properties were documented in accordance with Level IV guidance provided by the HABS/HAER division of the NPS. The records are archived at the Library of Congress in the HAER collection, and a copy of each inventory card is on file with the cultural resources staff. These documented buildings include:

* 500-30-7, Hawkeye School;
* 500-36-6, Winnebago School;
* BG-1, Office Building;
* 300-148, Maintenance Shop;
* Avery Fruit Cellar (no number);
* 200-131-2, Garage;
* 500-116, Recreation Hall;
* 3-52, Office;
* 2-04, Painting and Receiving;
* 6-76, Packing and Shipping;
* 500-125, Laundry;
* 8-81-3, Ammonium Nitrate Kettle House;
* 1‑63-7, Research and Development;
* 3A-05-2, Melt Building;
* 500-101, Administration Building;
* 2-01, Inert Storage;
* 200-131-3, Fire Station;
* 1-62, Power House;
* 2-05-1, Melt Building;
* 500-129, Maintenance Shop;
* Igloo-style Magazines, Building No. 60-46-5 (representative);
* Warehouse Buildings Nos. 500-143; L-4 (representative); and
* Residence Buildings Nos. 2, 27, 32, 33, 40, and 48.

The records of the IAAAP cultural resource management files (either the Operating Contractor or the Army files) do not indicate that the SHPO was consulted or concurred with the findings and determinations of the DARCOM study.

In 1995, Mason & Hangar-Silas Co., Inc. completed a Section 106 assessment of 121.17 acres of land containing residential resources. The survey included the potential effects of conveying such resources to the City of Middletown. The report found none of the properties individually significant, but as a whole, the resources were determined to be contributing to IAAAP and its potential NRHP eligibility. The conveyance of the properties was thus determined to have an adverse effect on the contributing resources and the report recommended the development of an MOA prior to property conveyance (Mason & Hangar-Silas Mason Co., Inc. 1995).

Although no formal SHPO concurrence of this determination has been found, it is assumed to have transpired according to a February 14, 1995, Memorandum of Record (MOR) prepared by Mary Jane Beck, IAAAP Realty Specialist. The MOR summarizes a conference telephone call among the Iowa SHPO, the Council, and Mr. Bob Hanes (IAAAP). The MOR indicates that all parties “…agree that the housing area is significant only for its creation and use in association with the World War II build-up.” The MOR further indicates that mitigations would be undertaken by qualified individuals and would include a brief history of the creation and use of the housing area. Existing plans, elevations, floor plans, and other architectural renderings depicting the original and contemporary conditions of the buildings and their configurations were to be collected and reposited at IAAAP and with the Iowa SHPO (Beck 1995).

An MOA signed by the Iowa SHPO in October 1995 outlines the mitigation measures to be undertaken by IAAAP; however, no evidence of completed mitigation efforts was located. The properties have since been transferred to the City of Middletown, Iowa, and are no longer under the jurisdiction and responsibility of IAAAP (IAAAP 1995).

In 2005, Parsons, Inc. conducted an architectural survey of seven production lines (Lines 5A, 5B, 6, 7, 8, 800, 9) and a National Register evaluation of Line 7 (Griffitts 2005). Lines 5A, 5B, 6, 800, and 9 were described in the reconnaissance survey as either potentially eligible or were recommended for further research. At this survey level, Line 8 appeared to be not eligible for NRHP listing. A full evaluation of Line 7 concluded with the recommendation of not eligible. While SHPO may agree with the eligibility recommendations, no concurrence letters associated with this evaluation were identified at IAAAP.

To date, 957 of the 1,289 existing buildings, sites, structures, and engineering are described as individually eligible for the NRHP for the purposes of two Program Alternatives: World War II and Cold War Era (1939-1974) Ammunition Storage Facilities and World War II and Cold War Era (1939-1974) Army Ammunition Production Facilities and Plants (both documents are located in Appendix G). The remaining 343 properties are not considered eligible because they represent ancillary or infrastructure elements, such as nonhistoric roads, or signs, or are not normally considered as NRHP-eligible properties, or they have not reached 50 years of age.

## 4.3. RESOURCE INVENTORY

*This section summarizes Iowa Army Ammunition Plant’s known cultural resources, including buildings, structures, archeological sites, cemeteries, and other types of properties.*

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### 4.3.1 Architectural and Historical Resources

This section lists any architectural properties present at IAAAP that are listed on the NRHP. It also summarizes any studies concerning architectural properties that were assessed as NRHP eligible, ineligible, or not yet assessed.

#### 4.3.1.1 Architectural Properties Listed in the NRHP

Currently, no architectural properties at IAAAP are listed on the NRHP.

#### 4.3.1.2 Architectural Properties Assessed as NRHP Eligible

No site-wide cultural resources surveys of resources 50 years old or older have been completed at IAAAP.

The 1995 Mason & Hangar-Silas Mason Co., Inc. assessment of 72 residential resources regarded all as contributing to IAAAP as a potentially eligible historic district. These buildings have since been transferred to the City of Middletown and are no longer under the jurisdiction of IAAAP (Mason & Hangar-Silas Mason Co., Inc. 1995).

As part of the 1996 CRMP, a preliminary reconnaissance survey was conducted for 1,190 World War II and Cold War buildings and structures at IAAAP. Of these, 382 World War II- and 20 Cold War-era resources were noted as potentially eligible. The eligibility of the remaining 788 resources was defined as “unknown” at that time (Waite 1996).

Through the ACHP’s Program Comment for World War II and Cold War Era (1939-1974) Ammunition Storage Facilities and Program Comment for World War II and Cold War Era (1939-1974) Army Ammunition Production Facilities and Plants, both signed in 2006, 957 resources at IAAAP are currently assigned the code ELPA (eligible for the purposes of a program alternative). Under these Program Comments, the DOD, in coordination with the ACHP, has mitigated the eligible facilities as part of a nationwide mitigation for eligible ammunition storage and production facilities and plants.

#### 4.3.1.3 Architectural Properties Assessed as NRHP Ineligible

An NRHP evaluation of Line 7 conducted in March 2005 recommended the facility and its associated ancillary features (26 buildings in all) not eligible for NRHP listing (see Appendix D). As part of this study, Line 8 (three buildings) was also surveyed, but did not receive a full NRHP evaluation. It was noted that this line no longer retains sufficient integrity to meet NRHP criteria (Griffitts 2005). The Iowa SHPO reviewed the evaluation and concurred with the determination (see Appendix F).

#### 4.3.1.4 Architectural Properties Not Yet Assessed

While the 1984 DARCOM project studied 29 resources at IAAAP, no discussion of NRHP eligibility took place in this report (MacDonald and Mack Partnership 1984).

The reconnaissance survey completed as part of the 1996 CRMP, defined the eligibility of 788 of 1,190 inventoried resources as “unknown” at that time (Waite 1996).

In a 2005, survey of seven production lines at IAAAP, it was recommended that five (5A, 5B, 6, 800, and 9) of the seven lines receive full NRHP assessments. Line 5A consists of 29 buildings and structures in all, 28 buildings and structures make up 5B, 74 buildings and structures comprise Line 6, 800 has a total of 22 buildings and structures, and Line 9 is made up of 28 buildings and structures (Griffitts 2005). These lines were not fully studied for eligibility at that time, but most facilities addressed in the 2005 report were assigned the code ELPA as part of the 2006 Program Comments.

During the site visit for the creation of the current ICRMP, architectural resources assigned the code NEV (not yet evaluated) as part of the 2006 Progam Comments, including five cemeteries, several fences and gates, a vehicular bridge, and a reservoir that were constructed before 1968 were noted, visited, and photographed. These resources were not fully evaluated for National Register eligibility but were surveyed for planning purposes for this ICRMP update.

#### 4.3.1.5 Architectural Properties No Longer Extant

Since 2002, 154 IAAAP facilities have been demolished. Included in this total are not only buildings and structures such as gatehouses, administrative offices, ready magazines, and holding tanks, but also secondary features such as traffic control lights and signs.

### 4.3.2 Archeological Resources

Archeological sites recorded at IAAAP were given a trinomial designation in the form: 13DM175. The first number is the state number for Iowa, the letters stand for Des Moines County, and the last digits refer to the sequential order in which the site was recorded.

A total of 320 archeological sites have been recorded at IAAAP (see Appendix C). The first site on record is 13DM19 and the last is 13DM1323 (other sites in this range are located elsewhere in Des Moines County). The sources used to identify previously recorded sites at IAAAP were (1) previous survey reports, (2) the 1996 CRMP (Waite 1996), (3) and the 2002 ICRMP (Peyton 2002).

SHPO concurrence has not been identified for most of the 320 archeological sites at IAAAP (see Table 4.4). IAAAP and the Iowa SHPO have concurred that (1) 68 of the archeological sites are not eligible for the NRHP, (2) four are eligible for the NRHP, (3) 20 are potentially eligible for the NRHP, and (4) the remaining 228 sites should be protected from further disturbance until further testing to determine NRHP eligibility can be planned or completed.

| Table 4.4 Archeological Sites by NRHP Eligibility | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Eligible (portions of sites or in full) | Potentially Eligible (portions of sites or in full) | Not Eligible | | Unknown Eligibility | | | | |
| 13DM303  13DM376  13DM426 13DM574 | 13DM366  13DM361  13DM367  13DM385  13DM419  13DM420  13DM439  13DM441  13DM451  13DM468  13DM470  13DM473  13DM541  13DM1054  13DM1057  13DM1058  13DM1068  13DM1107  13DM1272  13DM1277 | 13DM227  13DM355  13DM356  13DM370  13DM377  13DM380  13DM391  13DM396  13DM397  13DM411  13DM415  13DM417  13DM424  13DM430  13DM434  13DM443  13DM445  13DM449  13DM472  13DM474  13DM477  13DM479  13DM481  13DM517  13DM519  13DM523  13DM538  13DM577  13DM584  13DM588  13DM589  13DM591  13DM599  13DM602 | 13DM603  13DM611  13DM1052  13DM1053  13DM1055  13DM1056  13DM1059  13DM1060  13DM1061  13DM1062  13DM1063  13DM1064  13DM1067  13DM1105  13DM1106  13DM1108  13DM1109  13DM1110  13DM1273  13DM1274  13DM1276  13DM1278  13DM1279  13DM1280  13DM1281  13DM1293  13DM1294  13DM1295  13DM1296  13DM1319  13DM1320  13DM1321  13DM1322  13DM1323 | 13DM19  13DM228  13DM354  13DM357  13DM358  13DM359  13DM360  13DM362  13DM363  13DM364  13DM365  13DM368  13DM369  13DM371  13DM372  13DM373  13DM374  13DM375  13DM378  13DM379  13DM381  13DM382  13DM383  13DM384  13DM386  13DM387  13DM388  13DM389  13DM390  13DM392  13DM393  13DM394  13DM395  13DM398  13DM399  13DM400  13DM401  13DM402  13DM403  13DM404  13DM405  13DM406  13DM407  13DM408  13DM409  13DM410 | 13DM412  13DM413  13DM414  13DM416  13DM418  13DM421  13DM422  13DM423  13DM425  13DM427  13DM428  13DM429  13DM431  13DM432  13DM433  13DM435  13DM436  13DM437  13DM438  13DM440  13DM442  13DM444  13DM446  13DM447  13DM448  13DM450  13DM452  13DM453  13DM454  13DM455  13DM456  13DM457  13DM458  13DM459  13DM460  13DM461  13DM462  13DM463  13DM464  13DM465  13DM466  13DM467  13DM469  13DM471  13DM475  13DM476 | 13DM478  13DM480  13DM482  13DM483  13DM484  13DM485  13DM486  13DM487  13DM488  13DM489  13DM490  13DM491  13DM492  13DM493  13DM494  13DM495  13DM496  13DM497  13DM498  13DM499  13DM500  13DM501  13DM502  13DM503  13DM504  13DM505  13DM506  13DM507  13DM508  13DM509  13DM510  13DM511  13DM512  13DM513  13DM514  13DM515  13DM516  13DM518  13DM520  13DM521  13DM522  13DM524  13DM525  13DM526  13DM527  13DM528 | 13DM529  13DM530  13DM531  13DM532  13DM533  13DM534  13DM535  13DM536  13DM537  13DM539  13DM540  13DM542  13DM543  13DM544  13DM545  13DM546  13DM547  13DM548  13DM549  13DM550  13DM551  13DM552  13DM553  13DM554  13DM555  13DM556  13DM557  13DM558  13DM559  13DM560  13DM561  13DM562  13DM563  13DM564  13DM565  13DM566  13DM567  13DM568  13DM569  13DM570  13DM571  13DM572  13DM573  13DM575 | 13DM576  13DM578  13DM579  13DM580  13DM581  13DM582  13DM583  13DM585  13DM586  13DM587  13DM590  13DM592  13DM593  13DM594  13DM595  13DM596  13DM597  13DM598  13DM600  13DM601  13DM604  13DM605  13DM606  13DM607  13DM608  13DM609  13DM610  13DM612  13DM613  13DM614  13DM615  13DM616  13DM617  13DM618  13DM619  13DM620  13DM621  13DM622  13DM625  13DM630  13DM631  13DM1275  13DM1297  13DM1298 |

Note: The first number in the sequence (13) is the state number for Iowa, the letters (DM) stand for Des Moines County, and the last digits refer to the sequential order in which the site was recorded.

Artifacts discovered at some of the archeological sites are in curation at Tetra Tech, Inc. in Fairfax, Virginia. IAAAP plans to have those artifacts curated at UI-OSA with IAAAP’s other collections in the future.

#### 4.3.2.1 Archeological Sites Listed in the NRHP

No archeological sites at IAAAP have been formally nominated to or included in the NRHP.

#### 4.3.2.2 Archeological Sites Assessed as NRHP Eligible

Four archeological sites at IAAAP have been assessed as NRHP eligible and another 20 are potentially eligible for listing (Table 4.5). A total of 228 additional sites are currently described as having unknown eligibility. Most of the sites were initially recorded in a 1991 reconnaissance survey of 274 new archeological sites (Winham et al. 1991). SHPO concurrence for this report was not identified, but additional studies on some of the sites initially identified as part of the reconnaissance study have been reevaluated and in all but draft evaluations, such reevaluations have received SHPO concurrence (see Appendix F).

#### 4.3.2.3 Archeological Sites Assessed as NRHP Ineligible

Based on the site listing presented in Appendix C, 60 archeological sites were assessed as not eligible for inclusion on the NRHP, and the SHPO has concurred with these recommendations in all studies besides those still in draft form (Table 4.5).

Table 4.5 NRHP Eligibility of Archeological Sites and Management Actions Needed

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Management Action Needed | | | | |
| NRHP Status | Preserve and Protect | Avoid | No Action | No. of Sites |
| Listed | ✓ | ✓ |  | 0 |
| Eligible for listing | ✓ | ✓ |  | 4 |
| Potentially eligible |  | ✓ |  | 20 |
| Unknown eligibility |  | ✓ |  | 228 |
| Possibly not eligible |  |  | ✓ | 0 |
| Not eligible |  |  | ✓ | 68 |
| Total recorded sites |  |  |  | 320 |

#### 4.3.2.4 Uninvestigated Localities of Possible Historic Sites

A total of 14,708 acres have been surveyed on IAAAP. Remaining acreage at IAAAP has been disturbed or contains UXO. There is some potential for historic sites to be identified at IAAAP, and additional survey for such sites will take place as projects arise.

### 4.3.4 Traditional Cultural Properties

No focused studies have taken place at IAAAP for the identification of TCPs or Native American sacred places, nor have any such sites been identified.

### 4.3.5 Cemeteries and AR 210-190

Six known cemeteries are present at IAAAP: Elliott, Mormon, Lee, Shiloh (Avery), Swedestown, and Spring Creek (see Figure 4.2). A seventh, Johnson-Walker Cemetery is located immediately outside of the IAAAP bounds, but has its own IAAAP facility number and is on IAAAP property. According to the 2002 ICRMP, Lee, Elliot, and Swedestown cemeteries were relocated to Shiloh. During the site visit for the current ICRMP; however, it was determined that Elliot Cemetery remains intact despite overall lack of maintenance. Swedestown is in an area that contains UXO. Archeological site numbers have been assigned to four of the cemeteries: 13DM388 (Elliot), 13DM480 (Shiloh), 13DM533 (Swedestown), and 13DM546 (Mormon) and to a greater site, 13DM367, in which a fifth cemetery (Lee) is located. The

NRHP eligibility of these four cemeteries is described as “unknown” at the current time (Table 4.5). Architectural historians have not evaluated any of the cemeteries for potential NRHP eligibility. It is likely that there are other farmstead cemeteries located on the IAAAP grounds.

The Iowa SHPO has requested that IAAAP record all of the extant historic-era cemeteries on Iowa Site Inventory Forms and file them with the SHPO. Consideration should also be given to also recording the cemeteries as archeological sites with the Office of the State Archeologist.

Figure 4.2 Locations of Known Cemeteries



Army Regulation 210-190, entitled Post Cemeteries, sets policies, procedures, and responsibilities for the operation, maintenance, and inspection of Army post cemeteries, whether they are open or closed. Part of the policy states that for private cemeteries located on Government-owned land, access and visitation rights continue and the Army “owes certain duties to the family, church, or private cemetery association that has an interest in the burial sites and to the next of kin of the individuals buried there.” While Spring Creek and Shiloh are not owned by IAAAP, both are maintained by the facility due to their locations within the IAAAP bounds. Mormon Cemetery is also maintained by IAAAP, and plans for maintenance at Elliot Cemetery are underway.

### 4.3.6 Other Resource Types: Objects, Structures, and Landscapes

Military installations tend to have a wide variety of cultural resource types that cannot be classified as a building or an archeological site. Under 36 CFR Part 800, the Section 106 regulations include as historic properties artifacts, records, and remains that are related to and located within a NRHP-eligible historic district, site, building, structure, or object. Objects and structures such as statuary, guns, tanks, or other vehicles are not typically individually eligible for the NRHP, but more often can be considered contributing resources in a larger historic district. In order for one of these other resource types to be considered eligible on an individual basis, it would have to have historic significance and retain integrity, just as a house or archeological site would. As of December 2012, a search of the NRHP database indicates that only one military tank is currently listed in the NRHP. It is the Windward Hills Japanese Light Model Tank No. 95 located in Guam, which was determined significant for its association with the Japanese military presence on the island of Guam during World War II. This tank was listed in 1979, and the nomination does not specify its significance in the area of engineering, but this would be an important area for consideration of a military tank today. A military tank would be categorized as a structure as they are “functional constructions,” much like a trolley car or a boat.

Additionally, three guns are currently listed in the NRHP: the Blunts Point Naval Gun in American Samoa, the Japanese Coastal Defense Gun in the North Mariana Islands, and the Six-inch Rifled Gun No. 9 in California. The Gonga Beach Gun Emplacement and Gun Mount in Guam are also listed in the NRHP. These guns were found significant in the areas of engineering and/or the military and are considered objects. These guns also had an association with a specific event in military history and are located in their original positions along coastal areas. No historic tanks or guns are included in the current cultural resources inventory at IAAAP.

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# 5.0 REFERENCES C1TED

Albert, L. and D.G. Wyckoff. 1984. “Oklahoma Environments Past and Present.” In *Prehistory of Oklahoma,* edited by R.E. Bell. Academic Press. Orlando, Florida. pp.1-45.

Alex, Lynn Marie. 2000. Iowa’s Archeological Past. University of Iowa Press. Iowa City.

Allen, L.F. 1852. *Rural Architecture: Being a Complete Description of Farm Houses, Cottages, and Out Buildings Comprising Wood Houses, Workshops, Tool Houses, Carriage and Wagon Houses, Stables, Smoke and Ash Houses, Ice Houses, Apiary or Bee Houses, Poultry Houses, Rabbitry, Dovecote, Piggery, Barns and Sheds for Cattle, Together with Lawns, Pleasure Grounds and Parks; the Flower, Fruit and Vegetable Gardens.* New York, New York: C.M. Saxton Agricultural Book Publishers.

American Ordinance. 2012 *American Ordinance*, Retrieved from http://www.aollc.biz/, November 25, 2012.

Antrobus, A.M. 1915. *History of Des Moines County, Iowa, and Its People*. 2 vols. S.J. Clarke, Chicago.

Asch, N., and D.L. Asch. 1985. Archaebotany. In *Deer Track: A Late Woodland Village in the Mississippi Valley*, edited by C.R. McGimsey and M.D. Conner, pp. 44-117. Technical Report No. 1, Kampsville Archeological Center, Center for American Archeology. Kampsville, Illinois.

Baerreis, D.A., R. Bryson, and W. Wendland. 1970. The Character of Late-Glacial and Post-Glacial Climatic Changes. In P*leistocene and Recent Environments of the Central Great Plains,* edited by W. Dort and J.K. Jones. Department of Geology, University of Kansas Special Publication 3, Lawrence.

Beck, Mary Jane. 1995. Facsimile from Mary Jane Beck, Realty Specialist, to Bob Haines, Iowa Army Ammunition Plant, regarding Memorandum of Agreement (MOA) for Iowa AAP Housing Area.

Bell, R.E. 1958. G*uide to the Identification of Certain American Indian Projectile Points*. Special Bulletin No. 1. Oklahoma Anthropological Society, Norman.

Benn, D.W. 1984. *Excavations at the Christenson Oneota Site (13PK407), Central Des Moines River Valley, Iowa*. Report No. 592. Center for Archeological Research, Southwest Missouri State University, Springfield.

Benn, D.W. 1986. *The Western Iowa Rivers Basin: An Archeological Overview*. Report No. 677. Center for Archeological Research, Southwest Missouri State University, Springfield.

Benn, D.W. (editor). 1989. Hawks, Serpents, and Bird-Men: Emergency of the Oneota Mode of Production. *Plains Anthropologist* 35:233-260.

Benn, D.W., E.A. Bettis III, and R.C. Vogel. 1988. *Archeology and Geomorphology in Pools 17-18, Upper Mississippi River*. 2 vols. Report No. 714. Center for Archeological Research, Southwest Missouri State University, Springfield. Submitted to the U.S. Army Crops of Engineers, Rock Island District, Rock Island, Illinois.

Benn, D.W., and L.D. Rogers. 1985. *Interpretive Overview of cultural Resources in Saylorville, Lake, Iowa. Report No. 627-II*. Center for Archeological Research, Southwest Missouri State University, Springfield.

Billington, R.A. 1945. The Origin of the Land Speculator as a Frontier Type. *Agricultural History* 19:204-212.

Brown, J.A. and R.K. Vierra1983. What Happened in the Middle Archaic? Introduction to an Ecological Approach to Koster Site Archeology. In A*rchaic Hunters and Gathers in the American Midwest*, edited by J.L. Phillips and J.A. Brown, pp. 165-195. Academic, New York.

Chapman, H.C. 1975. *Archeology of Missouri,* vol. University of Missouri Press, Columbia,. Missouri.

Conrad, L.A. 1981. *An Introduction to the Archeology of Upland West Central Illinois: A Preliminary Archeological Survey of the Canton to Quincy Corridor for the Proposed FAP-407 Highway Project*. Reports of Investigations No. 2. Archeological Research Laboratory, Western Illinois University, Macomb.

Cunning, Bryan C., Kathryn M. Lombardi, Jesse A. Belfast, Douglas J. Kullen, and Stephen J.Hinks. 2009 P*hase I Archeological Investigations of the West Perimeter Fence Alignment of theIowa Army Ammunition Plant at Middletown, in Danville and Augusta Townships, DesMoines County, Iowa.* Michael Baker Jr., Moon Township, Pennsylvania. Report prepared for Conti Federal Services, Inc., South Plainfield, New Jersey, and the U.S. Army Corps of Engineers, Omaha District, Offutt Air Force Base, Nebraska.

Cunning, Bryan, Kathryn M. Lombardi, Joe Alan Artz, Jesse Belfast, Douglas J. Kullen, and Stephen J. Hinks. 2009. P*hase I Archeological Survey of the West Perimeter Fence Alignment of the Iowa Army Ammunition Plant at Middletown, in Danville and Augusta Townships, Des Moines County, Iowa.* CRM. Moon Township, Pennsylvania: Prepared by Michael Baker Jr., Inc. for Conti Federal Services, Inc. and the U.S. Army Corps of Engineers, Omaha District.

Cunning, Bryan, Kathryn M. Lombardi, Douglas Kullen, Jesse Belfast, and Stephen J. Hinks. 2009. *Phase I Archeological Survey of the West and East Perimeter Fence Alignments of the Iowa Army Ammunition Plant at Middletown, in Danville, Augusta, and Union Townships, Des Moines County, Iowa*. CRM. Moon Township, Pennsylvania: Prepared by Michael Baker Jr., Inc. for Conti Federal Services, Inc. and the U.S. Army Corps of Engineers, Omaha District.

Davis, J.O. 1989. “Archeological Paleoenvironments of the Southwestern Division.” U.S. Army Corps of Engineers, Arkansas Archeological Survey, Fayetteville.

Delcourt, Paul and Hazel Delcourt. 1985. *Long-term Forest Dynamics of the Temperate Zone: A Case Study of Late-Quaternary Forests in Eastern North America.* Ecological Studies, United States

Dumont, J. 1981. The Paleo Indian-Early Archaic Continuum: An Environmental Approach. *Archeology of Eastern North Americ*a. 9:18-37.

Flint, R.F. 1957. Postglacial Hypsithermal Interval. *Science* 125:182-184.

Funk, R.E. 1973. A*boriginal Settlement Patterns in the Northeast.* New York State Museum Memoir 20. University of the State of New York, Albany, New York.

Gaither, Steve. 1997. *Looking Between Trinity and the Wall: Army Materiel Command Cold War Material Culture within the Continental United States 1945-1989*. Report prepared for the U.S. Army Corps of Engineers, Fort Worth District. Geo-Marine, Inc., Plano, Texas.

Gene Stout and Associates, and Blythe & Trousil, Inc. 2006 *Integrated Natural Resources Management Plan and Environmental Assessment, Iowa Army Ammunition Plant*. CRM. Report prepared for Iowa Army Ammunition Plant, Iowa and Rock Island Arsenal, Illinois. Loveland, CO and Cheyenne, WY.

Gibbon, G.E. 1974. A Model of Mississippian Development and Its Implications for the Red Wing Area. In *Aspects of Great Lakes Anthropology*, edited by E. Johnson, pp. 129-137. Minnesota Prehistoric Archeological Series No. 11. Minnesota Historical Society, St. Paul.

Gibbon, G.E. 1986. The Mississippian Tradition: Oneota Culture. *In Introduction to Wisconsin Archeology,* edited by W. Green, J.B. Stoltman, and A.B. Kehoe. The Wisconsin Archeologist 67:314-338.

Global Security. 2011 *Iowa Army Ammunition Plant*. Iowa Army Ammunition Plant. http://www.globalsecurity.org/military/facility/aap-iowa.htm.

Goodyear, A.C. 1982. The Chronological Position of the Dalton Horizon in the Southeastern United States. *American Antiquity* 47:382-395.

Green, W. 1987. Between Hopewell and Mississippian: Late Woodland in the Prarie Peninsula as Viewed from the Western Illinois Uplands. Unpublished Ph.D. dissertation, Department of Anthropology, University of Wisconsin, Madison.

Gregory, Michael M., Michael Kolb, and Justin L. Harvey. 2005 Archeo*logical and Geomorphical Phase I Investigations Performed along the South Perimeter Fence Alignment of the Iowa Army Ammunition Plant at Middletown in Des Moines County, Iowa.* CRM. Milwaukee, Wisconsin: Prepared by Great Lakes Archeological Research Center, Inc. and Strata Morph Geoexploration, Inc. for American Ordnance LLC.

Griffitts, Eric F. 2005 A*rchitectural Survey of Lines 5A, 5B, 6, 7, 8, 800, and 9 and National Register of Historic Places Evaluation of Line 7.* Report Prepared for the U.S. Army Corps of Engineers. Parsons, Inc.

Griffin, J.B. 1967 Eastern North American Archeology: A Summary. *Science* 156:175-191.

Hall, R.L. 1977. An Anthroocentric Perspective for Eastern United States Prehistory. *American Antiquity* 42:499-518.

Hall, R.L 1980 An Interpretation of the Two-Climax Model of Illinois Prehistory. In *Early Native Americans: Prehistoric Demography, Economy and Technology*, edited by D.L. Browman, pp. 401-462.

Hayden, B. 1982. Interaction Parameters of the Demise of Paleo-Indian Craftsmanship. *Plains Anthropologist* 27:109-123.

Henning D.R. 1970. Development and Interrelationships of Oneota Culture in the Lower Missouri River Valley. *The Missouri Archeologist* 32.

Hinks, Stephen 2009. *Phase I Archeoligical Investigation of Sites 13DM1067 and 13DM1068, Union and Augusta Townships, Des Moines County, Iowa.* Letter Report. Moon Township, Pennsylvania: Prepared by Michael Baker Jr., Inc. for Iowa Army Ammunition Plant.

Hinks, Stephen, and Kathryn M. Lombardi. 2009 *Supplemental Phase I Archeoligical Investigations of the South Perimeter Fence Alignment of the Iowa Army Ammunition Plant at Middletown, in Union and Augusta Townships, Des Moines County, Iowa*. CRM. Moon Township, Pennsylvania: Prepared by Michael Baker Jr., Inc. for Conti Federal Services, Inc. and the U.S. Army Corps of Engineers, Omaha District.

Hudson, J.C. 1969 A Location Theory for Rural Settlement. A*nnals of the Association of American Geographers* 59:365-381.

Iowa Army Ammunition Plant. 1995 Memorandum of Agreement Among the Iowa Army Ammunition Plant, the Iowa State Historic Preservation Officer, and the Advisory Council on Historic Preservation Pursuant to 36 CFR SS 800.5 (e)(4) Regarding the Conveyance of the Iowa Army Ammunition Plant’s Housing and Recreational Areas to the City of Middletown, Iowa.

Joint Munitions Command of the U.S. Army. 2012. *The United States Army | Joint Munitions Command.* Iowa Army Ammunition Plant Installation Overview. http://www.jmc.army.mil/Installations.aspx?id=IowaOverview

Kelly, J.E., F. Finney, D.L. McElrath, and S.J. Ozuk. 1984. Late Woodland Period. In *American Bottom Archeology*, edited by C.J. Bareis and J.W. Porter, pp. 104-127. University of Illinois Press, Urbana.

Krech III, Shepard. 2012 “Paleoindians and the Great Pleistocene Die-Off” N*ature Transformed, TeacherServe.National Humanities Center*. October 23, 2012 . <http://nationalhumanitiescenter.org/tserve/nattrans/ntecoindian/essays/pleistocene.htm>

Leininger, Hope and Paula F. Bienenfeld. 2002 *Light Phase II Investigation of Twenty-Seven Archeological Sites at the Iowa Army Ammunition Plant, Des Moines County, Iowa*. CRM. Prepared by Tetra Tech, Inc. for U.S. Army Corps of Engineers, Planning and Environment Division, Mobile District. Fairfax, Virginia.

Louis Berger & Associates, Inc. 1990. *Fort Drum Cultural Resource Project, Task Order 11: Stage I and II Testing of Fifteen Historic Sites Within the Cantonment Area, Fort Drum, New York*. CRM. Report prepared for U.S. Army, 10th Mountain (Light Infantry) Division, Fort Drum, New York, and the National Park Service Mid-Atlantic Region, Philadelphia. East Orange, New Jersey: The Cultural Resource Group, Louis Berger & Associates, Inc.

Louis Berger & Associates, Inc. 1991. *Fort Drum Cultural Resource Project, Task Order 27: Stage I and II Archeological and Historical Investigations of Eleven Historic Sites Within the Range Training Areas, Jefferson County, New York*. CRM. Report prepared for U.S. Army, 10th Mountain (Light Infantry) Division, Fort Drum, New York, and the National Park Service Mid-Atlantic Region, Philadelphia. East Orange, New Jersey: The Cultural Resource Group, Louis Berger & Associates, Inc.

MacDonald and Mack Partnership 1984 *Historic Properties Report, Iowa Army Ammunition Plant, Middletown, Iowa*. CRM. Report prepared under contract with Building Technology Incorporated for the U.S. Army Materiel Development and Readiness Command. Minneapolis, Minnesota.

Manning, A.E. 1984 *Nineteenth Century Farmsteads on the Inner Coastal Plain of New Jersey*. Edited by. O. Chesler. Selected Papers on the Identification, Evaluation, and Protection of Cultural Resources: 42–92.

Markham, C.W. 1991 Above the American Bottom: The Late Woodland-Mississippian Transition in Northeast Illinois. In *New Perspectives on Cahokia*, edited by J.B. Stoltman, pp. 177-208. Madison.

Mason & Hangar-Silas Mason Co., Inc. 1995 *National Historic Preservation Act, State Historic Preservation Officer (SHPO) Section 106-Review*, Housing Area Conveyance of the Iowa Ammunition Plant. CRM.

McClelland, Linda F. 1997 *National Register Bulletin 16A: How to Complete the National Register Registration Form*. Washington D.C.: National Park Service, Interagency Archeologiacl Services Division.

McCollum, Timothy James n.d. *Sac and Fox*. Oklahoma Historical Society’s Encyclopedia of Oklahoma History & Culture. http://digital.library.okstate.edu/encyclopedia/entries/S/SA001.html.

McConnaughy, M.A., C.V. Jackson, and F.B. King. 1985. Two Early Mississippian Period Structures from the Rench Site (11P4), Peoria County, Illinois. *Midcontinental Journal of Archeology* 10 (2): 171-194.

McElrath, D.L. 1993. Mule Road: A Newly Defined Late Archaic Phase in the American Bottom. In *Highways to the Past: Essays on Illinois Archeology in Honor of Charles J. Bareis,* edited by T.E. Emerson, A.C. Fortier, and D.L. McElrath. Illinois Archeology 5 (1,2):148-157.

McElrath, D.L., T.E. Emerson, A.C. Fortier, and J.L. Phillips 1984. Late Archaic Period. In A*merican Bottom Archeology*, edited by C.J. Bareis and J.W. Porter, pp. 36-58. University of Illinois Press, Urbana.

Michael Baker Jr., Inc. 2009. *Supplemental Phase I Archeoligical Investigation of Sites 13DM1052 and 13DM1054, Union Township, Des Moines County, Iowa*. Letter Report. Moon Township, Pennsylvania: Prepared for Iowa Army Ammunition Plant.

Moffat, J. J., and C.A. Moffat. 1988. Archeo*logical Data Recovery at the Cormorant Site (13MA387): A Multicomponent Woodland and Oneota site at Lake Red Rock, Iowa*. Report No. 128. American Resources Group Ltd., Carbondale, Illinois.

Morrow, T. 1984a *Iowa Projectile Points*. Special Publication. Office of the State Archeologist, University of Iowa, Iowa City.

Morrow, T. 1984b *Chert Resources of Southeast Iowa*. Research Papers 9(1). Office of the State Archeologist, The University of Iowa, Iowa City.

Perry, Michael 1996 *The Woodland Period.* Office of State Archeologist. Accessed on October 31, 2012 from http://www.uiowa.edu/~osa/learn/prehistoric/wood.htm

Peyton, Paige. 2002 *Integrated Cultural Resources Management Plan for Iowa Army Ammunition Plant, Iowa.* CRM. Report prepared for AMC Installations and Services Activity, Rock Island Arsenal, Illinois. Colton, California: Earth Tech, Inc.

Peyton, Paige. 2002. I*ntegrated Cultural Resources Management Plan for the Iowa Army Ammunition Plant (IAAAP)*. Prepared for AMC Installations and Services Activity Rock Island Arsenal, Illinois by EarthTech.

Saucier, R.T. 1974. “Quaternary Geology of the Lower Mississippi Valley.” Arkansas Archeological Survey Research Series No. 6. *Arkansas Archeological Survey*. Fayetteville.

Schermer, Shirley J., William Green and James M. Collins. 1995. "A Brief Culture History of Iowa." The Office of State Archeology . Electronic document, http://www.uiowa.edu/~osa/learn/prehistoric/overview.htm, accessed October 2013.

Sherfy, Marcella, and W. Ray Luce. 1998 *National Register Bulletin 22: Guidelines for Evaluating and Nominating Properties that Have Achieved Significance within the Past Fifty Years*. Washington D.C: National Park Service, U.S. Department of the Interior.

Stafford, Barbara, H. Hasson, E. Jelks, J. Phillips, E. Hajic, N. Asch, and D. Asch. 1984 *Archeological Overview and Management Plan for the Iowa Army Ammunition Plant, Des Moines County, Iowa.* CRM. Report prepared for National Park Service, Atlanta, Georgia. Walnut Creek, California: Woodward-Clyde Consultants.

Tetra Tech, Inc. 2005. *A Light Phase II Investigation of Three Archeological Sites at the Iowa Army Ammunition Plant, Des Moines County, Iowa*. CRM. Bothell, Washington: Submitted to U.S. Army Installation Management Agency, Rock Island, Illinois.

Tetra Tech, Inc. 1987. *Intensive Phase I Archeological Excavations at Fourteen Sites Within the Iowa Army Ammunition Plant, Des Moines County, Iowa*. CRM. Pasadena, California.

Thompson, Joe B. 2010a. *Phase I Archeological and Geomorphological Investigations for Proposed South Loop Waterline Improvements and Installation on the Iowa Army Ammunition Plant, Des Moines County, Iowa*. CRM. Cresco, Iowa: Prepared by Bear Creek Archeology, Inc. for American Ordnance and Iowa Army Ammunition Plant.

Thompson, Joe B. 2010b. P*hase I Archeological and Geomorphological Investigations for Proposed 40 MM Test Site on the Iowa Army Ammunition Plant, Des Moines County, Iowa*. CRM. Cresco, Iowa: Prepared by Bear Creek Archeology, Inc. for American Ordnance and Iowa Army Ammunition Plant.

Tiffany, J.A. 1979. An Overview of Oneota Sites in Southeastern Iowa: A Perspective from the Ceramic Analysis of the Schmeiser Site, 13DM101, Des Moines County, Iowa. *Proceedings of the Iowa Academy of Science* 89 (4):133-150.

University of Iowa. 2012. *The Vascular Plants of Iowa.* Accessed on October 30th, 2012 from. http://uipress.lib.uiowa.edu/vpi/IowaFlora.aspx

U.S. Army Corps of Engineers. 1995. *Collections Summary for Iowa Army Ammunition Plant, Iowa. U.S. Army NAGPRA Compliance Project, Technical Report No. 5. St. Louis, Missouri*: U.S. Army Corps of Engineers, St. Louis District for U.S. Army Environmental Center, Environmental Compliance Division, Aberdeen Proving Ground, Maryland.

U.S. Census Bureau. 2010. *U.S. Federal Population, Agricultural, and Manufacturing Census*. Washington, D.C.: U.S. Census Bureau.

U.S. Department of the Interior (USDI). n.d. *National Register Bulletin 38: Guidelines for Evaluating and Documenting Traditional Cultural Properties.* Washington D.C: National Park Service, Interagency Archeologiacl Services Division, Southeast Region.

Warren, R.E. and M.J. O’Brien. 1982. Models of Adaptation and Change. In *The Cannon Reservoir Human Ecology Project*, edited by M.J. O’Brien, R.E. Warren, and D.E. Lewarch, pp. 85-100. Academic, New York.

Wacker, P.O. 1975. *Land and People, A Cultural Geography of Preindustrial New Jersey; Origins and Settlement Patterns.* New Brunswick: Rutgers University Press.

Waite, Phillip R. 1996. *Iowa Army Ammunition Plant Cultural Resources Management Plan.* CRM. Report prepared for U.S. Army Corps of Engineers, Fort Worth District. Geo-Marine, Inc.

Winham, R. Peter, Larry Abbott, Robert Brakenridge, Timothy Gillen, L. Adrien Hannus, Edward J. Lueck, William Ranney, Steven Ruple, and Joseph Tiffany. 1991. *Cultural Resources Reconnaissance Survey of the Iowa Army Ammunition Plant, Des Moines County, near Burlington, Iowa. CRM*. Report prepared for U.S. Army Corps of Engineers, Omaha District. Sioux Falls, South Dakota: Archeology Laboratory, Augustana College.