

**INTEGRATED CULTURAL RESOURCE MANAGEMENT PLAN
PICATINNY ARSENAL, ROCKAWAY AND JEFFERSON TOWNSHIPS,
MORRIS COUNTY, NEW JERSEY: 2009-2013**

NOVEMBER 2008

FINAL VERSION

Prepared by:

**CHUGACH INDUSTRIES, INC.
ENVIRONMENTAL OFFICE
BUILDING 319
PICATINNY ARSENAL**

Prepared for:

PICATINNY ARSENAL, NEW JERSEY



STAFF ACTION COVERSHEET

US Army Garrison Picatinny Arsenal



SUBJECT: Integrated Cultural Resource Management Plan (ICRMP)
2009-2013 FINAL Review

DATE: 31 October 2008

PROBLEM OR REASON FOR ACTION: - Current 5-yr ICRMP expires 31 OCT 2008

FACTS OR DISCUSSION: - The ICRMP is Picatinny's protection and compliance plan for managing Historic Properties and Cultural Resources. This plan allows the Picatinny mission to continue without disruption while, at the same time, ensuring that significant Cultural Resources are documented and/or preserved for future generations.

CONCLUSIONS (IF APPLICABLE): - All disturbance on archaeological sites, and undertakings on historic buildings and/or districts determined eligible for the NRHP must be planned and executed in accordance with the Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties

RECOMMENDATIONS: - Please review by COB 5 November 2008.

ACTION OFFICER/ACTIVITY/PHONE NUMBER: Jason Huggan/X3664

NAME/SIGNATURE OF ACTIVITY DIRECTOR/CHIEF: Tom Solecki/Env. Affairs

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COORDINATION <small>(INDICATE ROUTING - CHECK BOX)</small>					COMMAND SECTION				
SECTION	CONCUR	NON CONCUR	INITIALS	DATE		APPROVED	INFO	INITIALS	DATE
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Garrison Commander's Remarks:

09-032

INFORMATION PAPER

IMNE-PIC-PWE
30 October 2008

SUBJECT: FINAL Integrated Cultural Resource Management Plan (ICRMP)

PURPOSE: Please review and sign the FINAL ICRMP for 2009-2013

ACTION: Please review the document as per AR 200-1 this document does not need to be officially signed by the Garrison Commander.

Points of major interest and facts:

- The ICRMP is Picatinny's protection and compliance plan for managing Historic Properties and Cultural Resources. It aids facility personnel in incorporating Historic Property and Cultural Resource treatment measures into planning of projects such as new construction and major additions, structural rehabilitation, building maintenance, demolition, etc. This integration allows the Picatinny mission to continue without disruption while, at the same time, ensuring that significant Cultural Resources are documented and/or preserved for future generations;
- The U.S. Army, as a Federal agency, has management responsibilities concerning the preservation of Cultural Resources on land it controls or uses. Federal laws and regulations authorizing the Army to undertake this responsibility include: National Historic Preservation Act, 36 CFR 800, which includes the Section 106 and 110 processes; Army Regulation 200-1, 13 December 2007, "Environmental Protection and Enhancement" dictates Army policy toward compliance with cultural resource management laws and regulations; and Department of Defense Instruction 4715.uu "Cultural Resources Management" provides guidance for implementing AR 200-1;
- The identified historic properties at Picatinny that are eligible for the National of Register of Historic Places (NRHP) include 125 structures that are contained within five historic districts, two individually eligible buildings, one architectural feature (Cannon Gates), and two archaeological sites (determined as potentially eligible). Currently, 94 archaeological sites may exist across Picatinny, along with 26 already identified archaeological sites. Further Phase I Identification and/or Phase II Evaluation Surveys are recommended at these sites prior to development. Overall, as a result of completed field surveys, 152 areas of varying size and an approximate total of 2,050 acres across the installation have been identified as sensitive and/or potentially sensitive, yet disturbed, for the occurrence of archaeological materials, along with a total of 27 archaeological sites have been officially identified with Smithsonian Site Registration Trinomial numbers and recorded with the New Jersey State Museum;
- All disturbance on archaeological sites, and undertakings on historic buildings and/or districts determined eligible for the NRHP must be planned and executed in accordance with the *Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties*. Treatment considerations for the management of archaeological sites including Native American remains, curation and artifact collections, and historic building undertakings including preservation, rehabilitation, restoration, reconstruction requirements, new construction, additions, and Design Build, accessibility, Anti-Terrorism Force Protection, and Ordnance Testing and Safety Upgrades, landscaping, viewshed and features concerns, unintentional or inadvertent damage to eligible properties, and demolition are discussed throughout, along with the installations Standing Operating Procedures developed to address Cultural Resource management concerns.



Mr. Jason J. Huggan/IMNE-PIC-PWE/x3664

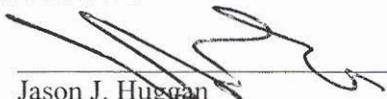
DEPARTMENT OF THE ARMY
U.S. ARMY RESEARCH, DEVELOPMENT AND ENGINEERING CENTER (ARDEC)
PICATINNY ARSENAL, NEW JERSEY 07806-5000

RECORD OF ENVIRONMENTAL CONSIDERATION

TITLE: Update to Integrated Cultural Resource Management Plan, 2009-2013

DATE: November 18, 2008

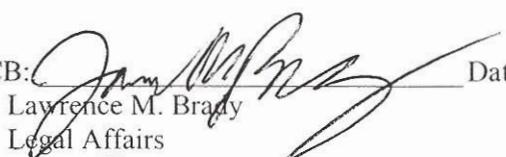
Proponent: IMNE-PIC-PWE

 Date: 18 Nov 08
Jason J. Huggan
Cultural Resource Manager, Chugach Environmental Office

IMNE-PIC-PWE

 Date: 25 Nov 08
Thomas J. Solecki
Chief, Environmental Affairs Division

AMSRD-AAR-GCB:

 Date: 12/4/08
Lawrence M. Brady
Legal Affairs

IMNE-PIC-PW:

 Date: 8 Dec 08
Richard A. Havrisko
Director, Public Works

TITLE: Update to Integrated Cultural Resource Management Plan (ICRMP),
2009-2013

DATE: November 18, 2008

DESCRIPTION OF PROPOSED ACTION:

Army Regulation (AR) 200-1 directs each installation to develop an ICRMP in order to successfully balance Cultural Resource Management requirements with the military mission. The purpose of the ICRMP is to provide guidelines and procedures for managing, protecting, and preserving cultural resources on Picatinny Arsenal property.

An Environmental Assessment (EA) was performed for the ICRMP in 2001. Given there are no anticipated significant impacts associated with the proposed implementation of the ICRMP, this action has been determined to have no adverse environmental impact on the quality of the environment.

It has been determined that the action as stated below:

Qualified for Categorical Exclusion, AR 200-2, Appendix B, Section 2 (b) (3), and no extraordinary circumstances exist as defined in Section 651.29 AR 200-2. The purpose of this Record of Environmental Consideration (REC) is to determine if any potential significant environmental impacts would result from implementing this ICRMP from 2009-2013.

ENVIRONMENTAL QUALITY CONSIDERATION

Proponent:

1. Concise description of the proposed project:

Picatinny Arsenal is required to comply with several Federal statutes, regulations, and Executive Orders regarding Cultural Resource Management, in addition to AR 200-1 "Environmental Protection and Enhancement" (13 December 2007). AR 200-1, Chapter 6 details U.S. Army policy regarding Cultural Resource Management and outlines procedures for complying with all applicable regulations. In addition, AR-200-1 directs each installation to develop an ICRMP in order to successfully balance cultural resources management requirements with mission requirements.

The purpose of the ICRMP is to provide guidelines and procedures for managing, protecting, and preserving Cultural Resources on Picatinny Arsenal. In accordance with this objective, the ICRMP includes several components: a summary of the Cultural Resource studies completed at the Arsenal; guidance on protecting and preserving known sites; identification of archaeologically sensitive areas where further investigations are recommended; specific guidelines for the appropriate methods of preservation, repair, and replacement of original building materials within Historic Districts at the Arsenal; compliance as it applies to routine installation operations, such as minimal excavations, building maintenance, structural rehabilitation, and mothballing of historic buildings; a Management Plan that establishes protocol for coordinating undertakings in consultation with the New Jersey State Historic Preservation Officer (NJ SHPO); and integration with new facility planning and construction of capital and BRAC projects and building demolition.

recommended Cultural Resource excavations/investigations in certain areas may reduce the feasibility of completing them.

The implementation of the ICRMP would require the irreversible and irretrievable commitment of resources in the form of manpower and monetary costs of completing regular, systematic Cultural Resources investigation and revision of the ICRMP every 5 years. In addition, the costs of repairing, renovating, or maintaining certain historic buildings in accordance with specifications prescribed in the ICRMP represent a commitment of resources that may be considered irretrievable.

This REC has been prepared in accordance with the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Regulations Implementing NEPA (40 CFR 1500-1 508). In accordance with NEPA regulations, the No Action Alternative was considered. Under the No Action Alternative, the ICRMP would not be implemented and the Cultural Resource Management procedures currently in effect at the Arsenal would continue. Due to the nature of the Proposed Action and associated governing implementation requirements, no other alternatives were considered. Similarly, no comments, issues, or controversies have been identified that would justify the development of alternatives involving implementation of only certain parts of the ICRMP. No significant adverse environmental or cumulative impacts are expected to result from implementing the ICRMP. The ICRMP will facilitate planning for further Cultural Resource investigations and protection/preservation of known Cultural Resource sites. The integrated approach for the Cultural Resource Management program and agency coordination process will streamline the program currently in effect at the installation, leading to increased efficiency of regulatory review and approvals and reduced program implementation costs. In addition, implementation of the ICRMP will help the Army's Cultural Resources staff to ensure all activities at Picatinny Arsenal are in compliance the Federal statutes, regulations, and Executive Orders governing historic preservation.

2. Does proposal conform with installation Master Plan?

yes no (Discuss)

3. Would the proposed project alter land use on the installation?

yes (Discuss) no

4. Prior use and condition of the property equipment, and/or completed project involved:

Compliance with 2003-2008 ICRMP

5. Proposed use of the property, equipment, and/or completed project:

Given there are no anticipated significant impacts associated with the proposed implementation of the ICRMP, this action has been determined to have no adverse environmental impact on the quality of the environment.

**INTEGRATED CULTURAL RESOURCES
MANAGEMENT PLAN (ICRMP)
PICATINNY ARSENAL
ROCKAWAY AND JEFFERSON TOWNSHIPS,
MORRIS COUNTY, NEW JERSEY
2009 - 2013**

Prepared for:

PICATINNY ARSENAL, NEW JERSEY

Prepared by:

Jason J. Huggan, M.A., R.P.A., Cultural Resource Coordinator

**CHUGACH INDUSTRIES, INC.
ENVIRONMENTAL OFFICE
BUILDING 319
PICATINNY ARSENAL**

NOVEMBER 2008

Executive Summary

Project Name. Integrated Cultural Resources Management Plan (ICRMP) for Picatinny Arsenal, Rockaway Township, Morris County, New Jersey.

Project Location and Environmental Setting. Picatinny Arsenal is located on an approximately 5,850-acre (2,367-hectare) site in the Townships of Rockaway and Jefferson, Morris County, New Jersey. Contained within the Green Pond Brook Valley, Picatinny Arsenal is flanked by uplands to the west and east. Steep slopes, stony soils and rocky outcrops are characteristic of the region.

Purpose and Goals. The ICRMP is the installation's protection and compliance plan for managing historic properties, cultural resources and archaeological sites, and historic buildings and districts within the military reservation. It aids facility personnel in incorporating historic property and cultural resource treatment measures into planning of projects such as new construction and major additions, structure rehabilitation, building maintenance, mothballing/decommissioning, etc. This integration will allow the Picatinny mission to continue without disruption while, at the same time, ensuring significant cultural resources are documented and/or preserved for future generations.

Regulatory Basis. The U.S. Army, as a federal agency, has management responsibilities concerning the protection and preservation of cultural resources on land it controls or uses. Federal statutes require the Army identify and evaluate significant cultural resources on properties they own and manage. Federal laws and regulations authorizing the Army to undertake this responsibility include: National Historic Preservation Act (NHPA) of 1966, as amended through 2000 (16 U.S.C. 470-470w-6) and 36 CFR 800, 60, 63 and 78, which includes the Section 106 and 110 processes. Army Regulation 200-1, 13 December 2007, "Environmental Protection and Enhancement" dictates Army policy toward compliance with cultural resource management laws and regulations. Department of Defense (DoD) Instruction (DoDI) 4715.uu "Cultural Resources Management" provides guidance for implementing AR 200-1 (in DRAFT as of February 2008).

Planning Level Survey. Land use at the facility can be divided into three general periods: (1) prehistoric subsistence activities; (2) pre-Arsenal industrial and agricultural activities associated with rural community settlement; and (3) Arsenal-related construction endeavors and subsequent military-industrial activities. The first period is characterized by subsistence activities conducted by Native Americans prior to the invasion of European traders/settlers (i.e., prehistoric camp and rockshelter sites have been identified in the vicinity). The second period reflects industrial activities associated with iron mining and production endeavors during the colonial/pre-Arsenal period by European-American settlers, and rural settlement activities which included the limited cultivation of grains and livestock prior to 1880. The third land use period, construction activities associated with the creation of Picatinny (Dover) Powder Depot, beginning in 1880, involved the replacement or reuse of structures or remains associated with agricultural and early industrial periods of the area and the subsequent, dramatic land alterations inherent in the erection of a federal military reservation.

On the Arsenal's initial 1,866 acres (746.4 ha) in the Green Pond Brook valley, construction

activities focused on the erection of storage magazines, officer's quarters, and service facilities. Then in June 1891, 315 acres (126 ha) of Picatinny's land near Lake Denmark was ceded to the United States Navy for the establishment of the Navy's Lake Denmark Powder Depot to become its primary depot on the east coast. Picatinny Arsenal and the Navy's Lake Denmark Powder Depot expanded within the valley, their missions diversified to incorporate the manufacturing of increasingly more powerful explosives and ordnance, and involved significant construction and land moving activities. The most dramatic alteration of the landscape occurred in July 1926 when a lightning strike caused explosions and fires at the Lake Denmark facility. As a result, both Picatinny Arsenal and Lake Denmark facilities were rebuilt based on newly devised procedures and building specifications. Demolition and construction activities related to the aftermath of the 1926 explosion may have buried or built over many remaining potential archaeological sites. In 1960, Picatinny Arsenal incorporated the Lake Denmark property (back) into its reservation. Currently, the installation comprises approximately 5,850-acres of fee simple property including 793 buildings. Additionally, 641 acres of private property comprising 6 tracts are encumbered by Dept. of the Army restrictive easements. These tracts are not managed by Picatinny or the Cultural Resource Management Program. The arsenal is divided into four broad land use areas: (1) research, development and testing areas; (2) administrative areas; (3) housing and community areas; and (4) parking areas. Safety and unexploded ordnance (UXO) clearance zones in specific areas also exist and need to be considered during any development activities.

Picatinny houses the Headquarters of the U.S. Army Research, Development and Engineering Command (RDECOM), Armament Research, Development and Engineering Center (ARDEC). RDECOM -ARDEC's mission is "researching and developing armament and weapon systems for a changing Army" (Picatinny Arsenal 2008). A major subordinate command of the U.S. Army Materiel Command (AMC), RDECOM is responsible for developing high quality weapons and munitions for U.S. troops.

Cultural Resources Inventory. Architectural resources at Picatinny include buildings, structures, and features, including but not limited to all visible aspects of the built environment combining to form the installation's historic fabric, such as bridges and dams, sewage lift stations, playgrounds and court areas, cemeteries, parks and gardens, surrounding landscape and overall setting, etc. Across the installation, approximately 75-80% of its architectural resources have been assessed for their eligibility to the National Register of Historic Places (NRHP). Based on various evaluations and re-evaluations of the Arsenal's various military industrial areas, the installation has been determined to lack sufficient integrity to form a single historic district; however instead, five smaller districts remain containing 125 structures have since been recommended to be eligible (Sections 5 and 7).

As for archaeological resources, the existing inventory of prehistoric sites is limited due to the paucity of modern systematic archaeological surveys within the Highlands region, while very limited information is also available on the present conditions of reported or possible civilian historic industrial sites within Picatinny. In total, 94 potential and/or known historic archaeological sites, along with 20 potential and/or known prehistoric archaeological sites have been identified across the installation (114 Total Sites). Further Phase I Identification and/or Phase II Evaluation Surveys are recommended at 109 of these sites prior to developmental impact (Appendix D). Therefore, specific

information needs and data gaps for Picatinny include the identification of whether these sites still exist and, if they exist, an assessment of their current condition and their eligibility to the NRHP. Overall, as a result of completed field surveys (Sections 4 and 7, References), 152 areas of varying size and an approximate total of 2,050 acres across the installation have been identified as sensitive and/or potentially sensitive, yet disturbed, for the occurrence of archaeological materials, along with a total of 27 archaeological sites of both a prehistoric and historic nature have been officially identified with Smithsonian Site Registration Trinomial numbers and recorded with the New Jersey State Museum (NJSM).

Management Plan. All disturbance on archaeological sites, and undertakings on buildings and within historic districts determined eligible for listing or listed in the NRHP must be planned and executed in accordance with the *Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties*. Discussed within this Section are treatment considerations for the management of archaeological sites including Native American remains, curation and artifact collections, and historic building undertakings including preservation, rehabilitation, restoration, reconstruction requirements, new construction, additions, and Design Build, accessibility, Anti-Terrorism Force Protection (ATFP), and Ordnance Testing and Safety Upgrades, landscaping, viewshed and features concerns, unintentional or inadvertent damage to eligible properties, and demolition. Appendices F and G also included other treatment recommendations and references, along with the installations implemented Standing Operating Procedures (SOPs) developed to address historic preservation concerns relevant to proposed or planned development activities.

Location of Report Copies. Copies of this ICRMP are located at the Directorate of Public Works and the Environmental Affairs Division, and the New Jersey Historic Preservation Office in Trenton, New Jersey. Additionally, an internet version of this document is available at <https://picac2w4.pica.army.mil/ead/>.

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1.0 Introduction

This document is the 2009-2013 update of the Integrated Cultural Resources Management Plan (ICRMP) for Picatinny Arsenal located in the Townships of Rockaway and Jefferson, Morris County, New Jersey (Figure 1.1). This management plan is required and mandated by Army Regulation (AR) 200-1: “Environmental Protection and Enhancement”.

This report was prepared by Jason Huggan, Cultural Resource Manager (CRM) for Picatinny with Chugach Industries, Inc. The previous ICRMP was written by the prior CRM predecessor Kelly Ridgel, and Panamerican Consultants, Inc. (PCI), particularly Dr. Frank Schieppati and Mark Steinback, with contributions by Dr. Edward Curtin. This previous ICRMP was used as a general basis and background for the production of this present report.

1.1 GOALS AND PURPOSE

As a Federal agency, the Army has management responsibilities concerning the protection and preservation of cultural resources on land which it controls and manages. AR 200-1 establishes the Army’s policies, procedures, and responsibilities for complying with Federal Cultural Resource Management requirements. These requirements are briefly summarized in Section 2 of this document (also see Appendix C). These policies and procedures are prescribed to ensure the management of Historic Properties and Cultural Resources does not interrupt or slow the military mission. The ICRMP must be maintained on a regular basis, reviewed annually by the CRM and updated as the installation's mission or environmental changes warrant. The ICRMP is a five-year (5) plan for meeting historic preservation compliance and cultural resource management requirements and includes a strategy for incorporating the protection and supervision of these resources within ongoing mission activities and land use decisions.

The Army defines Cultural Resources as Historic Properties (buildings, districts, objects, sites, or structures) as defined in 36 Code of Federal Regulation (CFR) Part 60 and the National Historic Preservation Act (NHPA) that meet eligibility criteria for the National Register of Historic Places, whether or not they have been formally registered, identified, or acknowledged as “eligible”), including artifacts, records, and material remains related to such a property or resource; “cultural items” as defined in 25 U.S. Code (USC) Section 3001 and the Native American Graves Protection and Repatriation Act (NAGPRA); American Indian, Eskimo, Aleut, or Native Hawaiian “sacred sites” as defined by Executive Order (EO) 13007 to which access is provided under the American Indian Religious Freedom Act (AIRFA); “archaeological resources” as defined by 16 USC Section 470 aa-mm and the Archeological Resources Protection Act (ARPA); and “archaeological artifact collections and associated records” defined under 36 CFR Part 79 (DoDI 4715.uu DRAFT 2008; Section 2 of this document).

The goal of the ICRMP is to integrate the treatment of cultural resources with the installation's mission including programs, procedures, construction, military training, testing, research and development, projects and real estate property or land use decisions. This integration will allow the Picatinny mission to continue without disruption while, at the same time, ensuring significant resources are documented and/or preserved for future generations.

The ICRMP addresses applicable historic preservation compliance and cultural resource management requirements as defined by the NHPA, ARPA and the Antiquities Act, NAGPRA, AIRFA, EO 11593, 13007, and 13287, as well as the National Environmental Policy Act (NEPA), Historic Sites Act, Archaeological and Historic Preservation Act (AHPA), Presidential Memorandum regarding Government-to-Government Relations with Native Americans (1994), 36 CFR 79, and AR 200-1 and DoDI 4715.uu (Section 2 and Appendix C of this document).

In addition, the ICRMP will:

- specify compliance procedures with the New Jersey State Historic Preservation Office (NJ HPO) and the Advisory Council on Historic Preservation (ACHP) as required by Sections 106 and 110 of the NHPA (Section 2);
- identify pertinent legal requirements as well as procedures for integrating historic preservation compliance within the installation (Section 2);
- set priorities on a five-year (5) plan to identify additional field analytical and documentation projects needed to fill data gaps and further develop, evaluate and manage the inventory of cultural resources eligible for the National Register of Historic Places (NRHP), while integrating these activities into Picatinny's ongoing mission (Section 3);
- rank installation undertakings by their potential to damage or impact cultural resources eligible for the NRHP (Section 3);
- account for the installation's continuing Planning Level Survey is regularly updated independently of this document (Section 4);
- establish procedures for evaluating newly discovered cultural resources and periodically update existing determinations (Section 5);
- identify general levels of funding and scheduling for current, ongoing, and future cultural resource management projects (Section 5);
- provide guidelines and treatment procedures (Section 6; Appendix G) for the preservation of Historic Properties and Cultural Resources eligible for the NRHP; and

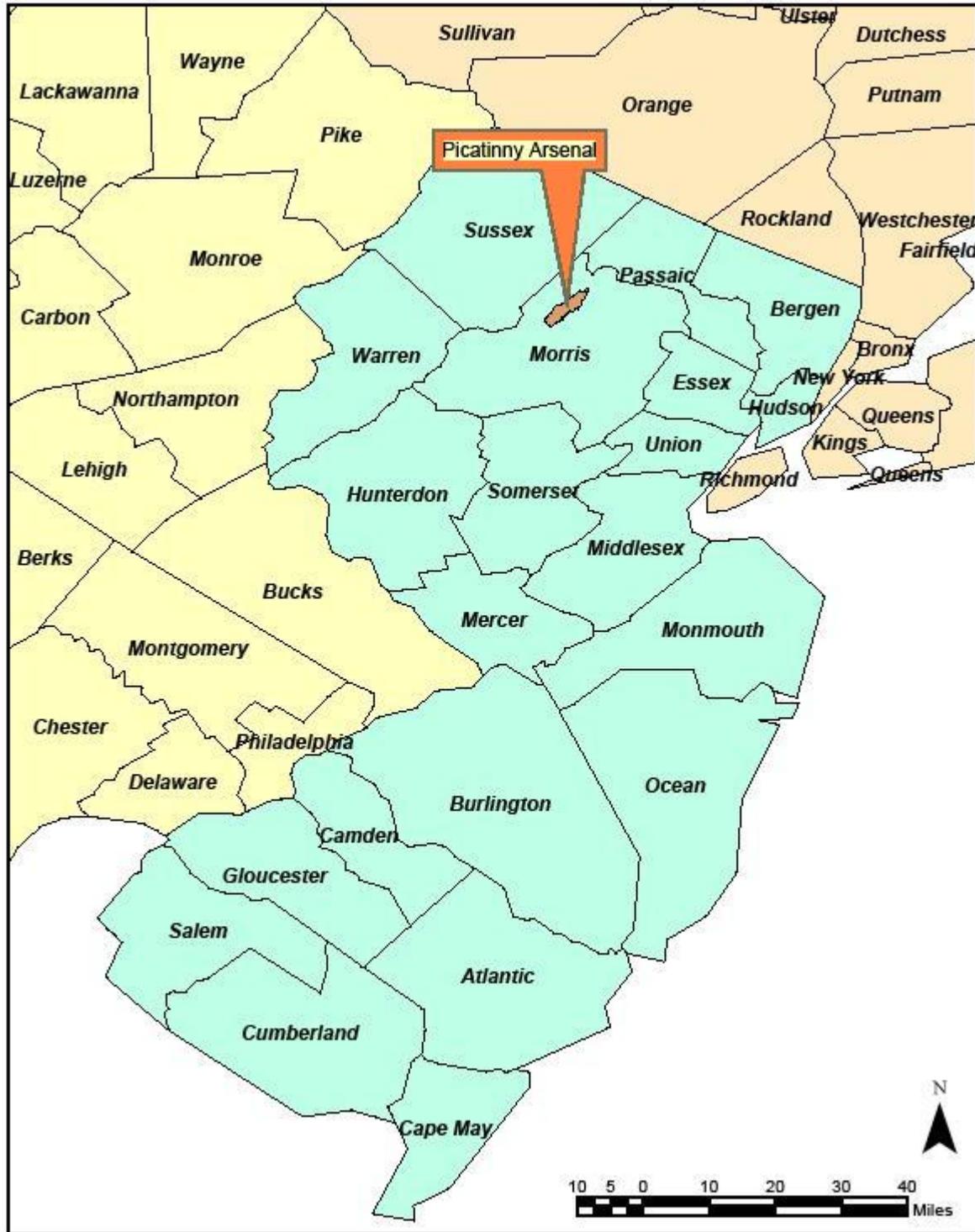


Figure 1.1. Picatinny Arsenal installation boundary, located within the Townships of Rockaway and Jefferson, Morris County, New Jersey.

1.2 INSTALLATION HISTORY AND OVERVIEW

Prior to 1880 and the creation of Picatinny Arsenal, iron mining historically occurred at both Mount Hope mine (directly adjacent to Picatinny) and Dickerson mine (west of Picatinny) as early as 1710, making these sites the oldest iron mining operations in both New Jersey and the thirteen colonies (Rutsch and van Voorst 1991:13). Additionally during the mid-18th Century, three (3) iron forges were established along Burnt Meadow and Green Pond Brooks, tributaries of the Rockaway River, within what would become known as Picatinny Arsenal. These iron forges were Mount Pleasant Forge (founded in 1748 and known as Lower Forge), Picatinny Forge (founded in 1749 and called Aetna or Middle Forge after 1772), and Burnt Meadow or Denmark Forge (founded in 1750 and known as Upper Forge) (Klein et al. 1986:2-10; Rutsch 1999:8-16). The fires for these forges were extinguished prior to the conclusion of the Civil War when the related iron extraction industry was in decline.

In September 1880, the U.S. Army established the Dover Powder Depot under the command of Major Francis H. Parker. Renamed the Picatinny Powder Depot, the installation's initial purpose was the storage of "powder, projectiles, and explosives, both for reserve supply and for issue; also for the preparation and issue of these stores" (Rogers 1931:53). The first powder storage magazine was completed in 1881 and had a storage capacity of 10,000 pounds (4,500 kilograms) of black powder. With four (4) storage magazines completed by November 1886, the depot received its first shipment of powder (300,000 pounds [135,000 kg]) later that month (Fitch and Glover 1990: B-164; Klein et al. 1986:2-12). To facilitate access to the installation and the general shipment of freight, the Morris County Railroad began building a rail line through the depot in 1886. By 1887, 232 miles (37 km) of track traversed the installation. Later in June 1891, 315 acres (126 ha) of Picatinny Powder Depot land near Lake Denmark were ceded to the Navy for the establishment of another powder depot. This area is now part of Picatinny Arsenal.

Historical development within Picatinny has been concentrated in the areas south and east of Picatinny Lake (Harrell 1996; Rogers 1931:29-31, 58-61, 77). The initial phase of development covers the Depot/Storage period from 1880 until 1907, when powder storage and increasing involvement in the assembly of cannon charges were Picatinny's primary mission. Between 1902 and 1906, armor-piercing shells were assembled at the depot. This process involved filling projectiles with explosives, such as Maximite and Explosive "D" (Fitch and Glover 1990: B-168; Harrell 1996:6; Klein et al. 1986:2-13; Rogers 1931:54). A major change in the installation's mission occurred in 1907 with the construction of the first Army-owned smokeless powder factory. This activity resulted in the re-designation of the depot as Picatinny Arsenal, and marked the beginning of the manufacturing phase, which continued until the early years of World War II (Fitch and Glover 1990: B- 168-169; Klein et al. 1986:2-13; Rogers 1931:54-55). By 1913, the installation was operating a plant for the manufacture of Explosive "D", which was used in armor piercing projectiles. During World War I, the Arsenal saw a rapid development not only of its physical plant around Picatinny Lake, but also of its capacity as a research and administrative installation. The installation staff also provided technical assistance to the private sector producing explosives for the war effort. During the 1920s, munitions experimentation and training had replaced powder production as the installation's mission, foreshadowing the later expansion of the facility into a complete ammunition arsenal (Fitch and Glover 1990: B-170; Harrell 1996:7;

Rogers 1931:54-55).

While Picatinny was transforming into a center for explosives research and development, the Navy's Lake Denmark installation remained a powder depot. On 10 July 1926, lightning struck the Lake Denmark Powder Depot, causing a series of fires and explosions. The explosions killed 19 people, including 11 Marines fighting the fires, and sent shock waves throughout the Green Pond Brook valley, destroying everything within 3,000-foot (915-meters) of the epicenter (Fitch and Glover 1990: B- 171-174; Klein et al. 1986:2-13; Rogers 1931:Chapter IX). A Naval investigation of the incident led to changes in safety and ammunition storage procedures and standards. The Army's own investigation led to a major overhaul of the Arsenal's facilities as the installation was enlarged for the purpose of consolidating the Army's ordnance activities in northern New Jersey. Devised with the safe handling of explosives as a top priority, plans for rebuilding Picatinny called for dividing the installation into zones based on function or activity (Fitch and Glover 1990: B- 174-176; Klein et al. 1986:2-14; Rogers 1931:94-96).

Between 1927 and 1937 both the Navy Powder Depot and Picatinny were completely rebuilt. With rehabilitation nearly complete in 1931, Picatinny became not only the major ammunition arsenal of the U.S. Army but was an important center of ammunition research, development and manufacturing (Fitch and Glover 1990: B- 177-180; Harrell 1996). While expanding production capabilities to meet the munitions requirements of World War II, Picatinny continued to conduct research on tetryl manufacturing and nitrocellulose powder. During the war, Lake Denmark Powder Depot continued to operate as the Navy's propellant and projectile storage area (Fitch and Glover 1990: B- 179-183).

During the Cold War, Picatinny remained a center for research and development for new weapons systems and advances in the production process. Innovations in production processes had occurred consistently and included the development of the explosive Haleite, and advances in artillery fuses, grenades and pyrotechnics during World War II. These types of innovations increased after the war and included the development of photoflash cartridges and bombs, the study of plastics and adhesives in the packaging of ammunition, the research on warheads for the Nike nuclear missile and other missile programs, and the production of a tank-piercing rocket for the 3.5-inch bazooka and an atomic shell for the 250 mm gun (Fitch and Glover 1990: B- 182-184).

In 1948, the Lake Denmark depot became home to the Navy's east coast rocket engine test center. The facility was called the Naval Aeronautical Rocket Laboratory, but was renamed the Naval Air Rocket Test Station (NARTS) in April 1950. The NARTS was established for the testing and evaluating of "rocket engines, components and propellants, and training service personnel in handling, servicing and operating rocket engines" (Department of the Navy 1997). The Navy subcontracted with private industry to accomplish these goals. Founded in 1941, Reaction Motors, Inc. (absorbed by the Thiokol Corporation in 1958) was one of these companies and their work led to the development of both the XLR-II and the XLR-99 engine. Tested at Lake Denmark, the XLR-99 liquid rocket engine was the first large, throttle-able, re-startable liquid propellant rocket engine. The XLR-99 was used for the X-15, the experimental hypersonic aircraft, and a preliminary design for the Space Shuttle called for its use (Department of the Navy 1997; Harrell 1996:8; Jenkins 1996:9-11, 40; Nolte et al. 1999; Picatinny Arsenal Historical Office

1984:23; Thiokol Corporation 1997; U.S. Naval Air Rocket Test Station, Technical Publications Branch 1950). Later decommissioned by the Navy, the Lake Denmark installation reverted to Picatinny Arsenal ownership in August 1960.

By 1977, most production of weapons and ammunition had ceased at Picatinny and its activities focused on research and development. Presently, Picatinny is the headquarters of the U.S. Army Armament Research, Development and Engineering Center (ARDEC), a part of the U.S. Army Research, Development and Engineering Command (RDECOM); representing the technical expertise of the U.S. government in guns and ammunition of all sizes, from pistols to howitzers. Picatinny Arsenal today plays an essential role in developing items and technologies as diverse as warheads, gun fire control, mines, and smart ammunition, among other responsibilities (Picatinny Arsenal 2008).

1.2.1 *Mission Overview*

Picatinny Arsenal has four broad missions executed at the installation (also see Section 3.2.1). These are:

- *Life-cycle acquisition management*, performed by Program Executive Officers (PEO), Project Managers (PM), and product managers;
- *Armament research, development and engineering*, performed by ARDEC headquartered at Picatinny and a part of RDECOM;
- *Base operations and community support*, performed by the Picatinny Arsenal Garrison with support from the U.S. Army Installation Management Command (IMCOM); and
- *Various other military tenant missions*.

Today, approximately 793 buildings are spread out over the installation's nearly 5,850 acres, making PICATINNY ARSENAL "the largest Army installation devoted solely to research and development" (STV/Lyon Associates, Inc. 1994:1.2.2).

1.3 **CONTENT**

As noted, the ICRMP is a strategy for complying with Cultural Resource Management requirements (Section 2) by incorporating the protection and management of these resources with mission activities and land use decisions. As the Garrison Commander's (GC) decision document for Cultural Resource Management, the ICRMP is utilized with other facilities management systems and processes so as to provide the greatest overall program effectiveness and business efficiency for planning purposes (DoDI 4715.uu DRAFT 2008). This planning consists of three (3) primary elements: the planning level survey, Cultural Resources inventory, and management plan (Section 3).

The *Planning Level Survey* consists of an analysis and discussion of Picatinny's cultural landscape (Section 4). This cultural landscape analysis integrates what is known about the installation with research contexts and questions appropriate to the installation and northern New Jersey to provide a framework for the ICRMP and the implementation of project specific compliance actions. Information derived from this analysis will assist in developing Geographical

Information System (GIS) data layers for use in analyzing the spatial relationships among all cultural resources within their natural and human settings. The cultural landscape analysis within the planning level survey offers an approach for comprehending the land use history of the installation.

The *Cultural Resources Inventory* merges previously gathered data with any new information to identify and inventory any data gaps across the installation (Section 5). Procedures and field efforts necessary to fill these data gaps and maintain the resource inventory also are presented, along with budgetary considerations. While some of the inventory may consist of archaeological resources, the bulk of the known Historic Properties at Picatinny are standing structures within larger historic districts.

The *Management Plan* is to prescribe Cultural Resource Management, preservation and protection, requirements and strategies for the inventoried properties and archaeologically sensitive areas based on their resource values (Section 6). The bulk of this section is concerned with the standards for treatment of Historic Properties as well as the internal installation coordination, consultation and SOPs for proposed or planned installation activities (Appendices F and G).

Lastly, the Appendices of this document conclude by presenting a glossary of Cultural Resource Management and historic preservation terms used frequently throughout, along with a list of acronyms; full-text versions of pertinent regulations; archaeological site descriptions and their current status; Historic Buildings Assessment Catalog; Treatment Plan Guidance for managing historic buildings and districts; Standard Operating Procedures (SOP) for undertakings; and an in-depth description of the installation's environmental setting.

2.0 Statutes and Regulations

This section provides a brief overview of the relevant Federal Cultural Resource Management statutes, regulations, memoranda and EOs. As a Federal agency, the U.S. Army has management responsibilities concerning the protection and preservation of Cultural Resources on land it owns and manages. Pertinent Federal laws and regulations authorizing the Army to undertake these responsibilities include (in chronological order):

- Antiquities Act of 1906 (16 USC 431-433; 43 CFR 3);
- Historic Sites Act of 1935, as amended (16 USC 461-467);
- National Historic Preservation Act (NHPA) of 1966, as amended through 1992 (16 USC 470) and 36 CFR 800, 60, 63, and 78, which includes the Section 106 and 110 processes;
- National Environmental Policy Act (NEPA) of 1969 (40 CFR Parts 1500-1508);
- EO 11593: Protection and Enhancement of the Cultural Environment (1972);
- Archaeological and Historic Preservation Act (AHPA) of 1974 (Public Law [PL] 93-291; 16 USC 469-469c);
- American Indian Religious Freedom Act (AIRFA) of 1978, as amended (42 USC 1996-1996a);
- Archeological Resources Protection Act (ARPA) of 1979 (PL 96-95/16 USC 470aa-470ll; 32 CFR 229, 36 CFR 296, and 43 CFR 7);
- Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 (23 USC 3001-3013; 43 CFR 10);
- Curation of Federally-Owned and -Administered Collections implemented 12 September 1990 (36 CFR 79);
- White House Memorandum of 29 April 1994: Government-to-Government Relations with Native American Tribal Governments;
- EO 13007 Indian Sacred Sites (1996);
- EO 13287 Preserve America (2003);
- Army Regulation (AR) 200-1: Environmental Protection and Enhancement, last modified December 2007;

- Department of Defense Instruction (DoDI) 4715.uu (in DRAFT as of February 2008).

Although state and local Cultural Resource Management laws and regulations do not apply to Federal Army property, consultation with the NJ HPO and ACHP is required by NHPA and is vital in the compliance with all of the related Federal regulations noted above. Full text versions of these Cultural Resource Management statutes, regulations, EOs, and memoranda are in Appendix C.

2.1 ANTIQUITIES ACT OF 1906

The first law to provide protection for archaeological resources, this act authorizes protection of all prehistoric and historic sites on Federal land and prohibits the destruction or excavation of such sites without the permission of the agency with jurisdiction over the site(s). For the full text of the act, see: <http://www.cr.nps.gov/local-law/anti1906.htm>.

2.2 HISTORIC SITES ACT OF 1935, AS AMENDED

The Historic Sites Act declares a national policy to maintain “for public use historic sites, buildings, and objects of national significance” providing a basis for landmarks and preservation spaces (16 USC 461, Section 1). The act bestows a basis for the National Historic Landmarks Program, and documentation of the Historic American Buildings Survey (HABS), Historic American Engineering Record (HAER), Historic American Landscapes Survey (HALS) records kept at the Library of Congress. For the full text of the act, see: http://www.nps.gov/history/local-law/FHPL_HistSites.pdf.

2.3 NATIONAL HISTORIC PRESERVATION ACT (NHPA) OF 1966, AS AMENDED

NHPA, the primary Federal historic preservation statute, establishes Federal policy for the protection and preservation of Historic Properties and values. Section 301 of the NHPA defines a Historic Property as any prehistoric or historic district, site, structure, building, or object in, or eligible for inclusion in, the NRHP, including artifacts, records, and material remains related to the property. The act asserts the NRHP as the country’s catalog of Historic Properties significant on a local, state, or national level, and provides the foundation of the nation’s historic preservation program. Subsequent amendments delegated the State Historic Preservation Officer (SHPO) with the responsibility for administering programs in the states.

For a Historic Property to be considered for eligibility to the NRHP it must be evaluated within its applicable research context and theme, and shown to be significant for one or more of the four Criteria for Evaluation (36 CFR 60) listed below:

- Criterion A- Event- Properties associated with events that have made a significant contribution to the broad patterns of our history; or
- Criterion B- Person- Properties associated with the lives of persons significant in our past;

or

- Criterion C- Design/Construction- Properties embodying the distinctive characteristics of a type, period, or method of construction, or representing the work of a master, possessing high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- Criterion D -Information Potential- Properties that have yielded, or may be likely to yield, information important in prehistory or history.

For a more detailed discussion of these criteria consult various National Park Service (NPS) National Register Bulletins (NRB) 15, 16A, 24, 36, 39, etc. (<http://www.nps.gov/history/nr/publications/bulletins.htm>).

All the criteria should be applied to each Historic Property evaluated at the installation. The information yielded must be evaluated within an appropriate context; and how the potential information will affect the definition of the context. The sources of appropriate historic contexts include the state planning process, but may include other well formed designs to contribute to theoretical or substantive knowledge (Butler 1987). Federal agencies, including the U.S. Army, are required to consider the effects of their undertakings on Historic Properties, and to give the ACHP and the SHPO's a reasonable opportunity to comment on those undertakings. Section 402 of the NHPA describes the Federal agency responsibilities for Historic Properties in other nations and requires the head of the Federal agency to take into account the effect of an undertaking on property which is on the World Heritage List or *on the applicable country's equivalent of the National Register* to avoid or mitigate any adverse effect (NRHP). For the full text of the act, see: <http://www.achp.gov/NHPA.pdf>.

2.3.1 Section 106

Section 106 of the NHPA requires the consideration of effects of activities classified as undertakings on Historic Properties included in, or eligible for inclusion in, the NRHP. The implementing regulation for Section 106 is 36 CFR 800, *Protection of Historic Properties; Final Rule* (revised 64 *Federal Register* [FR] 27044-27084, May 18, 1999, effective June 17, 1999; and 65 FR 77698-77739, December 12, 2000, effective January 11, 2001). These regulations outline a step-by-step process for complying with the law and for identifying and resolving possible conflicts between a proposed action and historic preservation objectives. The regulation also identifies the various participants in the process, including interested and consulting parties. DoDI 4715.uu (DRAFT 2008) outlines procedures for complying with 36 CFR 800. For the full text of the regulations, see: <http://www.achp.gov/regs-rev04.pdf>.

The intent of previous changes to the Section 106 regulation was to streamline the process as well as incorporate recent amendments to the statute. These changes include:

- enhanced authority of the Federal agency to resolve conflicts directly with SHPO without ACHP involvement;
- re-definition of participants' roles in the Section 106 process. Primary responsibility is

placed on the Federal agency for Section 106 decisions, while advisory roles of the ACHP, SHPO, and the Tribal Historic Preservation Officer (THPO) are more clearly defined. In addition, the roles of “consulting parties” are also clarified;

- early initiation and integration of the Section 106 review with reviews required under NEPA and other laws is encouraged. Further, preparation of NEPA compliance documents (e.g., environmental assessments [EAs] and environmental impact statements [EISs]) can be used to comply with Section 106 as long as the information within the documents also meets the NHPA and the Secretary of Interior’s Standards, if necessary;
- development of alternate procedures for compliance with NHPA is encouraged;
- clarification and simplification of public participation in the process;
- allowance of anyone at any point to request the ACHP’s opinion regarding the agency’s findings and decisions under Section 106. The agency is not obligated to delay its actions pending ACHP review.

2.3.2 *Section 110*

Section 110 of the NHPA describes agency responsibilities regarding Historic Properties owned or controlled by the agency and requires the integration of preservation considerations into agency programs. DoDI 4715.uu (DRAFT 2008) and this document help satisfy this requirement. This section specifies agencies must designate historic preservation officers, and identify, evaluate and nominate eligible properties for listing to the NRHP, although no compliance deadline has been established for the requirement.

The implementing guidance for Section 110 is 53 FR 4727-46. These guidelines, prepared by *the Secretary of the Interior* in consultation with the ACHP, details procedures for establishing, monitoring, reviewing and evaluating programs established by Federal agencies. This section requires agencies to identify, evaluate, register and protect properties of “historic, archeological, architectural, engineering, or cultural significance”. The intent of the step-by-step *Section 110 Guidelines* is the integration of historic preservation responsibilities into Federal agency programs and plans. For the full text of the regulations, see: http://www.nps.gov/history/hps/fapa_110.htm.

2.3.3 *Public Involvement*

The goal of public involvement within the NHPA is to provide the adequate opportunity for members of the community to learn about, and provide comment on, Cultural Resource activities and policies conducted under the jurisdiction of the Federal agency. Due to the installation and region’s rich cultural heritage, Picatinny Arsenal, as a whole, needs to heighten military and public awareness of historic preservation, cultural resources, and their overall management as a cooperative goal. Coordination with the Public Affairs Officer (PAO) can assist with the dissemination of such information, help in locating historic information concerning specific sites or activities, and may assist in developing interpretive programs.

Based on 36 CFR 800 as well as ACHP guidance the specific foundation of public involvement is (emphasis added; 2002; <http://www.achp.gov/pubs-citizensguide.html>):

- the views of the public are essential to informed Federal decision making in the Section 106 process. The agency official shall seek and consider the views of the public in a manner reflecting the nature and complexity of the undertaking and its effects on Historic Properties, the likely interest of the public in the effects on Historic Properties... (800.2(d)(1));
- the agency official must, except where appropriate to protect confidentiality concerns of affected parties, provide the public with information about an undertaking and its effects on Historic Properties and seek public comment and input (800.2(d)(2));
- the agency official may use the agency's procedures for public involvement under the National Environmental Policy Act or other program requirements in lieu of public involvement requirements in subpart B of this part, if they provide adequate opportunities for public involvement consistent with this subpart (800.2(d)(3)).

The ACHP recommends this process proceed through chronological steps beginning with determining the extent of required public participation. No specific arrangements need be made if prior programmatic coordination has shown there are no public concerns or if the effect on Historic Properties is minor. In other cases, such as those affecting prehistoric sites or structures on the fringe of the installation, direct public participation may be necessary. Additionally, public involvement plans should incorporate the requirements of all applicable laws such as NEPA. Continuing this process, the CRM must identify potential participants including municipal and county officials, local historical societies or neighborhood groups, or Indian tribes if prehistoric resources are involved. The NJ HPO can also assist the Army in identifying potential participants.

Once the potential participants have been identified, the CRM should seek information from parties with concerns. Local historical societies, for example, can be contacted regarding information on the developmental impacts and early history of the installation, on specific structures, or on the area in general. These parties should then be involved in the review process. This entails coordinating identification and evaluation, effect determinations, and particularly adverse effects where interested persons can participate in consultation regarding ways to avoid or reduce effects. The basis for involving the public in effect issues is found in 36 CFR 800.6(a)(4):

The agency official shall make information available to the public, including the documentation specified in 800.11(e), subject to the confidentiality provisions of 800.11(c). The agency official shall provide an opportunity for members of the public to express their views on resolving adverse effects of the undertaking. The agency official should use appropriate mechanisms, taking into account the magnitude of the undertaking and the nature of its effects upon, the likely effects and the relationship of the Federal involvement to the undertaking to ensure the public's views are considered in the consultation of Historic Properties. The agency official should also consider the extent of notice and information concerning historic preservation issues afforded the public at earlier steps in the Section 106 process to determine the appropriate level of public involvement when resolving adverse effects so the standards of 800.2(d) are met.

Lastly, the ACHP recommends the Army report the conclusions of Section 106 review to

interested persons. Documentation of the public participation process is important particularly if litigation were to occur. The documentation should include the steps taken to involve the public along with summaries of meetings or correspondence. Note this documentation is not required in cases where no Historic Properties are identified or if the undertaking will have no effect or impact.

In summary, the general steps undertaken within the public participation process are:

- Determine the Extent of Public Participation Needed;
- Identify Potential Participants;
- Seek Information;
- Coordinate with Interested Parties; and
- Document the Public Participation Efforts.

2.4 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) OF 1969, AS AMENDED

NEPA mandates Federal agencies prepare a record of environmental consent (REC); Categorical Exclusion, an EA, or an EIS for every major action affecting the quality of the environment, including cultural and natural resources, as well as any effects on Native American groups or other social and ethnic communities to whom cultural resources may be important. The NEPA decision-making process "provides for a systematic consideration of alternatives and an examination of the direct, indirect, and cumulative environmental impacts associated with implementation of a proposed action" (AR 200-1). The act also provides for public participation in the process. NEPA is implemented by 40 CFR Parts 1500 through 1508. For the full text of the act, see: <http://www.epa.gov/compliance/nepa/index.html>.

2.5 EXECUTIVE ORDER (EO) 11593

Issued on May 13, 1971, EO 11593 (Protection and Enhancement of the Cultural Environment) requires installations to locate, inventory, preserve and maintain, and nominate all sites, buildings, districts, and objects under their jurisdiction or control that appear to be eligible for listing in the NRHP. EO 11593 also requires installations to initiate measures and procedures to provide for maintenance, rehabilitation, or restoration of Historic Properties using professional standards prescribed by the Secretary of the Interior. Much of this EO has been incorporated in the NHPA during subsequent amendments. For the full text of the EO, see: <http://www.archives.gov/federal-register/codification/executive-order/11593.html>.

2.6 ARCHAEOLOGICAL AND HISTORIC PRESERVATION ACT (AHPA) OF 1974

AHPA amended the Reservoir Salvage Act (PL 86-523) and applies to all Federal construction or Federally assisted activities. Whenever an agency receives information that a direct or Federally-assisted activity could cause harm to prehistoric or historic period archaeological data, the act allows the use of Federal funds to pay for work to salvage the data, including the survey, recovery, preservation and protection of archaeological, prehistoric, historic

and scientific data. For the full text of the act, see: http://www.nps.gov/history/local-law/FHPL_ArchHistPres.pdf.

2.7 AMERICAN INDIAN RELIGIOUS FREEDOM ACT (AIRFA) OF 1978

AIRFA (PL 95-341) establishes as Federal policy the protection and preservation of the rights of Native Americans, Eskimos, Aleuts, and Native Hawaiians to religious expression and freedom, including access to sacred sites and those of religious importance. The act mandates Federal agencies to evaluate their policies and procedures in consultation with these groups, to foster the protection and preservation of their cultural and religious practices. For the full text of the act, see: http://www.nps.gov/history/local-law/FHPL_IndianRelFreAct.pdf.

2.8 ARCHEOLOGICAL RESOURCES PROTECTION ACT (ARPA) OF 1979

Supplementing and partially superseding the provisions of the Antiquities Act of 1906, ARPA (PL 96-96) prohibits the excavation or removal of any archaeological resources from Federal or Native American lands without a permit. The land manager within the real estate office of the respective U.S. Army Corps of Engineers (USACE) district typically is responsible for issuing such permits. In the case of Picatinny, the New York District of the USACE real estate office has permit-issuing responsibilities. Violations of the Act include stiff financial penalties and jail. For the full text of the act, see: http://www.nps.gov/history/local-law/FHPL_ArchRsresProt.pdf; http://www.access.gpo.gov/nara/cfr/waisidx_99/32cfr229_99.html.

2.9 NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT (NAGPRA) OF 1990

NAGPRA (PL 101-601) requires all Federal agencies to inventory human remains, funerary objects, and cultural items in their possession and to repatriate these materials, on request, to the culturally affiliated Native American tribe. NAGPRA also makes illegal the sale and traffic in Native American human remains. Further, the act requires agency consultation with appropriate Native groups prior to excavation of funerary and sacred objects, items of cultural patrimony, and human remains. For the full text of the act, see: http://www.nps.gov/history/local-law/FHPL_NAGPRA.pdf.

2.10 CURATION OF FEDERALLY OWNED AND ADMINISTERED COLLECTIONS

These regulations (36 CFR 79) detail the maintenance and management requirements of archaeological collections and associated records. 36 CFR 79 defines an archaeological collection as material remains excavated or removed during a survey, excavation, or other study of a prehistoric or historic resource and associated records prepared or assembled in connection with the survey, excavation, or other study. This regulation stipulates items should be handled, stored, cleaned, and conserved (and if exhibited, protected and preserved) in an appropriate manner. Data associated with the collection (field notes, artifact lists, site forms, photographs, slides, computer disks, and a copy of the final report) also should be curated in an appropriate manner. For the full

text of the regulation, see: <http://www.nps.gov/archeology/tools/36cfr79.htm#794>.

2.11 GOVERNMENT-TO-GOVERNMENT RELATIONS WITH NATIVE AMERICAN TRIBAL GOVERNMENTS (WHITE HOUSE MEMORANDUM OF 29 APRIL 1994)

This memorandum concerns relations between the United States and Federally recognized Native American Tribal governments and reiterates the relationship is one of "government-to-government." The relationship applies to interactions between the installation and Federally recognized tribes, and should be carried out between the installation commander and the respective head of the tribal government. For the full text of the memorandum, see: http://www.usdoj.gov/archive/otj/Presidential_Statements/presdoc1.htm or EO 13175 at <http://ceq.eh.doe.gov/nepa/regs/eos/eo13175.html>.

2.12 EXECUTIVE ORDER (EO) 13007

EO 13007, 'Indian Sacred Sites', stipulates the installation, "to the extent practicable, permitted by law and not clearly inconsistent with essential agency functions, must provide access and ceremonial use of Native Americans sacred sites, avoid adversely impacting those sites, and maintain confidentiality of sacred site locations" (Dept. of the Army Pamphlet 200-4 1998:10-11). The EO mandates sacred sites on Federal land be protected and preserved, and requires procedures for consultation with appropriate Native American tribes and religious leaders be developed. For the full text of the EO, see: http://www.fs.fed.us/spf/tribalrelations/Policy/EO13007_5_24_96.pdf.

2.13 EXECUTIVE ORDER (EO) 13287

EO 13287, 'Preserve America', addresses the condition and state of Federal Historic Properties and their overall contribution to local economic development. The EO reaffirms the government's responsibility to show leadership in preserving heritage by "actively advancing the protection, enhancement, and contemporary use of historic properties...and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties." The EO is part of a broader Administration initiative, "Preserve America," to promote the preservation and productive use of the nation's heritage assets (ACHP 2007; <http://www.achp.gov/pubs-eoreport.html>).

2.14 ARMY REGULATION (AR) 200-1: "Environmental Protection and Enhancement"

AR 200-1, 27 December 2007, specifies the Army's policies, procedures, and responsibilities for meeting the compliance requirements of NHPA, AIRFA, ARPA and AHPA, NAGPRA, EO 13007 and 13175 and their implementing regulations. These requirements are briefly summarized in Chapter 6 of the regulation, while DoDI 4715.uu (DRAFT 2008) provides guidance for implementing its requirements. These policies and procedures are prescribed to ensure the management of cultural resources does not interrupt or slow the military mission. AR 200-1 mandates the preparation of this ICRMP, which must be maintained on a regular basis and

reviewed annually by the CRM and updated as the installation's mission or environmental changes warrant. The ICRMP is a five-year (5) plan for meeting historic preservation compliance and Cultural Resource Management requirements and includes a strategy for incorporating the protection and supervision of these resources within ongoing mission activities and land use decisions.

The regulation stipulates a process must be established that “effects early coordination between the CRM and all staff elements, tenants, proponents of projects and actions, and other affected stakeholders to allow for proper identification, planning, and programming for Cultural Resource requirements (AR 200-1 2007: 29). For the full text of the AR 200-1, see: <http://aec.army.mil/usaec/cultural/laws.html>. Also see, <http://aec.army.mil/usaec/cultural/aap.html>.

2.15 DEPARTMENT OF DEFENSE INSTRUCTION (DoDI) 4715.uu (DRAFT)

DoDI 4715.uu (in DRAFT as of February 2008) establishes policy to “manage and maintain cultural resources under DoD control through a comprehensive program that considers the preservation of historic, archaeological, architectural, and cultural values; is mission supporting; and results in sound and responsible stewardship” (2). This policy also ensures the ICRMP is fully coordinated with other installation management plans and master plans including the training and test range management plan, integrated pest management plan, grounds maintenance plan, facilities construction site approvals, and other various land use activity plans. Lastly, the policy requires each DoD installation use an approach including an assessment of the military mission; preparation of detailed inventories of Cultural Resources; analysis and assessment of risk to the Cultural Resources as needed for each project; preparation and implementation of management plans; monitoring and assessment of results; completion of needs assessment survey; maintain currency of Cultural Resources; and adjustments to the overall program as necessary and needed (7-8).

2.16 OTHER ENCOMPASSING REGULATIONS

2.16.1 *Americans with Disabilities Act (ADA) of 1990 and Public Law (PL) 90-480*

These laws have applicability for Historic Properties management especially in regards to providing access to historic structures, while preserving and protecting the character-defining qualities of the structures themselves. Most historic structures were not constructed to be readily accessible by persons in wheelchairs or with other special needs. The ADA establishes a national mandate prohibiting discrimination against individuals with disabilities. Moreover, the act sets standards to address discrimination and ensures a central role for the Federal government in enforcing these standards. While some state and Federal laws now require buildings to be accessible, the most comprehensive document is the ADA, which established access as a civil right. The threshold at which requirements for accessibility must be met may vary by code and by the scope of a project being undertaken. Additionally setting standards for physical access within PL 90-480 requires newly constructed structures to be accessible by individuals with disabilities. For additional information on the ADA and guidelines for implementing it, see:

<http://www.usdoj.gov/crt/ada/adahom1.htm>.

DA Regulations “requires that both buildings and sites of public accommodations be evaluated to determine if accessibility barriers exist. The evaluation will consider an array of features including building and site entrances, surface textures, widths and slopes of walkways, parking, grade changes, weight, size and configuration of doorways, interior corridors and path of travel restrictions, elevators, and public toilets and amenities. This evaluation is often done as part of a complete accessibility survey of the building. Required improvements are detailed in local, state or Federal regulations, and most comprehensively in the Americans with Disability Act Accessibility Guidelines (ADAAG). Other accessibility regulations can be found in the Architectural Barriers Act of 1968 and Section 504 of the Rehabilitation Act of 1973 (<http://www.makoa.org/gov/g15.htm>).

2.16.2 *New Jersey Freshwater Wetlands Protection Act (Statutes Annotated 13:9B)*

The State of New Jersey protects wetlands under the Freshwater Wetlands Protection Act, New Jersey Statutes Annotated (NJSA) 13:9B. One of the natural constraints to land use planning and site development are the locations of wetlands, their transitional zones (“buffers”), and associated endangered species habitat. Within the State Department of Environmental Protection (NJ DEP), Land Use Regulation Program, the NJ HPO can also provide advice and comment for wetland areas in relation to an archaeological review where a site is likely to have archaeological resources. This review process falls under NHPA, Section 106 and may also require an archaeological survey, if warranted.

NJSA 13:9B defines a freshwater wetland as an:

area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as hydrophytic vegetation; provided, however, that the department, in designating a wetland, shall use the three-parameter approach (i.e. hydrology, soils and vegetation) enumerated in the April 1, 1987 interim-final draft "Wetland Identification And Delineation Manual" developed by the United States Environmental Protection Agency.

Using National Wetland Inventory mapping, as well as various planning level surveys, including a comprehensive USACE Waterway Experiment Station (WES) study conducted in 1994, it is estimated 1,250 acres of wetlands exist across the installation. Because wetland size and location has been estimated by National Wetland Inventory mapping, site-specific jurisdictional delineations are needed to assess the actual extent of wetlands. Wetlands at Picatinny are primarily composed of muck and peat formed in poorly drained glacial soils (Appendix H). These areas include freshwater marshes (defined as wetland systems dominated by herbaceous cover) and freshwater swamps (defined as wetlands with a prominent over-story). Most of the wet areas are located in the Green Pond Brook flood plain at the southern end of the installation. Overall, this area has been highly disturbed in the past and the southernmost 5,000 ft of Green Pond Brook runs through floodplain wetlands have been drained by a series of

constructed drainage ditches. These areas also contain a network of upland areas created from fill material provided sites for buildings, railroad beds, roadways, parking areas, and work areas. A second major flood plain wetland is located in the vicinity of Burnt Meadow Brook north of Lake Denmark. Other smaller wet areas occur as narrow fringes along lakes, streams, and seepages. Outside of isolated project sites, the wetlands have not been delineated jurisdictionally. Depending on the circumstances, construction or other disturbance within the transitional buffer can require NJDEP wetland permitting, a mitigation plan, stream encroachment permitting, NJ HPO consultation, archaeological review and/or survey, and/or U.S. Fish and Wildlife Service consultation. For further information, see <http://www.state.nj.us/dep/landuse/index.html>; http://www.state.nj.us/dep/landuse/13_9b.pdf; and <http://www.state.nj.us/dep/rules/notices/090407a.html>.

3.0 Management Objectives

The basic objectives of this ICRMP are to integrate the legal requirement for historic preservation with the planning, construction, and other mission-essential activities, as well as Real Property (RP) and land use decisions at Picatinny. Specifically, these objectives are:

- *Compliance with Federal Preservation Laws*- the installation complies with all laws and regulations pertaining to the identification, management, and preservation of Cultural Resources (Section 2);
- *Locate, Evaluate, and Protect Archaeological, Historical, and Sacred Sites*- CRM must identify and protect all classes of Cultural Resources on the installation, in order to comply with those laws and regulations noted in Section 2. The CRM must first determine if the proposed action is an undertaking and then determine the Area of Potential Effect (APE). *APE* means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of Historic Properties, if any such properties exist. The CRM must then apply the criteria of effect to determine whether the undertaking(s) will adversely affect Cultural Resources (Historic Properties). *Historic Properties and Cultural Resources* are any prehistoric or historic district, archaeological site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term also includes artifacts, records, and remains related to and located within such properties (as defined by AR).
- The CRM must consult in a timely manner with the NJ HPO concerning all undertakings having the potential to adversely affect Historic Properties;
- *Contribute to the Body of Knowledge*- valuable contributions to the regional Cultural Resources database can be achieved through the analysis and synthesis of data collected at the installation. The dissemination of information on areas that have previously not been included in the regional contexts adds to the richness and viability of data;
- *Efficient Management Techniques*- conserve funds through the employment of more efficient management techniques and the initiation of mission-oriented evaluation procedures for archaeological sites, Cultural Resources and other Historic Properties. The practicalities of accomplishing this will require the CRM to be creative in the use of funds and time.

3.1 UNDERTAKINGS AND ACTIVITIES

Undertakings are a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a Federal agency.

Examples of undertakings include:

- construction, demolition, rehabilitation and/or renovation of buildings (Individual Job Orders [IJO]). Additionally, general maintenance and recurring upgrades performed on buildings are evaluated on a case-by-case basis through the inspection of Service Work Orders by the CRM. These general maintenance activities are usually not part of the installation Master Plan and/or Annual Work Plan and include, for example, routine (minor) exterior maintenance, emergency roof repairs, caulking, minimally destructive electrical and plumbing work, water line break/leak repair, interior painting, etc. Unless these activities are performed on NRHP-eligible structures (Appendices F and G) and they are significantly destructive (e.g., removal or replacement of a wall or window), they usually will not require much further internal review;
- construction of any kind involving ground disturbance, including new facilities, additions, staging/storage areas, new roads, parking areas, etc.;
- utility systems installation, repair, or upgrade including construction work to potable water, waste water and sanitary sewer, electrical, steam, gas, air conditioning, fire prevention, telecommunication, fuel, and high pressure air;
- landscaping, including routine maintenance and upkeep, grading, clearing, and long-term alterations;
- hazardous material cleanup/remediation, including UXO surveys, installation of ground monitoring wells, and contaminated soil removal;
- wetlands mitigation for new wetland areas replacing impacted ones;
- forestry activities, including timber harvesting, uprooting and grubbing, and the construction of access roads;
- property leases, transfers, and exchanges;
- military training, including research and development, testing, detonation and blasting, bunker excavation, etc.;
- any other construction/work projects involving ground disturbances or building improvements not mentioned above.

If a specific project type is not listed here, consultation with the CRM must occur to determine the potential for effects on Cultural Resources.

3.2 INTERNAL COORDINATION ROLES AND RESPONSIBILITIES

3.2.1 *Installation Mission*

In general, there are four broad missions executed at Picatinny:

1. *Life-cycle Acquisition Management*- performed by PEOs, PMs and product managers. These mission organizations are mainly administrative and research oriented, and a source of funding for ARDEC.
2. *Armament Research, Development and Engineering, performed by ARDEC*- ARDEC, under the RDECOM, is the Army's principal researcher, developer, and sustainer of current and future armament and munitions systems. In this role, ARDEC is

responsible for executing programs that are in one of the following phases of the acquisition process- basic research, applied research, concept demonstration, development, production, and deployment.

Additionally within the ARDEC structure, the installation has implemented a novel base optimization strategy using a New Jersey-based 501(c)(3) non-profit corporation, InSitech Inc., to facilitate the more effective and efficient use of its assets. InSitech is working with private industry, academia, and other government agencies to leverage resources as a means to accelerate the development of critical technologies for Picatinny's mission capabilities (<http://www.insitech.org/index.htm>). Part of this overarching strategy with InSitech has led to the execution of an enhanced use lease (EUL) program at the installation. Within this EUL program Picatinny can, among other things, enter into long-term leases, providing greater flexibility for facility use and reuse; and receive cash or in-kind consideration for income on leased property, which can be used for alteration, repair, improvement of property or facilities; construction or acquisition of new facilities; lease of facilities; or facilities operation support. Overall, the EUL enhances mission performance through cooperative efforts with private developers.

By far, ARDEC is the largest organization assigned to the installation and it also is the largest user of facilities, accounting for the use of approximately 1.75 million square feet of buildings.

3. *Base Operations and Garrison Community Support*- performed by IMCOM through the US Army Garrison at Picatinny. The Garrison is organized into directorates which are responsible for providing base operations and community support along functional lines, such as public works (DPW); logistics; information management; emergency services; safety; morale, welfare and recreation; and plans, training, mobilization and security. The Environmental Affairs Division (EAD) resides within the DPW. Additionally, under the Residential Communities Initiative (RCI), Picatinny's family housing estate is operated and maintained by a contractor, Balfour Beatty Communities.
4. *Other various military tenant missions*- some of the other tenant missions at the installation include Defense Contract Management Agency; Company G, 2nd Battalion, 25th Marine Regiment responsible for providing trained and qualified soldiers to augment, reinforce, or reconstitute the active component of the Marine Corps in time of war or national emergency; and Field Maintenance Shop 7, a New Jersey Army National Guard unit responsible for repair and maintenance of heavy-duty mobile equipment, and combat, tactical and automotive vehicles.

Additionally, Picatinny will be receiving Navy tenants in certain areas of the installation as part of receiving Base Realignment and Closure (BRAC) efforts starting in 2011 (all see Section 5.5.2).

Coordination with DPW is essential during the review of any ground-disturbing action or building modification activities in regards to the mission operations of these military

organizations. This organization acts as a conduit for all activities and/or actions that may require NHPA Section 106 compliance.

3.2.2 *Installation Responsibilities*

AR 200-1 and DoDI 4715.uu (DRAFT 2008) establish the requirements installations should follow pertaining to Cultural Resource Management and preservation of Historic Properties. Within AR 200-1, the GC is responsible to:

- ensure base support activities support military training and readiness operations and are conducted in a manner advantageous to environmental stewardship;
- ensure environmental requirements impacting ranges, training lands, and other installation activities are identified and incorporated into management plans and SOPs;
- assess the long-term resource impacts of all environmental agreements and management plans;
- serve as the Federal Agency Official with responsibility for compliance with NAGPRA;
- establish a government-to-government relationship with Federally recognized Indian tribes and Native Alaskans;
- Federal Agency Official with responsibility for installation compliance with NHPA;
- Federal land manager with responsibility for installation compliance with ARPA;
- Federal Agency Official with management authority over archeological collections and associated records;
- maintain a public affairs program encouraging public involvement;

Additionally, the installation is required to:

- develop this ICRMP as a planning tool, while also maintaining other similar agreements as needed (ie. NHPA programmatic agreements and memorandums of agreement [MOAs], Historic Property Component [HPC] plans, and other compliance agreements);
- appoint a CRM, along with the establishment of a program, to include the identification, evaluation, and treatment of Historic Properties in consultation with the ACHP, SHPO, local governments, Federally recognized Indian Tribes, Native Hawaiian organizations, and the public;
- establish a process allows early coordination between the CRM and all staff elements, tenants, proponents of projects and actions, and other affected stakeholders to allow for proper identification, planning, and programming for Cultural Resource requirements;
- document all Historic Properties that will be substantially altered or destroyed as a result of Army actions;
- maintain current listings of all Historic Properties, and where applicable, maintain historic status in conjunction with RP inventory and reporting guidelines;
- consider alternatives for Historic Properties, including adaptive reuse, not needed for current or projected installation mission requirements;
- nominate to the NRHP only those properties the Army plans to transfer out of Federal management through privatization efforts. Nominate other properties only when justified by exceptional circumstances. Avoid adversely affecting properties 45 to 50-

years old or older that have not been evaluated for eligibility against NHPA criteria. Assume all historic sites are eligible until the SHPO concurs with the federal finding of non-eligible;

- prohibit searching for or collection of Historic Properties (including archaeological resources) on Army installations except when authorized by the GC and pursuant to a permit issued under ARPA;
- minimize the amount of archeological material remains permanently curated by reserving such treatment for diagnostic artifacts and other significant and environmentally sensitive material add important information to site interpretation (AR 200-1, Chapter 6: 28-30).

Furthermore, policy within DoDI 4715.uu (DRAFT 2008) requires the installations' to:

- manage and maintain Cultural Resources through a comprehensive program that considers the preservation of historic, archaeological, architectural, and cultural values; is mission supporting; and results in sound and responsible stewardship;
- ensure readiness, sustainability, and cost-effectiveness policies and the military mission are facilitated through the maximum continued and adaptive use of Cultural Resources;
- maintain a program to preserve the fabric, systems, and historic character and function of real property assets in a sustainable manner supporting the military mission and promotes the quality of life and work of the occupants and employees;
- promote partnerships with communities to increase opportunities for public benefit from, and access to, DoD Cultural Resources, taking into account mission activities, sustainability, safety and security issues, and fiscal soundness;
- adopt innovative approaches to allow access to information as a means to create heritage tourism opportunities and public outreach (2-3).

The CRM's responsibilities defined within DoDI 4715.uu (DRAFT 2008) are to:

- ensure compliance with the instruction itself, including compliance by tenant activities;
- develop and implement programs to monitor, achieve, and maintain compliance with applicable Federal statutory requirements;
- develop and implement a process to fully integrate Cultural Resources planning processes with broader planning activities;
- integrate Cultural Resources Management with other facilities management systems and processes so as to provide the greatest overall program effectiveness and business efficiency;
- maintain current information on known Cultural Resources along with the establishment of a systematic process to identify and evaluate these resources, including the use of archeological models;
- prepare Cultural Resource correspondence for submittal to EAD for review/approval before submittal to outside agencies, including serving as the point-of-contact for the NJ HPO and the ACHP;
- provide regulatory advice for Cultural Resources and track and review new Federal, Army, state, and local environmental regulatory developments and requirements for

- applicability, including if necessary outlining compliance alternatives and options for these regulatory requirements;
- review all projects (ie. Military Construction, US Army [MCA] projects and plans, job order contracts and requests through Service Orders and IJOs, annual work plans, research and development testing and/or training exercises, demolition plans, etc.), DA 1391 (Military Construction Project Data) forms and determine the type and level of impacts to Cultural Resources. Determines the applicable laws and regulations and identifies the applicable SOP from those contained within this document. Determines other applicable consultation or regulatory requirements (ie. monitoring), or if the undertaking is considered under a programmatic agreement developed for NHPA compliance. Attends appropriate project meetings;
 - assist the GC, DPW, EAD developing funding priorities for all Cultural Resources program and compliance activities. Provide and implement approved funded mitigation plans to address negative impacts;

Finally, the installation must ensure all hard copy and electronic documents, reports, and maps are prepared pursuant to this ICRMP do not contain locational or otherwise sensitive data if they are to be released to the public. In accordance with AR, ARPA and NAGPRA, all hard copy and electronic records contain information regarding the location or character of archeological sites and related resources at all installations shall not be released to the public if disclosure of such information could entail a considerable risk of harm, theft, or destruction to the resources or to the area where the resources are located. Therefore, all maps within this ICRMP are sensitive information and are not to be released to the public without further knowledge to the installation.

Overall, coordination and consultations impacting the overall Picatinny missions must be identified as a priority and addressed early to avoid impacts to readiness. Coordination with the DPW and EAD is essential by all installation organizations during the review of any ground-disturbing action or building modification activities. This organization acts as a conduit for all activities and/or actions may require NHPA Section 106 compliance. Roles and responsibilities of the Cultural Resource Management program at Army installations are discussed further within AR 200-1 and DoDI 4715.uu (DRAFT 2008).

3.3 ARMY GOALS FOR CULTURAL RESOURCE MANAGEMENT

The Army's vision statement for their Historic Preservation Program is to "be a national leader in historic preservation through stewardship of our most significant_Historic Properties and protection of the Nation's heritage" (Department of the Army 2003; <http://aec.army.mil/usaec/cultural/camplan.pdf>). This program and its Campaign Plan is managed by the Assistant Secretary of the Army for Installations & Environment (ASA (I&E)) and "focuses on both present and future Army NHPA requirements, operational integration, balanced stewardship, and cost-effective management" (Department of the Army 2003).

The Office of the Assistant Chief of Staff for Installation Management (ACSIM) is the Army staff proponent for the tracking of the Cultural Resource Management Program Directive. To effectively manage Cultural Resources, this management is split into four (4)

lines of business: archaeological site protection, historic building preservation, Native American affairs, and integrated cultural resources planning. ACSIM, along with the Army Environmental Command (AEC) and IMCOM, manage the Army's mission goals, and the overall assessment of the installations' Historic Properties and Cultural Resources. To note, Picatinny is within the Northeast region of the IMCOM Garrison reporting system. Metrics of Historic Properties and Cultural Resource Management requirements are tracked at a higher-headquarters level through various database outlets within the Environmental Compliance Assessment System (ECAS). These include:

- Environmental Quality Report Data Calls (performed annually in September prior to the end of the October Fiscal Year [FY]);
- RP tracking through the Integrated Facilities System (IFS) and the Installation Status Report (ISR);
- external audits by the Army Environmental Performance Assessment System (EPAS);
- networks within Army Knowledge Online (AKO) and Defense Environmental Network & Information eXchange (DENIX); and
- Performance Work Statements (defining the proper Cultural Resource Management principles within Army standards)

These programming and reporting mechanisms are used for upward tracking of resource requirements and help manage the status of various aspects of Cultural Resource Management for the Base Operations Common Levels of Support (CLS). The outcomes and results of these reporting systems are documented with adjustments annually for continual improvement at both the installation and DA levels.

3.3.1 *Real Property (RP) Assets*

RP on Army lands

consists of lands [including testing and training acreages] and improvements to land, buildings, and structures, including improvements and additions, and utilities...includ[ing] equipment affixed and built into the facility as an integral part of the facility (such as heating systems), but not movable equipment (such as plant equipment). In many instances, this term is synonymous with 'real estate' (ACSIM 2007).

Also, included within this definition are bridges, dams, signage, monuments and memorials, cemeteries, flagpoles, industrial waste treatment areas and septic tank drain fields, sewage lift stations, playgrounds and court areas, antennas, etc.

ACSIM and their Chief Financial Officers inventory work orders (Service Orders and IJOs) for RP at the installation level through the management of the IFS and the ISR. (To note, the Garrison work order process is managed through a server database called MAXIMO operated by the installation's Base Operations contractor Chugach Industries, Inc. This database is linked with the IFS and allows for the dissemination of work order information to be gathered easily across the installation.)

According to the IFS and ISR's encompassing RP regulations, it is an annual requirement for installations to assess the condition of their infrastructure using Army-wide inspection standards (ACSIM 2007; <http://www.hqda.army.mil/acsimweb/RealPropertyHomepage.htm>). This annual evaluation contributes to defining the overall infrastructure readiness and calculates estimated restoration costs to improve the quality of facilities. Overall, this evaluation and the RP inventory itself are a detailed record that serves as the "basic source of information for the category, status, cost, area, capacity, condition, use, construction material, and capital improvements for each item of RP as defined by category code in Dept. of the Army Pamphlet 415-28" (ACSIM 2007). Furthermore within these systems, the installations' also categorize by code the RP Asset's historic status as appropriate:

- Individual National Historic Landmark (NHLI);
- Individual National Register Listed (NRLI);
- Individual National Register Eligible (NREI);
- Non-Contributing Element of NHL, NRL, NRE District (NCE);
- Determined Not Eligible (DNE);
- Not yet Evaluated (NEV);
- NHLI, NHLC, NREI, or NREC National Register Property- Designation rescinded (DNR);
- Contributing Element of a NHL District (NHLC);
- Contributing Element of a NRL District (NRLC);
- Contributing Element of a NRE District (NREC); and
- Eligible for the purposes of a Program Alternative (ELPA).

As a result, Picatinny's RP is categorized as such within Appendix F.

To note, prior building list for the previous ICRMP (2003-2008) was not synchronized with the IFS/ISR systems and therefore was lacking substantial identification and data. Therefore, based on early Arsenal records, DPW RP research, and ongoing NHPA Section 106 assessments and surveys since the early 1980s, the buildings list presented within Appendix F has been reorganized into an Historic Building Assessment Catalog listing *all* of the existing buildings, associated RP assets- consisting of utilities (above and below ground), court areas and other related visual and reportable features (sewage areas, land, etc.), and known demolished RP with documentation and/or interview confirmation (Arsenal Facilities and Equipment Division 1968). This reorganization also occurred due to the installation's unique history in relation to its military industrial areas and past operations that have ultimately led to contamination throughout many buildings resulting in abandoned, vacant, and closed areas and a placement on the National Priority Listing for Federal Facilities. Overall, by reorganizing and redeveloping this list, a more historical evolutionary and developmental picture is now possible for each industrial area than presented in prior ICRMPs and Cultural Resource Management reports (Appendix F). Additional regulatory and compliance information can be found in EO 13327, "Federal Real Property Asset Management" (Appendix C).

3.3.2 *Residential Communities Initiative (RCI)*

Picatinny Garrison signed into a programmatic agreement with the NJ HPO and ACHP in 2004 for the Military Housing Privatization Initiative (P.L. 104-106, 110 Stat. 544, Title XXVIII, Subtitle A, Section 2801) privatizing family housing. Therefore, all family housing buildings at Picatinny are no longer the property of the Army, whereas their surrounding land is leased. This initiative is being managed by Balfour Beatty Communities. NHPA compliance of these buildings and all management actions for Balfour Beatty Communities is being performed by John Cullinane Associates (particularly for Buildings 112, 113, 114, 115, and 3250).

3.4 **EXTERNAL COORDINATION**

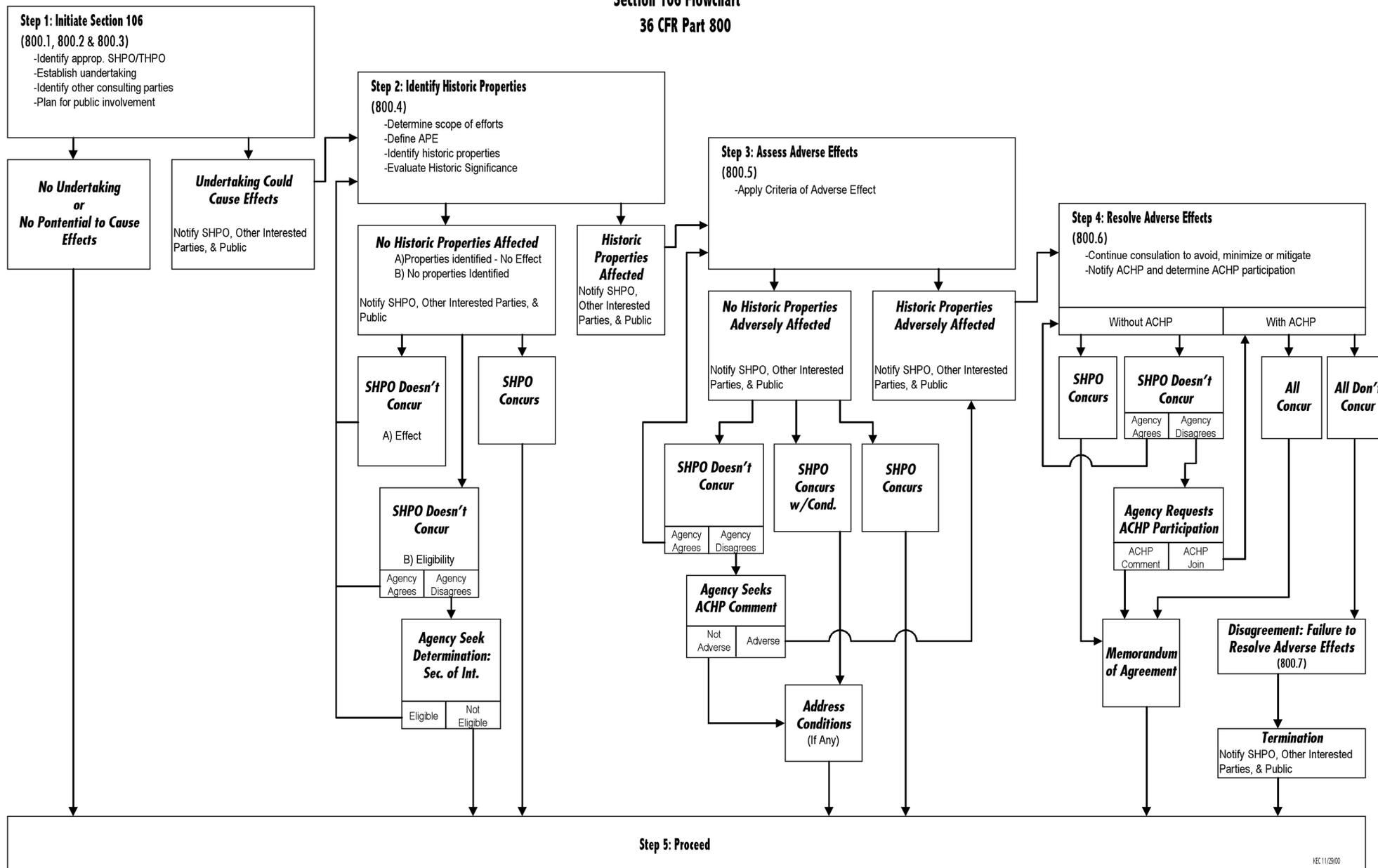
The key to the successful balance of mission requirements and historic preservation compliance and management responsibilities is early planning and coordination to prevent conflicts.

3.4.1 *New Jersey State Historic Preservation Office (NJ HPO) and the Advisory Council on Historic Preservation (ACHP)*

The NJ HPO coordinates state participation in implementation of the NHPA and is a key participant in the Section 106 process. The role of the NJ HPO is to consult and assist the installation when identifying Historic Properties, assessing adverse effects upon them, and considering alternatives to avoid or reduce those effects. The NJ HPO reflects the interests of the citizens of the State in the preservation of their cultural heritage, and helps the installation identify those persons interested in an undertaking and its effects upon Historic Properties. When the NJ HPO does not respond within *30 calendar days*, or declines to participate to a written request for participation, the installation can consult with the ACHP to complete the Section 106 process, if needed.

The ACHP is responsible for commenting to the installation when invited to participate, or when comments are requested on an undertaking which adversely affects Historic Properties. All undertakings falling under Section 106 must be coordinated with the NJ HPO, or have a MOA/Programmatic Agreement in place allowing for agreed-upon procedures in place of formal Section 106 compliance (<http://www.achp.gov/regsflow.html>)

Section 106 Flowchart
36 CFR Part 800



3.4.2 Native American Tribal Consultation

The identification and consideration of Traditional Cultural Properties needs to be included in the Cultural Resource Management process as well as in the development of land use plans. NRB Bulletin 38 defines a traditional cultural property "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" (Parker and King 1995). Typically associated with American Indian land use of a site, Traditional Cultural Properties (and other Native American materials), if impacted by an undertaking, should be addressed early in the planning process in order to assure Federal and Tribal compliance. The NHPA, AR 200-1, DoDI 4715.uu, AIRFA, NAGPRA, ARPA, Presidential Memorandum on Government-to-Government Relations with Native American Tribal Governments, among other Federal statutes define the basis of the Army's compliance responsibilities for management of Native American materials, and other cultural resources and sites. For more information on identifying and evaluating Traditional Cultural Properties, see <http://www.nps.gov/history/nr/publications/bulletins/nrb38/>.

Previous research conducted as part of the *Service-Wide Report on U.S. Army Archaeological Collections: Summary Report on the U.S. Army Environmental Center's Native American Graves Protection and Repatriation Act Compliance Project Section 6 Summary Investigations* (1996) by the U.S. Army Engineer District, St. Louis Mandatory Center of Expertise for the Curation and Management of Archaeological Collections (<http://aec.army.mil/usaec/cultural/section6.doc>) stated the Delaware inhabited the area now included within Picatinny. Therefore in the past, the installation consulted with the Delaware Nation of Oklahoma, Delaware Tribe of Indians of Oklahoma (no longer Federally recognized), and the Stockbridge-Munsee Community of Mohican Indians of Wisconsin. Recently, the CRM revised this consultation list to include other Federally-recognized tribes such as the Absentee-Shawnee Tribe of Oklahoma, Cherokee Nation of New Jersey, and the Shawnee Tribe which may also hold ancestral ties to the New Jersey Highlands.

Additionally according to previous research from the U.S. Department of the Interior, Bureau of Indian Affairs (2000), and recent documentation by the New Jersey Committee on Native American Community Affairs (2007; http://www.state.nj.us/state/diversity/american_indian/images/Native%20American%20Committee%20Report.pdf) three (3) tribes are State-recognized for New Jersey; Nanticoke Lenni-Lenape Indians, Ramapough Mountain Indians, Inc., and Powhatan Renape Nation; however according to Federal policy, State-recognized tribes are not under the jurisdiction of Picatinny which is required to consult with Federally-recognized Tribes only.

3.5 THE CULTURAL LANDSCAPE MANAGEMENT APPROACH

Cultural Resources, and all encompassing Historic Properties, constitute essential and significant elements of ecosystems in which Army installations and their component activities exist and function. Planning and management of Cultural Resources, therefore, should occur within the context of a comprehensive and integrated land, resource, and infrastructure

approach which adapts and applies principles of ecosystem management. This involves planning and management of Cultural Resources by reference to the landscape; therefore the principal components of this approach are as follows:

- defines a “cultural landscape” as a geographic area including the collective cultural and natural resources features and the spatial relationships among those surface and subsurface features. Examples of natural features include terrain, habitat areas, and topography. Cultural features include archaeological sites, sacred sites, historic buildings, and the modern built environment. All of these natural and man-made features, including those related to military operations, are viewed as a series of surface and subsurface features that make up the installation’s cultural landscape;
- focuses on the analysis of the spatial relationships among natural and man-made landscape features. Cultural and natural resources distribution maps can provide the data for systematic analysis of spatial patterning and land use through time. Factors such as elevation, slope, soil texture and drainage, vegetative cover, distance to water and proximity to roads, other transportation routes, and service centers have resulted in non-random patterns of human land use through time. These factors influenced the locations selected for prehistoric and historic settlement and activity areas;
- distribution maps of cultural and natural resources locations, overlain with specific locations of military testing and training areas (including past, present, and to the extent possible, future activities) will show a non-random pattern of distribution across the landscape. Spatial analyses based on such distributions can indicate if the locations of Cultural Resources, natural resources, and military testing and infrastructure improvement activities coincide. The coinciding distribution of cultural and natural resources and specific locations of military activities are important land management factors;
- identification of the non-random patterns of land use is beneficial for compliance-related environmental documentation requiring future impact prediction (e.g., NEPA and NHPA documents). It is beneficial for the preparation of analyses for the consideration of alternatives, and for impact avoidance, in a manner that avoids conflict with sensitive resources. This type of specific spatial information allows predictive scenarios that aid in the management of the resources, and adds timeliness to compliance activities and the completion of mission objectives;
- emphasizes the fact that natural and Cultural Resources may result from and obtain significance through the continuous military occupation and use of the land. The cultural landscape on Picatinny is unique because of its continued use for defense-related purposes and the influences to the landscape resulting from these activities.

The value of the cultural landscape approach to proper evaluation and treatment is that a Cultural Resource’s significance is not determined in isolation, but within the entire context of the landscape and interrelationships among its components. The cultural landscape approach allows greater flexibility in environmental impact analysis and the development of mitigative

strategies in terms of trade-offs which can be negotiated when the linkages between cultural and natural resources are identified. The approach also allows for more informed and defensible decision-making. The cultural landscape approach provides the overall framework for the ICRMP and future implementation of project-specific compliance actions. It is most useful as an overall conservation planning strategy fully integrating cultural and natural resources and the military mission, as well the ICRMP serves as the platform to operationalize the cultural landscape concept.

3.5.1 *Evaluating Cultural Resources (Historic Properties)*

To be placed on the NRHP, a property must be shown to have significance under the NRHP criteria and it must have integrity. “Integrity is the ability of a property to convey its significance” and is determined by looking at the seven elements that create it:

- location of where the Historic Property was constructed or where the historic event occurred;
- design (combination) of elements that create the form, plan, space, structure, and style of the property;
- setting or physical environment of the property; materials or physical elements that were combined or deposited during a particular period of time and in particular period of time and in a particular pattern of configuration;
- workmanship or the physical evidence of the crafts of a particular culture or people during...history or prehistory; feeling or a property’s expression of the aesthetic or historic sense of a particular period of time; and
- association or the direct link between an important past event or person and the property itself.

To retain integrity, a property must possess several of these aspects. Although determining integrity tends to be a subjective judgment, this is tempered by an understanding of the property’s physical features and how they relate to its significance (NRHP Staff 2002: NRB Bulletin 15).

Potentially significant Cultural Resources/Historic Properties, which are at least 50 years of age or older, must possess “the quality of significance in American History, architecture, archaeology, engineering, and culture [that] is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

- A – *Event-* associated with events that have made a significant contribution to the broad patterns of our history, including within the development of the installation itself; or
- B – *Person-* associated with the lives of persons significant in our past. The person(s) associated must be individually significant within a historic and social context of a profession or group; or
- C – *Design/Construction-* embody the distinctive characteristics of type, period, or method of construction, or that represent the work of a master, or possess high artistic value, or that represent a significant and distinguishable entity whose

components lack individual distinction, and/or illustrate a change in preference, attitudes, and uses; or

- D – *Information Potential*- yielded, or may be likely to yield, information important in prehistory or history. For example, this information can produce data that bears on a research design that addresses data gaps and theories that challenges existing premises; or priority areas identified under a State of Federal agency management plan; like this ICRMP (NRHP Staff 2002).

Additionally, in particular to Criterion D, the archaeological site must have the characteristics suggesting the likelihood that it possesses configurations of artifacts, soil strata, structural remains (above and below ground), or other natural or cultural features that: “test a hypothesis or hypotheses about events, groups, or processes in the past that bear on important research questions in the social or natural sciences or the humanities; or corroborate or amplify currently available information suggesting that a hypothesis is either true or false; or reconstruct the sequence of archeological cultures for the purpose of identifying and explaining continuities and discontinuities in the archeological record for a particular area” (NRHP Staff 2002).

Overall the NRHP recognizes five classifications of significant properties: *buildings*, principally a shelter for any form of human activity; *structures*, functional constructions made for purposes other than creating human shelter; *objects*, constructions that are small in scale, relatively simple and primarily artistic; *sites*, location of a significant event where the site itself possesses value regardless of the value of any existing structure; and *districts*, a significant linkage of sites, buildings, structures or objects united historically or aesthetically by a plan or physical development. A district derives its importance from being a unified entity, even though it may include a wide variety of resources. “The identity of a district results from the interrelationship of its resources, which can convey a visual sense of the overall historic environment or an arrangement of historically or functionally related properties” (NRHP Staff 2002). A district must be important for historical, architectural, engineering or cultural values. The individual components of a district may lack significance provided the group as a whole has significance. Most of the components making up a district must add to the district’s character and must possess integrity, as must the district itself.

All of these criteria should be applied to each Cultural Resource evaluated. The information the Cultural Resource yields, or will yield, must be evaluated within an appropriate historic context; and how the potential information will affect the definition of the context. The Cultural Resource (e.g., archaeological site, historic structure, district or landscape) also must retain the historic integrity of those features necessary to convey its significance. The information likely to be recovered from the Cultural Resource must confirm, refute, or supplement, in an important way, existing information. It is not eligible if it cannot be related to a particular time period or cultural group and, thereby, lacks any historic context to evaluate the importance of the information to be collected (NRHP Staff 2002). For a more detailed discussion, see various NRB Bulletins 15, 16A, 24, 36, 39, etc. (<http://www.nps.gov/history/nr/publications/bulletins.html>).

3.5.1.1 *Criteria Consideration G, Exceptional Importance*

Many structures and their industrial complex areas at Picatinny are less than 50 years of age or approaching. Properties generally are required to have attained at least 50 years of age before they are considered for eligibility for listing to the NRHP. Properties achieving significance within the last 50 years, however, may be listed on the NRHP only if they are of “exceptional importance” (NRHP Staff 2002; Sherfy and Luce 1998). Therefore, Criteria Consideration G must be applied to consider properties less than 50 years old. Because the NRHP intentionally left the word “exceptional” without a clear definition, the determination of exceptional importance is open for interpretation.

The Army, in an attempt to assist its GCs and CRMs, has established a set of steps and tests to help assess possible exceptional properties in the Army Cold War guidelines (USACE, Fort Worth 1997). These guidelines are quite rigorous, but must be used without legalistic thinking. As the guidelines point out, “[a] property does not suddenly become historic on its fiftieth [50th] anniversary, having no historical significance the day before. Fifty [50] is not a magic number, but an arbitrary designation” (USACE, Fort Worth 1997: 37).

According to the Army guidelines, the determination of exceptional importance can be made only after a resource has been shown to be important to one or more Army Cold War themes. These themes, in broad terms, are: Balance of Power; Ideological Confrontation; Technological Imperative; and Survival and Preparation for a Hot War. Specific Army themes include: Mission Focus; Survival; Technology; Militarization of Space; Extraordinary Measures; and Secrecy. The more direct the relationship of the property to one of these themes, the more likely it is to meet the exceptional criteria.

3.5.2 *Historic Landscapes*

Historic landscapes must be evaluated within existing historic contexts which are essential for identifying significant properties of a rural area and determining their eligibility. Significance must be evaluated within the framework of a community, region, or state's historic contexts. These historic contexts can provide background information and important historic trends or themes to help determine if the property is unique or representative of its time and place, and assess relative importance (McClelland et al. 1999). The usual types of rural landscapes based on historic occupation or land use are: agriculture (including various types of cropping and grazing); industry (including mining, lumbering, fish-culturing, and milling); maritime activities such as fishing, shellfishing, and shipbuilding; recreation (including hunting or fishing camps); transportation systems; migration trails; conservation (including natural reserves); and sites adapted for ceremonial, religious, or other cultural activities, such as camp meeting grounds (McClelland et al. 1999).

Using the landscape approach to research historic and Cultural Resources provides a framework for understanding the relationships among history, architecture, landscape architecture, planning, and archaeology (Loechl et al. 1996:3). As well, the NRHP defines a designed landscape as any of the following:

- A. A landscape that has significance as a design or work of art;
- B. A landscape consciously designed and laid out by a master gardener, landscape architect, architect, or horticulturalist to a design principle, or an owner or other amateur using a recognized style or tradition in response or reaction to recognized style or tradition;
- C. A landscape having a historical association with a significant person, trend, event, etc., in landscape gardening or landscape architecture; or
- D. A landscape having a significant relationship to the theory or practice of landscape architecture [Keller and Keller 1998:2; <http://www.nps.gov/history/nr/publications/bulletins/nrb18/>].

Many historic landscapes are NRHP eligible based primarily on their design merits; however, a substantial number of others also possess significance in other areas such as social history (Keller and Keller 1998:2). The specific features that a designed historic landscape must retain to have integrity differ for various landscape types. Such features may include, but are not limited to: spatial relationships, vegetation, original property boundary, topography/grading, site furnishing, design intent, architectural features, and circulation system. Although a landscape may not retain all of the characteristic features that it had during its period(s) of significance, it must retain enough or have been restored enough of the essential features to make its historic character clearly recognizable. The clearest definition of integrity related to landscape is the presence of identifiable components of the original design (Keller and Keller 1998:8).

General types of landscapes include designed landscapes (NRB Bulletin 18), rural landscapes (NRB Bulletin 30), and military landscapes (Loechl et al. 1996: 47-93). Although small landscapes without any buildings or structures can be listed as a site, most historic landscapes have extensive acreage and a number of buildings and structures. Historic and military landscapes often include other property types (e.g., structures, buildings, objects) as well as the relationship among the important characteristics of the landscape, such as industrial, functional and ceremonial areas and their modifications over time as mission requirements change (Loechl et al. 1996: 8-9).

Designed landscapes are one type of landscape that has significance as a design or work of art, was consciously designed and laid out by a master gardener, landscape architect, or horticulturalist to a design principle, or owner or other amateur using a recognized style or tradition in response or reaction to a recognized style or tradition; has an historical association with a significant person, trend, event, etc., in landscape gardening or landscape architecture; or a significant relationship to the theory or practice of landscape architecture (Keller and Keller 1998).

Examples of designed landscapes that may exist at Picatinny are: small residential grounds; church yards; cemeteries; monument and memorial grounds; plaza, square, or other forms of public spaces; arsenal/military planning or civic design areas; subdivisions and planned communities; industrial grounds or areas; designated or developed outdoor recreation areas including the Golf Course, baseball fields, basketball courts, etc.; and manmade bodies of water/foundations are considered an independent component and not part of a larger design

scheme.

Rural historic landscapes also may qualify for listing to the NRHP as an historic site or district. A rural landscape is defined as "a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structure, roads and waterways, and natural features" (McClelland et al. 1999). Most rural landscapes are not created by a professional designer and were not developed to academic or professional design standards, theories, or philosophies of landscape architecture which make them quite distinct from the designed landscapes (McClelland et al. 1999).

3.5.2.1 *Military Landscapes*

Military installations include some of the most historically significant properties in the American cultural landscape and, as with any landscape; the military landscape reflects the history and cultural traditions within which it has evolved (Loechl et al. 1996:3). A historic military landscape is defined as being "significantly associated with historically important persons or events, or is an important indicator of the broad patterns of history, or represents a significant example of design or construction" (Loechl et al. 1996:7). As these types of landscapes relate to the NRHP, they are potentially eligible for listing as a historic site or district. A historic military landscape, like all historic or prehistoric sites, must possess sufficient integrity to convey its significance to be eligible for nomination to the NRHP. Characteristics of a historic military landscape (Loechl et al. 1996:8) include:

- military mission, expressed as a fundamental design principle influencing landscape development and its usage;
- siting and layout (spatial organization), directly related to the evolution of the military mission and, in many cases, influenced by the local, natural environment;
- military cultural values and traditions, expressed in the landscape as a ranking hierarchy in building placement and landscape treatment, uniform architectural styles, utilitarian land use, including the buildings, structures, and objects (RP) themselves, and even archaeological sites;
- high level of similarity, basic components and designs are repeated within an installation and are often common among many installations;
- restricted access, controlled entrance and exit points;
- clearly defined borders created through fencing, walls, guard posts, sentry houses, signs and other features.

In an effort to develop guidance applicable to the military landscape, the U.S. Army Corps of Engineers Construction Engineering Research Laboratory (USACERL) developed *Army Guidelines for Identifying and Evaluating Historic Military Landscapes: An Integrated Landscape Approach* (Loechl et al. 1996) to evaluate significance and integrity and assist in determining eligibility and boundaries of historic military landscapes. The guidelines are designed to be used in conjunction with NRB Bulletins 15 (NRHP Staff 2002), 18 (Keller and Keller 1998), 30 (McClelland et al. 1999), and 40 (Andrus 1999) as well as additional bulletins and materials addressing specific property types and issues providing a systematic evaluation.

The USACERL document presents a systematic evaluation process with which to assess the unique development and historical contexts of military installations, emphasizing the importance of the relationships among the individual buildings, structures, and grounds that contribute to an historic military landscape (Loechl et al. 1996:3). The document defines the historic military landscape as:

A military landscape that is significantly associated with historically important persons or events, or is an important indicator of the broad patterns of history, or represents a significant example of design or construction. For the purposes of the National Register, a historic military landscape is a category of property eligible for listing on the National Register of Historic Places as a historic site or district. To be eligible for nomination to the Register, a historic military landscape must have sufficient integrity to convey its significance [Loechl et al. 1996:8].

The guidelines further describe different contexts and characteristics with which to interpret and understand the military landscape helpful in making a determination of historical significance and associations. Using this overall landscape approach provides a framework for recognizing the different stages of development of military installations and the relationships among historical trends, military missions, installation types, and landscape appearance (Loechl et al. 1996:19).

Overall, the ICRMP utilizes a cultural landscape approach which analyzes the spatial relationships among natural and Cultural Resources within their natural setting. By considering terrain (e.g., elevation, slope, soil, water) and Cultural Resources (e.g., structures, sites) and their non-random distribution across a landscape, planners can locate military field training and testing activities to minimize, as well as identify potential unknown resources before they are impacted (see <http://aec.army.mil/usaec/cultural/milland.pdf> for more information on the cultural landscape approach).

4.0 Planning Level Survey

The planning level survey is an analysis and discussion of Picatinny's cultural landscape. This analysis integrates what is known about the installation with the appropriate research contexts and questions to provide a critical framework for the ICRMP and the implementation of project specific compliance actions. This information determines the range and types of resources and properties present within the installation. Information derived from this approach assists in developing and analyzing the spatial relationships among all properties within their natural and human settings. The cultural landscape analysis within the planning level survey offers a method for comprehending the land use history of the installation and the interrelationships among the natural and human-affected landscape and subsequent human activities across the entire installation through time (Dept. of the Army Pamphlet 200-4:2). Picatinny's physical landscape and environmental setting (physiography, topography, soils, hydrology, climate, flora, and fauna) followed by a summary of the area's past environmental setting (paleoenvironment) and historic land uses is presented within Appendix H.

4.1 CULTURAL LANDSCAPE AND LITERATURE REVIEW

Historical literature and reports for the installation have been performed, conducted, and documented since the early 1930s. These documents consist of archaeological and Cultural Resource Management reports, planning documents, historic structures reports, and installation histories. The totality of these informational sources has been used to ascertain the existing Cultural Resources, land use patterns and potential archaeological site sensitivity within the installation.

The primary documents pertaining to the identification and management of Cultural Resources at Picatinny are (in chronological order; Section 8):

- 1) *The History of Picatinny Arsenal* (Rogers 1931) – compilation of installation documents to record the geographical, geological, and historical data for the development of the Arsenal as it was in late 1800s and the early 1900s until 1930;
- 2) *HABS/HAER Inventory of Picatinny Arsenal* (Thurber et al. 1984; NJ-36) - 1982-83 HABS/HAER Level 4 assessment of Historic Properties for the U.S. Army Material Development and Readiness Command (DARCOM);
- 3) *An Archaeological Overview and Management Plan for Picatinny Arsenal by EnviroSphere Company* (Klein et al. 1986) - archival review of historic maps and the surrounding region serving as the basis for the identification of over 100 previously unrecorded Historic Properties, Cultural Resources, and archaeological sites. This management plan also provided a pragmatic framework for archaeological investigations and sensitivity across the installation;
- 4) *Morris County Historic Sites Survey: New Jersey Historic Sites Inventory, Morris County Cultural Resources Survey* by Acroterion (1986/87) - largely documents civilian structures within the Townships of Rockaway and Jefferson, Morris County;
- 5) *Draft NRHP Nomination Form for Picatinny Arsenal* (1987) - presentation of useful information and concepts gathered to document the historical significance of Picatinny,

- although never formally submitted for review;
- 6) *Historic and Prehistoric Reconnaissance Survey, Picatinny Arsenal, New Jersey* by Public Archaeology Laboratory reprinted by the Department of the Army as *Army Materials Technology Laboratory Closure: Supporting Documentation* (Fitch and Glover 1990) - review of the prehistoric and historic period regional contexts of the installation within a national military framework, along with descriptions of over 100 known and potential archaeological resources expanded from Klein et al. (1986), Rutsch et al. (1986) and other archival research;
 - 7) *A Report on the Cultural Resources Surveys Conducted on Picatinny Arsenal, Morris County, New Jersey within the Right-of-Way of the Proposed Transmission Line of the Mt. Hope Hydropower Project* by Historic Conservation and Interpretation, Inc. (Rutsch, Sandy and van Voorst 1994) – documentation of archival research and recordation of three (3) archaeological sites found during a Phase IA and B survey performed for the Mount Hope Hydroelectric Facility and related transmission lines along portions of Lake Denmark Road and various areas of the northern parts of the installation. Survey work took place between 1986 and 1992 (Rutsch et al. 1986; Rutsch and van Voorst 1989; Rutsch and van Voorst 1991; Sandy and Rutsch 1992);
 - 8) *Evaluation of Structures Built Prior to 1946 at Picatinny Arsenal, New Jersey* by Boston Affiliates and WCH Industries, Inc. (Harrell 1996) - re-evaluation of 543 historic structures for the installation's first ICRMP;
 - 9) *Identification and Analysis of Wetlands, Floodplains, Threatened and Endangered Species and Archaeological Geomorphology at Picatinny Arsenal, NJ* by the USACE WES (1996) – report documenting the installation's geomorphologic information for Cultural Resource Management citing potential archaeological site locations within Klein et al. (1986), along with a categorization and delineation of wetlands, floodplains, and species. Compiled with this document was an annotated bibliography of documentary reference materials relating to Picatinny and its association with the iron industry, ironworks and forges in the Highlands region (Morrell 1995);
 - 10) *Cultural Resource Management Plan for the Picatinny Arsenal, Rockaway Township, Morris County, New Jersey* by PCI (Cinquino et al. 1996) - installation's first protection and compliance plan to re-evaluate Klein et al. (1986) and to support the *Future Development Master Plan for U.S. Army Armament Research, Development and Engineering Center [ARDEC], Picatinny Arsenal, New Jersey: Commander's Summary* (Lev Zetlin Associates 1992) and the *Installation Design Guide for Picatinny Arsenal, New Jersey* (STV/Lyon Associates, Inc. 1994)- general overall discussion of the installation's goals and future plans with detailed methods of implementation in an environmentally and historic preservation conscious manner;
 - 11) *Architectural Assessment of Historic Structures at Picatinny Arsenal, Morris County, New Jersey* (Nolte and Steinback 1999a) and 10) *Definition of Historic Districts for Picatinny Arsenal, Morris County, New Jersey* (Nolte and Steinback 1999b) – final re-evaluation of the 543 historic structures documented by Harrell (1996) for determination of NRHP eligibility. Of the 543 structures documented, this report recommended 485 ineligible, and 56 as contributing and non-contributing resources of three (3) eligible historic districts, along with two individually eligible buildings;
 - 12) *ICRMP for Picatinny Arsenal, Dover, Rockaway Township, Morris County, New Jersey* by

PCI (Cinquino et al. 2000) –update of the 1996 ICRMP;

- 13) *An Archaeological Field Inspection of 55 Sensitive Areas, a Phase IB Survey of Eight Areas, and a Phase II Investigation of Three Sites at Picatinny Arsenal, Morris County, New Jersey* by PCI (Schieppati et al. 2000 and 2003) – re-evaluation of archaeological sensitivity areas originally defined in Klein et al. (1986) and WES (1996) with Phase IA and B, and Phase II identification, verification and accuracy. This report devised appropriate field testing strategies for further archaeological work and recorded thirteen (13) archaeological sites across various parts of the installation for Cultural Resource Management; and
- 14) *ICRMP for 2001-2006 and 2003-2008 for Picatinny Arsenal, Morris County, New Jersey* by PCI (Schieppati and Steinback 2001) and Ridgel in association with PCI (2003) - update of the 2000 ICRMP.

From these documents, the installation can be divided into three (3) general cultural and historic land use periods:

- 1) prehistoric subsistence activities conducted by Native Americans prior to the invasion of European traders/settlers demonstrated by the presence of prehistoric camp and rockshelter sites identified within and adjacent to Picatinny;
- 2) pre-Arsenal industrial and agricultural activities associated with iron mining and production endeavors during the colonial/pre-Arsenal period by European-American settlers, and rural settlement activities, which included the limited cultivation of grains and livestock, prior to 1880. Fitch and Glover note "both historic and modern period land use of the area encompassed within Picatinny has resulted in alteration to the natural topography" (1990: B-185). The New Jersey Highlands have been a focus of historical development and settlement since the early-18th Century, when the region's potential as an iron producer began to be exploited. The Green Pond Brook valley was the site of several iron forges, which operated from about 1750 until just after the Civil War. Land alterations associated with these forges includes the creation of both Lake Denmark and Picatinny Lake as well as early historic tree-clearing and plowing related to both the erection of farmsteads and the making of charcoal for local forges and furnaces; and
- 3) military-related construction endeavors and subsequent associated industrial activities beginning in 1880, involving the replacement or reuse of structures or remains associated with agricultural and early industrial periods of the area and the subsequent, dramatic land alterations inherent in the erection of the installation itself.

Initial construction activities at the installation occurred in the 1880s when the Army began purchasing tracts of land in the vicinity of Picatinny Lake. Additional construction has proceeded through to the present as the installation has adapted its facilities to meet the exigencies of its mission (Klein et al. 1986; Rogers 1931). Construction activities focused on the erection of storage magazines, officer's quarters, and service facilities within Picatinny's initial 1,866 acres (746 ha) in the Green Pond Brook valley. As the installation and the Navy's Lake Denmark Powder Depot expanded within the valley, their missions diversified to incorporate the manufacturing of increasingly more powerful explosives and ordnance, and involved dramatic construction and earth-moving activities. Periodic construction episodes involved the razing of

historic structures, the erection of new structures or the expansion of existing buildings and other land modification activities, such as grading or filling. Successive land acquisitions, including the Lake Denmark Depot, enlarged the facility to its present size encompassing approximately 5,850-acre and generally enhanced the installation's capability to perform its mission or preceded changes in mission. Currently, the installation comprises approximately 5,850-acres of fee simple property including 793 buildings; 177 auxiliary structures, RP assets, and associated land management areas such as the Golf Course; and approximately 85 miles of roads. Additionally, 641 acres of private property comprising 6 tracts are encumbered by Dept. of the Army restrictive easements. These tracts are not managed by Picatinny or the Cultural Resource Management Program. Presently moreover, the installation is divided into four broad land use areas:

- 1) research, development and testing areas;
- 2) administrative areas;
- 3) housing and community areas; and
- 4) parking areas.

Picatinny's primary mission is research, development and engineering of munitions and weapons. Past operations and waste management practices led to contamination throughout the installation, and it was placed on the National Priority Listing for Federal Facilities; as a result safety and UXO clearance zones in specific areas also exist and need to be considered during any development activities.

4.2 RESEARCH CONTEXTS

Based upon the wide variety of cited works above and within this ICRMP (Section 7), as well as insights from the archaeology of nearby regions, a prehistoric settlement pattern historic context can be further explicated and elaborated for the installation. The settlement pattern historic context is further specified below by time periods and associated property types representing the kinds of settlements and associated locations thought to have been used in the New Jersey Highlands region.

4.2.1 *Prehistoric Period Archaeological Resources*

Overall, the prehistory of northeastern North America is marked by three major periods spanning approximately 14,000 years. The earliest of these periods is the Paleo-Indian, which lasted from 12,000 BC to 8,000 BC. Living in seasonal camps near fresh water sources, Paleo-Indians subsisted by hunting and gathering. This period is followed by the Archaic period, which lasted from 8,000 BC to 1,000 BC and was characterized by seasonally occupied campsites and later seasonal villages. The Archaic subsistence system was hunting and gathering with possibly incipient horticulture toward the end of the period. After 1000 BC, Native Americans of the Woodland period lived in seasonally occupied villages and campsites and subsisted by hunting, gathering and, by AD 1,000, horticulture. Ceramics were first made in northeastern North America during the Woodland period. These periods are described in more detail below.

By and large according to information provided in Chesler (1982), and discussed in Fitch

and Glover (1990), archaeologists have not considered the New Jersey Highlands region as a core area of prehistoric Native American settlement. Rather, the area is seen as a region of seasonal settlement for natural food resource exploitation by mobile, hunting and gathering or hunting-gathering-horticultural populations and considered a travel route between coastal and interior (Delaware valley) larger core settlement areas. As a consequence, the types of sites expected to occur include small camps associated with travel, hunting or gathering in rockshelters and comfortable, resource rich locations such as well drained sites adjacent to or overlooking lakes, marshes and streams. However, contradictorily recent reiteration of these views from ongoing research and assessments has considered during early post-glacial times, upland valleys with extensive wetlands, such as the Green Pond Brook system, may have actually been core settlement areas especially for Paleo-Indian and Early Archaic bands. These peoples exploited the resources of drained glacial lake basins before Holocene river systems and coastal shorelines had stabilized or developed the recent ecological characteristics favorable for human settlement core definition. In this view, drained glacial lake basins are early core settlement areas largely independent of relative altitude and associated stream ranks. This perspective is based upon human settlement modeling and empirical research by Nicholas (1988) and Cesarski (1996), and is supported by observations of early post-glacial archaeological site occurrence in southeastern New York by Eisenberg (1978), and the New Jersey Highlands by Marshall (1982).

Prior to 1965, the archaeology of New Jersey was known primarily through the work of early investigators such as Skinner and Schrabisch (1913), who provided a preliminary atlas of the distribution of known archaeological resources, stratigraphic investigation such as those conducted by Hawkes and Linton (1916); exploration of Lenape village and mortuary locations by Heye and Pepper (1915), Ritchie (1949), and others; and the attempt to systematize the evidence of New Jersey prehistory, published in two volumes by Cross (1941, 1956). Additionally in 1965, Ritchie's *Archaeology of New York State* provided a model of cultural systematics and interpretation was applied broadly in the Northeast, and had specific applicability, at least in part, to New Jersey. Ritchie's general framework was extended and expanded through investigations of the proposed Tocks Island Reservoir in the upper Delaware valley, on the New Jersey-Pennsylvania border (Kinsey et al. 1972). The excavations in the upper Delaware valley, which were later continued for NPS planning and management of the Delaware Water Gap, have provided a substantial amount of information about New Jersey archaeology, including the types of archaeological sites and intersite variation (Kinsey et al. 1972; Kraft 1970, 1975, 1978, 1986; Orr and Campana 1991). In the 1980s, a set of State plans for archaeology study units or historic contexts comprehensive of statewide prehistory, ethnohistory and history was assembled by Chesler (1982), along with a synthesis of New Jersey archaeology with a broad overview of chronology, subsistence, settlement, technology and other cultural information was published by Kraft (1986). The NPS has also considered New Jersey within its development of a contact period thematic study of archaeological sites in consideration of National Historic Landmark designation (Grumet 1992). Based upon these sources, and particularly following Chesler (1982), Kraft (1986), and Orr and Campana (1991), the following prehistoric context has been established for the Picatinny valley and its surrounding region by Klein et al (1986) and Fitch and Glover (1990).

Human land use involved settlement and subsistence activities focused upon the postglacial ecosystems formed in drained glacial lake basins. Drained glacial lake basins are termed "core

settlement areas" for human populations of the early post-glacial era (Cesarski 1996:85). Some such locations are in areas central to subsequent settlement, including modern foci of settlement and transportation, while others, by later standards, became hinterlands or even frontiers. In her study of early post-glacial settlement systems in the Hudson drainage, Cesarski (1996; Magne 1989) identifies different kinds of settlements or camps as *Residential Sites*, *Repeated Logistical Camps*, *Manufacturing Sites*, and *Situational "Emergency" Camps*:

- *Residential Sites*- the widest variety of activities occurs and a considerable amount of manufacturing takes place. Therefore, Residential Sites are those sites identified as having a wide variety of activities and a relative preponderance of manufacturing activities indicated by the artifact assemblage. Through time, this kind of assemblage may increasingly become associated with facilities such as food preparation, storage, and housing facilities, and during the Woodland period, ceramics (Sassaman 1992);
- *Repeated Logistical Camps*- the location of a variety of activities, so like Residential Sites, they have high assemblage diversity. However, since they are involved with a logistical mobility phase of human subsistence and settlement, they normally are provisioned from elsewhere, and do not have a high proportion of debris produced by manufacturing. Waste materials likely are dominated by repair rather than manufacturing debris. Facilities other than certain specialized facilities are either not present or not diverse (Binford 1980; Curtin 1996);
- *Situational "Emergency" Sites*- short-term camps occasioned by the challenges and unpredictability of travel and environmental variables. Assemblages have low diversity as the technology is mobile and little is left behind, unless cached against future travel or field difficulties (Binford 1979). Similarly, any waste materials are from situational exigencies or incidental repairs, so repair debris greatly dominates manufacturing debris;
- *Manufacturing Sites*- sites where manufacturing or the initial stages of manufacturing take place; good examples are stone quarry sites or associated workshops. Manufacturing debris is abundant, repair debris is incidental or limited to specialized technology, such as quarry tool rejuvenation (LaPorta 1996), and assemblage diversity is low as a result of the specialized nature of activity at these sites.

These are the property types associated with the Prehistoric Settlement Patterns historic context for the installation, although other types may be discovered and added based upon future archaeological research. A relatively balanced variety of these site types can occur in either lowland glacial lake basins, such as the Hudson valley within Glacial Lake Albany (north of Newburgh, New York), or higher elevation glacial lake basins such as the Green Pond valley within the former glacial Lake Green Pond. While many early archaeological sites occur adjacent to, or on the drained surfaces of former glacial lakes, archaeologists have long noticed some Paleo-Indian sites, particularly large sites, are found on high elevations where game movements in the valleys could be observed (Eisenberg 1978; Funk 1976; Kraft 1986; Ritchie 1965; Witthoft 1952). A brief discussion of identified prehistoric period archaeological resources found on the installation and within the Highlands region appears throughout Section 5 and also Appendix H.

4.2.1.1 *Paleo-Indian Period (14,000-10,000 years ago)*

Glacial ice disappeared from New Jersey earlier than 16,000 years ago (WES 1995:30; Funk 1993:43-44; Marshall 1982:17). About 12,000 years ago, the environment of the Highlands was a mosaic of tundra and forests predominantly pine, spruce and fir, which eventually gave way to birch and oak (Marshall 1982:17; Funk 1972:10; Salwen 1975). The emergence of oak stands and subsequent increase in resource availability allowed greater human population density toward the end of the period.

At the end of the Pleistocene era, glacial Lake Passaic dominated the southeastern half of what is now Morris County, which was cut in half by the Wisconsin terminal moraine. The late Pleistocene environment provided important habitats for large mammals and other game potentially significant for human subsistence. Pleistocene megafauna, including mammoth, mastodon, great beaver, fossil bear, and northern species like fox, seal, moose and caribou, roamed the Northeast (Funk 1972:11; Ritchie 1980:10-11; Rutsch et al. 1986:12; Marshall 1982: 17-18). While tundra-like conditions probably existed near the terminal moraine in Morris County, glacial Picatinny Lake formed in what would become the Green Pond Brook valley as the Wisconsin glacier receded (WES 1995:12). Therefore, the Paleo-Indian period represents a long time of considerable cultural flux and adaptive change. Nonetheless, previous research (Cesarski 1996; Nicholas 1988) indicates the most general condition of early human adaptation in the northeastern U.S. was to the aquatic, wetland and terrestrial resources of drained glacial lake basins, such as those formed by glacial Lakes Passaic and Green Pond.

During the 4,000-year Paleo-Indian period, human subsistence shifted from large Pleistocene game, like caribou, to more modern, mid-latitude species, such as white-tailed deer (Eisenberg 1978). In addition to hunting and fishing, plant foods were available to Paleo-Indian groups, including Goosefoot (*Chenopodium* sp.), ground cherry, blackberry, hawthorn, plum, pokeweed, pigweed (*Amaranthus* sp.), smartweed (*Polygonum* sp.), wild lettuce, grape, hackberry, and meadow grass (Kraft 1986:41).

Early Paleo-Indian chipped stone artifacts include fluted points—thin, lanceolate-shaped bifacial implements fluted down the center for hafting—unifacial end and side scrapers, utilized flakes, and waste flakes (Marshall 1982:13). At least six fluted points have been found in Morris County and 15 in the Highlands region (Marshall 1982:26). The points were made predominantly of jasper, gray chert, black chert, and quartz. Fluted points gradually decreased in size as larger game animals moved north or became extinct (Kraft 1986:47). Fluted points were eventually replaced during the late Paleo-Indian/Early Archaic transition (10,000-8,000 years ago) with unfluted triangular points, stemmed points and Plano points. The last are lanceolate-shaped points without flutes.

4.2.1.2 *Early Archaic (10,000-8,000 years ago)*

About 10,000 years ago, the Early Archaic period succeeded the late Paleo-Indian period (Kraft 1986). At the time, the hills and mountains were overgrown with pine, hemlock and oak while forests in the coastal areas were populated with chestnut and oak (Kraft and Mounier 1982a:59). The retreating glacier caused a continuing rise in sea levels forcing prehistoric people

to move away from the coast. People still lived in small territorial bands that hunted, fished, and gathered plant foods. With the exception of the dog, they had no domestic animals (Kraft 1986:51). People of the Early Archaic period subsisted on fish, shellfish, berries, roots, tubers, eggs, nuts, and deer (Kraft 1986:51). They moved when food supplies dwindled. The small encampments close to rivers or ponds typical of Early Archaic sites reflect this mobility (Kraft and Mounier 1982a:76).

The Early Archaic tool kit consisted of Hardaway Dalton points, Palmer corner-notched, Kirk corner-notched, and bifurcate base points like Amos corner-notched and LeCroy, both of which frequently had serrated edges. Bifurcate base points were found at Site 28-Mr-42, which lies three miles west of Picatinny on the banks of Lake Hopatcong, and Site 28-Mr-43, one mile north of Lake Denmark. People of the Early Archaic also used end scrapers, side scrapers, spokeshaves, drills, graters, choppers, hammers, and anvil stones.

4.2.1.3 *Middle Archaic (8,000-6,000 years ago)*

The Middle Archaic period lasted from 8,000-6,000 years ago. The climate was warm and moist by about 7,000 years ago, and water levels continued to rise, forcing groups to move inland. Oak, chestnut, beech, and elm dominated the landscape causing animal populations to increase in the forests because of the abundance of mast foods produced by the trees. People of the Middle Archaic subsisted on chestnuts, acorns, fish, as well as the abundant forest animals.

Similar to the Early Archaic, settlement pattern featured the same property types, although their distribution across the landscape may have changed over time, with a shift of core settlement toward major river valleys. This settlement pattern change would involve a disappearance or decreased frequency of residential sites in glacial lake basins that do not contain major streams. The ratio of various camps and manufacturing sites to residential sites in glacial lake basins without major streams would increase, and the number and/or size of residential sites associated with major streams and rivers would also increase. In the Highlands, residential sites may have been abandoned, to be replaced by repeated logistical camps or other relatively short-term, seasonal camps.

People began to develop woodworking tools during the Middle Archaic using coarse-grained stones and river cobbles as their raw materials. These were commonly available in large sizes and allowed tool makers to reserve high quality lithic materials for finely flaked tools. In order to work these coarse-grained rocks, new shaping techniques had to be developed. The primary technique was pecking and grinding which was used for shaping axes, adzes, gouges, choppers and other woodworking or rough stone tools. These heavy woodworking tools may have been used for canoe building. In addition to these implements, the Middle Archaic tool kit included anvil stones, choppers, netsinkers and an array of projectile points.

For Middle Archaic people, the most commonly used raw materials included chert, jasper, argillite, shale, and rhyolite. Neville points are found in Middle Archaic sites as are Stanley Stemmed points, which are similar to Early Archaic Bifurcate Base points (Kraft 1986:58). Morrow Mountain II points, which resemble Poplar Island and Stark points, also occur in Middle

Archaic sites. Although widely accepted as a Late Archaic projectile point type, Mounier argues the Poplar Island complex may have originated in the Middle Archaic because of stratigraphic and morphological associations with Morrow Mountain II and Stark points, which date to 6,500 and 7,000 years ago, respectively (Kraft and Mounier 1982a:79). According to Mounier, a lack of "good stratigraphic data in the Middle Atlantic Region where points of this kind predominate" prevents accurate dating (Kraft and Mounier 1982a:79). Perhaps a more detailed examination of the New Jersey Highlands would shed some light on this problem.

4.2.1.4 *Late and Terminal or Transitional Archaic Periods (6,000-3,000 years ago)*

The environment during the Late Archaic was similar to today. Hunting, fishing, and gathering were still the principal daily activities, although greater emphasis was placed on small game, shellfish, nuts and wild cereal grains like *Chenopodium*. This shift in subsistence strategies made higher population densities possible. As population increased, camps became larger and more numerous. While principal settlements were located near major rivers, people still lived in bands whose territories were probably well defined. Moving seasonally or when resources dwindled, Late Archaic groups may have congregated occasionally for exchange and socialization (Ritchie and Funk 1973).

This is a period of time whose archaeological remains are relatively abundant and widespread across the Northeast. It is also when large archaeological sites with dense, artifact rich soils and refuse deposits are earliest documented. Some Late Archaic residential settlements may have been larger than in any previous period, while a record of repeated occupation of particular sites is well demonstrated (Kraft 1986; Ritchie 1965; Ritchie and Funk 1973). The Miller Field site in the upper Delaware valley is a compelling example of this type of site (Kraft 1970). Large, residential, Late or Terminal Archaic sites are not expected to occur in the Highlands. The shift of core settlement areas to major river valleys and coastal areas would be complete by the Late Archaic period. Some groups of people did still live in highland band territorial areas were more well defined. Moving seasonally or when resources were available dwindled, while groups may have congregated occasionally for exchange and socialization (Ritchie and Funk 1973). Other expected Late and Terminal Archaic site types within Picatinny include repeated logistical camps, situational "emergency" sites, and manufacturing sites.

Heavy grinding implements like mullers, mortars and pestles provided new means of preparing food from seeds, nuts, dried berries and meat. These implements were made of sedimentary and metamorphic rock-like sandstone and argillite. Late Archaic people also used bifacial, chipped stone knives, semilunar knives, which were often made of slate, the atlatl or spear thrower, bolas, and plummets. Long, narrow stemmed or narrow, weakly notched projectile points, like Poplar Island, Bare Island, Lackawaxen Stemmed and Normanskill, were characteristic of the Piedmont or Small-Stemmed Tradition (Kraft 1986:73).

Another innovation was steatite or soapstone pots that facilitated cooking and food preparation. At the end of the Late Archaic, large, broad bladed, skillfully made spear points of the Susquehanna broadspear tradition began to appear on archaeological sites along the Atlantic Coast from Georgia to Maine. According to Kraft, this tradition probably originated in the southern

Piedmont and was related to the Savannah River culture (Kraft 1986:84). In New Jersey, the local expression of this culture is known as the Koens-Crispin, which is represented by broad stemmed points, scrapers, atlatl weights, celts and adzes. Koens-Crispin points are similar to Savannah River, Lehigh Broad, and Snook Kill points, indicating widespread travel and trade among Susquehanna tradition people. "The complex is associated with an elaborate pattern of mortuary ceremonialism which emphasized the practice of cremation, the ritual use of red ocher, and the often lavish inclusion of grave goods" (Kraft and Mounier 1982a:82). The Koens-Crispin site in Medford, New Jersey, and the Savich Farm site in Marlton, New Jersey, both revealed such practices.

Late Archaic people also continued to use rockshelters when necessary. For example, a rockshelter site located in the Town of Wayne near the border of Morris and Passaic counties produced Late Archaic diagnostic artifacts, plant and animal remains, and intact features (Lenik 1985). Also, the Ground Bee Rockshelter, located near Longwood Lake, less than one mile west of Picatinny, is cited as a Late Archaic site (Fitch and Glover 1990). As well, four (4) recently located sites date to the Late Archaic Period for resource production and extraction are along cliff edges and steep slopes (Fitch and Glover 1990; Huggan 2008: report still in draft production).

Overall, archaeologists distinguish the period between 4,000 and 3,000 years ago as the Terminal Archaic as a result of the accumulated cultural changes during the Late Archaic. During this period, nut-bearing trees like oak, hickory, chestnut, and beech dominated the eastern forests. Sea levels continued to rise, causing increased salinity in estuaries, including the lower Hudson River (Kraft 1986; Snow 1980). People subsisted on deer, black bears, small mammals, wild turkeys, pigeons, shellfish, fruits, roots, nuts, and fish.

4.2.1.5 *Early Woodland Period (3,000-2,000 years ago)*

The research summarized by Kraft (1986) indicates an increasing settlement within and use of floodplain and river bottom habitats during Early and Middle Woodland Periods. This continues the long term trend of the increasing importance and ecological complexity of human settlement throughout major river valleys. It is likely this trend represents a broadening of the human adaptive niche with respect to aquatic and floodplain resources, and increasing use of longer term, even multi-season settlements in the lowlands. The floodplain and aquatic resources include (or probably include): starchy seed plants that grow in disturbed soils; shellfish; sturgeon; other fish that may have been trapped in backwater lakes by retreating floods; and nut-producing trees of the lowlands such as butternut, black walnut, and hickory. Overall, the specific uses of the Highlands area is not well understood due to a general lack of information, but general property types are expected to include repeated logistical camps, situational "emergency" camps and manufacturing camps.

The introduction of pottery marks the beginning of the Woodland period. The Early Woodland period lasted from 3,000-1,000 years ago. Several different cultures can be recognized in the Early Woodland period. Orient Fishtail points replaced the broadspears of the Terminal Archaic during the Orient phase (3,050 to 2,750 years ago). These points were used as knives and spears, and were reworked into drills, scrapers, strike-a-lights, and graters (Kraft 1986:91-92).

Orient people still used soapstone pots but also used clay pots tempered with crushed steatite. These pots, called Marcey Creek Plain, were similar in shape to steatite pots. Another early type of ceramic was Vinette 1, which was cone-shaped with cord-marked impressions on the inside and outside.

Another Early Woodland culture, the Meadowood phase, originated in northwestern and central New York. Like the Orient culture, Meadowood people used Vinette 1 pottery. Meadowood cache blades made of Onondaga chert are often found buried along canoe routes (Kraft 1986:95). The blades may have been buried so they would be available for later use or for trade with the local people. The Meadowood people hunted, gathered, and fished although their subsistence strategy involved a higher degree of mobility than the Orient populations (Kraft 1986:95). Meadowood people cremated their dead and buried them in cemeteries away from habitation sites. No Meadowood cemeteries, however, have been found in New Jersey (Williams and Thomas 1982:112). Other Early Woodland mortuary sites contained several different types of burials; some individuals were cremated, some flexed, others were extended or bundled.

A third Early Woodland culture is Adena-Middlesex which lasted from 2,800 to 2,300 years ago. Adena people subsisted on smartweed, lambs quarters, marsh elder, pigweed, canary grass, nuts and roots, as well as mammals, fish and fowl (Kraft 1986). Evidence of early, domesticated cucurbits appears at this time in the Midwest, while domesticated tobacco is inferred from the presence of pipes. These people had a rich material culture consisting of pipes, pendants, boat stones, Cresap points, Adena Beavertail points and copper beads. Unlike their contemporaries, Adena- Middlesex people likely respected and encouraged the accumulation of wealth (Kraft 1986).

The Bushkill culture (also considered early Middle Woodland period, 2,560 to 1,975 years ago) is somewhat less ostentatious than Adena-Middlesex. People of this culture used cord- and netmarked pottery and subsisted on birds, deer, shellfish and fish. The culture is characterized by Lagoon points, Rossville points and small side-notched points. Gorgets, bifaces, scrapers, pestles, milling stones, mullers, netsinkers and celts are also frequently found on Bushkill sites (Kraft 1986:105).

Typically, upland and back country sites during this period are expected to show limited activity, resource extractive, and associated short term camp functions. In terms of the property types discussed previously, the ratio of residential sites in major river valleys compared to other locations would continue to increase, while residential sites in major valleys would become still larger and more complex. In other words, the number of large complex residential sites along major streams would increase, while upland areas such as Picatinny would show relatively stable, short term, seasonal uses similar to the Late and Terminal Archaic period uses.

4.2.1.6 *Middle Woodland Period (2,000-1,000 years ago)*

The Middle Woodland period was characterized by four major phases: Tocks Island, Fox Creek, Point Peninsula and Hunters Home. Projectile points from the first phase, Tocks Island (1,800 to 1,600 years ago), were recovered from the Harry's Farm site along with net-marked, exterior corded-interior smoothed, and Abbot Horizontal dentate pottery (Fischler and French

1991:148).

Additionally, fishing was an important activity for the Fox Creek culture (1,700 to 1,550 years ago) (Fischler and French 1991:148). Diagnostics of this phase include net-marked pottery and Fox Creek lanceolate and stemmed projectile points. Bolas, celts, pitted stones, hammer stones, anvil stones and pestles are frequently found in Fox Creek sites. Petalas blades made of argillite and chert are often buried in caches and often found with sturgeon remains. A prime fishing location overlooking the Delaware River, the Abbot Farm site revealed 127 Petalas blades and a long copper needle. The needle enabled the prehistoric fishermen to string their catch on a cord for drying (Kraft 1986:107). The Piedmont region is one possible source for this native copper (Williams and Thomas 1982:115).

The Kipp Island phase of the Late Point Peninsula culture lasted from 1,700 to 1,150 years ago (Fischler and French 1991:148). Characteristics of this phase include Jack's Reef Corner-Notched and Pentagonal projectile points and dentate-stamped pottery. According to Kraft (1986:114), Jack's Reef points were probably arrowheads, which suggest the bow and arrow had come into use. Platform pipes, antler harpoons and beaver tooth incising tools were found at the Faucett and Minisink sites in the Upper Delaware River Valley along with decorative artifacts like stone pendants, shark-tooth beads, and bone combs (Kraft 1986:114).

Lastly, the Hunters Home phase (1,150 to 1,000 years ago) was transitional between the Middle and Late Woodland periods (Fischler and French 1991:149). Diagnostics of this phase include Jack's Reef pentagonal and corner-notched points, triangular points, and collarless, cord-marked ceramics.

4.2.1.7 *Late Woodland Period to Native American-European Contact (1,000 to-circa 390 years ago)*

Two distinct linguistic groups emerged during the Late Woodland Period: Proto-Munsee speaking people who generally lived in northern New Jersey, north of the Raritan River and Proto-Unami speakers who generally lived south of the Raritan River. These groups are known by differences in ceramics and burial style in addition to their linguistic differences (Kraft 1986:120). Since Picatinny lies in northern New Jersey, Proto-Munsee speakers will be the focus of this section.

During the Late Woodland period, the subsistence system shifted emphasis from the gathering of wild foods to the growing of domesticated plants. According to Fischler and French, the "earliest documented cultigen in the Upper Delaware Valley is *cucurbita* [gourd] at AD 1,060 + 60" (1991:160). This change was made possible sometime between 1,500 and 1,000 years ago by the development of Northern Flint corn, a cold-resistant strain that diffused broadly after its first appearance, probably in the Midwest (Fritz 1990). Corn associations with radiocarbon mean dates between 1,150 and 1,250 years ago are also reported from coastal Connecticut and the Susquehanna and Hudson drainages (Cassedy et al. 1993).

The introduction of corn horticulture was accompanied by sporadic population growth,

settled village life, an enriched religious and ceremonial life, and warfare. This is characteristic of some Late Woodland cultures, such as the Haudenosaunee/Iroquois in New York. The occurrence of similar developments for cultures in the Delaware Valley is not known. It seems likely the late prehistoric peoples of the Highlands lived in small, unfortified, dispersed farmsteads or hamlets, in similar fashion to many of the New England and Upper Delaware Indians (Bender and Curtin 1990; Cronon 1984; Handsman 1990; Kraft 1986). Late Woodland and Contact period burial sites seem to occur within residential sites (Kraft 1975, 1978). Therefore, cemeteries or concentrations of human burials of this period are not expected to occur within Picatinny.

In northern New Jersey, the first major phase of the Late Woodland period is the Pahaquarra/Owasco phase (1,000 to 650 years ago). Ceramics of this phase were collarless pots with cord-marked bodies and cord-impressed rims (Kraft 1986:120). Levanna points are found in high frequencies on Late Woodland Pahaquarra sites. Other stone tools include cobble flakes used for a variety of purposes, flake knives, and hammer and anvil stones (Kraft and Mounier 1982b:148).

Besides hunting, gathering, and gardening, Pahaquarra people spent a great deal of time fishing and gathering shellfish, which were then smoked in hearths or dried on stone platforms (Kraft and Mounier 1982b:151; Kauffman and Dent 1982). Ceramics with well-defined collars and incised linear geometric designs identify the Minisink phase (650 to 350 years ago) of the Proto-Munsee people (Kraft 1986:120). Minisink longhouses were virtually the same as those of the Pahaquarra/Owasco culture. Burials are often oriented with the heads to the southwest or west (Kraft and Mounier 1982b:157). A wide variety of implements have been found on these later Woodland sites, including tools for hunting, butchering, hide preparation, fishing, plant processing, cooking, woodworking, and domestic activities (Kraft and Mounier 1982b:154-155).

Since the local subsistence-settlement pattern is not expected to include gardens or horticultural fields, evidence of these types of sites is not expected to occur within Picatinny. As with the Late Archaic through Middle Woodland periods, Late Woodland to Contact period settlement patterns in the vicinity are expected to include only property types associated with mobile land uses, as found recently at Site 28-Mr-314, repeated logistical camps, situational "emergency" sites and manufacturing camps (Tetra Tech EM, Inc. 2006, 2007).

All of the property types previously identified likely characterizes the Late Woodland and Contact Period settlement patterns. However, residential sites may have special attributes, as well as certain economic specialization. Based upon archaeological evidence, at least some residential sites have evidence of elongate, wigwam type structures 15 to 20 feet wide and generally up to about 60 feet long (Kraft 1975, 1986). These sites also have large storage pits. These are distinguished from longhouses used in Iroquoian areas by different door and internal configurations having less organized and hierarchical implications for the social organization using the structures' internal space. Therefore, one specific Late Woodland to Contact period property type is the residential site containing one, or a small number of elongate structures. Examples of these residential sites were found at the Harry's Farm and other sites in the upper Delaware valley (Kraft 1975, 1986). However, this property type is not expected to occur at Picatinny.

Overall, these contexts and views imply the interpretation of archaeologically sensitive areas at Picatinny is very important for the study of Paleo-Indian, Early Archaic, and possibly Middle Archaic period settlement patterns and also sites of the Late and Terminal Archaic, and Early, Middle and Late Woodland periods are therefore expected to be associated with seasonal subsistence activities or temporary camping during travel.

4.2.2 *Historic Period Archaeological Resources*

The valleys in the New Jersey Highlands region were initially settled after 1700 by English, German and Swiss laborers who worked in the various industries related to manufacturing iron products. Historical records indicate several iron forges and mines were located in the vicinity of the Arseanl during the 18th Century (Halsey 1882). Moreover, while settlement of the region increased after 1750, parcels within the installation changed hands repeatedly with the vicissitudes of the iron economy. Therefore, historic archaeological resources within Picatinny have the potential to reveal significant information on the development of early industrial settlements and rural farmsteads in one of the least accessible areas of the colonial period. Additionally, the study of the historical and economic changes affecting these communities has the potential to reveal significant data on the changing pattern of social relationships within the rural/industrial community as it became enmeshed in broader, more national economic trends and patterns. Moreover, recovered materials may provide important data on the life of the early arsenal during the period of the U.S. rise to world prominence. In sum, due to its location in the mineral rich Highlands, the early patterns of making iron, and continuous operation of a Federal arsenal since 1880, the Picatinny area is very sensitive for historic archaeological resources, and continuous operation of a Federal arsenal since 1880 (Halsey 1882; Rogers 1931; Rutsch 1999). A brief discussion of known historic period archaeological resources found on the installation and within the region appears throughout Section 5 and Appendix H.

4.2.2.1 *Non-Military/Civilian Industrial Contexts (circa 1749-1890)*

Most historic resources pre-dating the installation's establishment are associated with the historic context of iron works tract or forge farm management from circa 1749 to 1890. (The establishment of the Naval Powder Depot beginning in 1891 left part of the Denmark Forge tract in private hands for a decade after the beginning of the development of Picatinny itself [see HABS/HAER 1985:1, 20). Three general phases characterize this period, each with distinctive and sometimes overlapping patterns of industrial development:

- iron production on forge tracts circa 1749-1870 as part of a regional iron industry, with forge activities occurring in association with sawmills, gristmills, charcoal kilns, farmsteads, roads, and other landscape features;
- farming, lumbering, and ice operations continuing on forge tracts in the mid-19th Century, after local iron manufacturing, other than ore production, had ended; and,
- attempted development of forge tracts as recreational and residential property circa 1840-90.

Although there are unresolved research issues pertaining to known or potential historic sites, good summaries of what is already known about many pertinent aspects of Highlands regional iron manufacture appear in published and unpublished works (e.g. Gordon 1996; Rutsch et al. 1986; Rutsch 1999; Schenck 1992). This discussion focuses on the most distinctive features of the forge tract historic context, reviews the current status of information available for Cultural Resource planning and sensitivity, and identifies research issues which could require further archaeological investigation.

4.2.2.2 *Forge Tracts During the Period of Wrought Iron Manufacture*

Historic settlement in the Highlands region, including northern Morris County, was based primarily on the use of extensive magnetite ore deposits to make cast or wrought iron products with charcoal fuel. Iron manufacture in this region, and in other European-American areas between southeastern Massachusetts and the Ohio and James drainages, required not only ore but access to other critical resources. Manageable waterpower sites were necessary to drive forge or blast furnace equipment. Charcoal-based iron manufacture required large forest tracts. Road or water connections were essential from often-remote iron production areas to local or regional centers. Draft animals, critical to moving wagon-loads of charcoal and iron among production sites or to points of distribution, needed fodder. Ironworkers and their families needed grain, meat, vegetables and lumber for food and shelter, regardless of how prosperous an ironworks was in different years or seasons.

When iron manufacture in Britain's American colonies became well established during the half century prior to the Revolution, entrepreneurs addressed these problems in ways which varied by scale of operation, terrain, waterpower sources, colonial settlement patterns, and systems of land distribution. In New England, where settlement generally expanded in townships with lands divided among proprietors in relatively small lots, forges and furnaces often operated within agricultural communities. Ironmakers purchased many of their supplies from farmers and mine operators, sometimes expanding forested holdings to assure adequate charcoal supplies. South and west of New England, large land grants often gave ironworks owners control of areas for production of charcoal, lumber, fodder, and some food for human consumption. Self-sufficiency on large forge or furnace tracts varied with terrain, soils, and the amount of land required for charcoal production; some enterprises grew nearly all their own food. Whether grown or purchased, food was often re-sold to tenant workers at stores run by the ironworks owners. Overall, the full range of variation among management patterns at 18th Century and 19th Century American forge or furnace tracts remains incompletely documented.

During the mid-18th Century three (3) forges were established either near or within what would become Picatinny Arsenal and along the Green Pond Brook. These iron forges were:

- Mount Pleasant Forge, founded in 1748 and subsequently known as Lower Forge;
- Picatinny Forge, founded in 1749 and called Middle Forge after 1772; and
- Burnt Meadow or Denmark Forge, founded in 1750 and known as Upper Forge.

These iron forges were begun on tracts of four to six thousand acres, including pastures or

meadows supplying animal feed, but like many Highland forge tracts the limited areas of arable land required importing food from more agricultural areas in southern Morris County (Dew 1994:9; Rutsch 1999; Gordon 1996:55-89; Rutsch et al. 1986:21-22).

The principal site types or landscape features associated with these forge tracts during the iron-producing phase included:

- bloomery and/or finery forges, including the short-lived Merritt Forge on former Denmark Forge property circa 1840;
- sawmills and gristmills at or near the Mount Pleasant and Denmark (Lower and Upper) forges;
- dams and ponds providing waterpower;
- raceway systems from the dams to forge, sawmill, and gristmill sites;
- a public house and a store near the Mount Pleasant forge;
- temporary charcoal kilns;
- roads linking the three forges to Dover south of the installation, to mines and furnaces at Mount Hope and Hibernia, and to charcoal forest tracts;
- probable blacksmith, carpenter, and other undocumented shops;
- homes for ironmasters and workers, often associated with stone walls and small fields, garden plots, or pastures;
- enclosed croplands, orchards, and meadows for hay or pasture in valley floor areas; and
- at least one cemetery.

There were several sites with more remote or undocumented links to the forge tracts, including two (2) reported 18th Century limestone quarries, which could have provided flux to the Mount Hope blast furnace (Rogers 1931:7). The Denmark Forge tract also included a mine operated during some of the mid-19th Century northeast and southeast of Lake Denmark (Hopkins 1867).

In the lower-lying portions of the Green Pond Brook drainage, installation construction and the building of Route 15 have altered most traces of forge farm landscape beyond recognition. The principal industrial components of the forge tracts during the period of iron manufacture have been buried or disturbed. In undisturbed areas, generally at higher elevations, some domestic and agricultural components survive as foundations or field walls, and traces of sawmill and charcoal kiln activities have also been found (Rutsch et al. 1986; Sandy and Rutsch 1992). Former forge farm components are generally not parts of an intact historic landscape, except perhaps in small areas around farmsteads. Any surviving industrial components must be considered as individual sites, within the contexts of Picatinny forge tract histories and of contemporary American site types. Predominant site types of this context are discussed below and include forges, forge waterpower systems, sawmills and gristmills, and charcoal kilns.

4.2.2.3 *Forges*

Forges are the most important but in many ways the least-documented historic industrial site types on the forge tracts, both in New Jersey and elsewhere in North America. Two principal, alternative forge functions were directed at the production of ductile, low-carbon wrought iron: the

direct reduction of iron ore to wrought iron in a bloomery forge; and the production of wrought iron from blast-furnace-made, high-carbon pig iron in a finery forge. The latter process required two major steps instead of one, and is referred to as an indirect process. Distinguishing bloomery forges from finery forges is often archaeologically difficult in the absence of documentary evidence. Bloomery- or finery-made wrought iron samples are not metallurgically distinct, and available information suggests much similarity in equipment and power supply. Both types of forges would include at least one hearth and one large power hammer, which descended on an anvil all of these enclosed in a stone-walled building. Shafts from (usually multiple) water wheels drove bellows supplying air to the hearth(s) through one or more pipes (tuyeres), and turned cam rings to raise hammers. Waterpower systems (e.g., raceways, flumes, and waterwheels of several possible designs) were most likely built around the exterior forge building walls. The differences between bloomery and finery equipment, while not fully documented, were probably sufficiently limited that conversion between direct and indirect processes was not difficult; a finery forge could also likely be used for bloomery operations. For areas such as the Highlands, limited available archaeological data suggest finery forges used two hearths- a "fining" hearth, or finery, to decarburize pig iron; and a "chafing" hearth, or chafery, to reheat the lower-carbon, more malleable iron prior to, and during, the drawing of wrought iron into bars under the hammer. Bar iron was the most common, commercially-useful product of bloomery or finery. The full range of hearth designs, and closely related variations in loading pig iron into a finery, remain unknown (Gordon 1996: 90-8, 126-8, 252; Schenck 1992; U.S. Steel 1957: 209-10).

In the 18th Century, bloomery operations could be established with less capital than a blast furnace, but a successful blast furnace could produce enough pig iron to supply a number of finery forges in addition to making cast-iron hollow ware or cannon. At least during peacetime, bar iron was a more valuable, exchangeable, and useful commodity than pig or cast iron, so a blast furnace operation was more commercially successful if it included a finery forge component. Although not yet fully substantiated, it is highly likely the Picatinny forges established circa 1749 began as bloomeries closely tied to local mines, and converted to fineries after the opening of blast furnaces at nearby Hibernia, Charlotte Furnace, Split Rock and Mount Hope circa 1760-1772. At different times between 1778 and his death in 1799, John Jacob Faesch managed some or all of the forges as part of an integrated iron manufacturing operation with the Mount Hope mine and blast furnace. During the 19th Century, these forges were evidently operated separately under numerous owners, some of whom controlled other local iron interests. Documentary evidence from the Mount Pleasant property indicates the 19th Century forge work there involved continued wrought iron production. It is assumed, again without full documentation, the forges continued to operate as fineries. Pig iron, ore or other 19th Century metal sources for the forges have never been specified, and could have varied widely as transportation networks grew and local blast furnace operations fluctuated. In addition to local pig iron, the forges could have used scrap to create new bar iron, and/or used ore for some bloomery operations. It is also unknown if any of the forges partook of 19th Century process improvements adapted at Adirondack-area bloomeries and elsewhere, such as the pre-heating of the air blast with hearth waste heat (Gordon 1996:94-96; Morrell 1996; Rutsch 1999; Rutsch et al. 1986:42-67, 134-41).

4.2.2.4 *Forge Waterpower Systems*

At the three (3) major Picatinny forge sites, 18th Century creation of ponds large enough to power forge and nearby sawmill or gristmill equipment would have required substantial dams. Nineteenth Century maps show the three ponds as large landscape features. While Green Pond Brook valley terrain may have allowed for relatively short dams at meadow locations, the forge dams were probably rather high (10 to 20 feet [3 to 6 meters]) to create these sizable impoundments. Existing summaries of historic data do not include any documentation of 18th Century or 19th Century dam construction. The most likely dam designs were timber-framed structures filled with rock and earth, possibly set on log or pile footings. Timber framing could have taken the form of notched-log boxes or cribs, or series of triangular log or timber frames tied to sills set perpendicular to the brook's flow (e.g. James Leffel & Co. 1881). Below the dams, raceways carried water to and away from prime movers of undocumented designs. Channel features below the dam at Picatinny Lake, once the power source for the Middle or Aetna Forge, suggest at least some of the raceways were stone-lined. All of the forges would have been powered initially by wooden waterwheels, although no information was available on whether any of these sites converted to metal turbines in the mid-19th Century.

The deep footings or excavations required for waterpower system construction at the forges make it likely some system remains could survive. Management of the forges on a common stream may have required coordination of water impoundment or release among forge operators, a topic which could be addressed by combining physical and documentary evidence, including identifying or inferring precise dam locations and elevations. In addition to associations with forge histories, forge dams, races, or waterwheels could be significant for broader understanding of American engineering history. Vernacular design of 18th Century and 19th Century water control structures, such as dams or bulkheads, appears to have varied widely, relative to site constraints, available construction material, and the builders' experience. Documentation of these variations remains at a very preliminary stage.

4.2.2.5 *Sawmills and Gristmills*

Waterpowered sawmills and at least one gristmill was associated with some or all of the Picatinny forge tracts at different times during this phase of iron manufacture. During the 18th Century and early 19th Century, these mills probably served largely to meet the needs of forge tract families, workers, and forge operations. By circa 1840, local forge operations were probably contracting in the face of larger anthracite-fueled puddling works making more bar iron at less cost than fineries or many bloomeries. The expansion of canal and rail networks, critical to anthracite iron development, stimulated Highlands ore production and contributed to the growth of home-building population centers. In response to these changes, forge tract owners shifted their sawmill operations to production and sale of lumber, mine and railroad ties, and barrel staves. Little is presently known about any changes in use at the Mount Pleasant gristmill, although the mill operated through at least the late-19th Century (Rutsch 1999).

The changing role and expanded scale of sawmill operations appears to have led, in at least one case, to construction of a new sawmill on Green Pond Brook in the Denmark Forge tract by circa 1850. The mill's location was far from the original site of waterpower use on this tract but closer to forest resources. Based on field observations and available information on 18th and 19th

Century sawmills, all known sawmills were waterpowered. Evidence for the deployment of more portable steam-powered sawmills, generally in use after the Civil War, was not available for mills on the forge tracts (Gordon and Malone 1994:60; Rutsch 1999; Sandy and Rutsch 1992:43-45). In the absence of superstructures, and given relatively abundant information on contemporary historic American sawmill equipment; any buried equipment remains from the mills are unlikely to survive with sufficient integrity to provide significant new information (Candee 1970; Englund 1982; Gordon and Malone 1994: 64-67, 75-76, 238-41; Penn and Parks 1975; Wilson 1977). Buried foundation remains could, however, include additional information on one or more episodes of vernacular site engineering associated with dam, tailrace, and mill construction.

As outlined above, sawmills built near the forges were associated with relatively large investments in dam and pond construction, designed to assure maximum water supply to the forges. Smaller-scale hydropower development associated with sites such as the Bruden sawmill were more typical of 18th Century and 19th Century sawmill developments. Although mill foundation and dam remains from such sites are widespread, there has been very little detailed study of hydropower and mechanical arrangements at these installations. Vernacular engineering decisions about site selection and improvement are very under-documented. Such decisions include the location and type of dam relative to drainage characteristics, the type and size of prime mover, and the arrangement of raceways or other landscape modifications to maximize captured mechanical power (Lance 1994). The smaller sites are generally poorly documented, and usually originated as single-dam installations without more extensive upstream storage systems. Generally established on streams small enough to control with limited dam construction, many sawmills lacked sufficient flow or storage to allow for year-round operations, which sometimes lead to the use of multiple ponds. The greater attention given to some larger complexes, including many with storage reservoirs has highlighted the limited hydrological or geological information available for decision-making until the second half of the 19th Century (Gordon 1985).

4.2.2.6 *Charcoal Kilns*

Charcoal kilns, and roads leading from them to the forges, would have been prominent parts of the forge tract landscape during the phase of iron production. These kilns were presumably used for more than a century while Green Pond Brook valley charcoal iron manufacture involved well-documented methods of manufacture in pits, or meilers, where colliers fired piles of wood covered with sod and charcoal dust (e.g. Gordon 1996: 34-37).

4.2.2.7 *Forge Tracts After the Period of Wrought Iron Manufacture*

The end of wrought iron manufacture at forges is not well documented but probably occurred between 1840 and 1870. As forge operations dwindled and ended, forge tract owners sold at least some of the small farmsteads once occupied by tenant workers. The Denmark Forge tract was extensively subdivided prior to establishment of the US Naval Powder Depot, with some tracts sold to prospective mine or forge developers. Since links often existed among ownership of forge and ore extraction sites in the Highlands region, mine development, or sale of mining rights, may have been another response of some forge tract owners to shrinking forge profits. At least three (3) 19th Century iron mines were opened or explored on or near the Denmark Forge tract, one

of which is on installation property. Known as the Denmark Mine, this site has remains of what are probably late-19th Century exploration pits, but probably lacks equipment or other significant evidence of mining technology (Perry 1996).

Forge tract owners also engaged in a variety of other strategies to secure income from their holdings. One approach involved off-site sale of renewable resources, beginning with sawmill products, as discussed above, and probably continuing with ice harvesting for shipment to growing metropolitan areas. Some of the sawmill sites or resources which opened during the period of wrought iron manufacture are likely to have remained in operation during this period, although no other sawmills are known to have opened after the forges closed. Ice harvesting, inferred from broader patterns of Highlands history, has not been documented for Picatinny. Ice harvesting sites could include remains of ice houses, short track sections from lakesides to ice houses, and wagon road connections from ice houses to main roads or rail stations in the Green Pond Brook valley. Although not likely to produce new information on such sites, remains of ice harvesting sites could provide new information on the late history of forge tracts (Rutsch 1999; Sandy and Rutsch 1992:48).

Elsewhere in the Highlands, some forge tract owners tried to develop their properties as recreational and residential assets, beginning as early as the 1830s. While there is as yet little documentation of this strategy among forge tract owners, Denmark Forge tract owners evidently participated in several such attempts. The Denmark Land and Improvement Co. tried to develop access to building lots around Green Pond, northwest of the installation, in the mid-1870s with a road up Green Pond Brook from the Denmark tract. This scheme failed, in part probably because of the lack of rail transportation anywhere near Green Pond Brook valley.

During the mid-1880s, after installation development was underway, the Morris County Railroad was built through the valley to serve the installation and mining operations further north. The Lake Denmark Hotel built at or near the forge site shortly before establishment of the Naval Powder Depot, was probably an attempt to take advantage of improved access (Rutsch 1999; Sandy and Rutsch 1992:45-46). The railroad, later part of the Wharton and Northern after 1905, was the only other civilian historic industrial development on the forge tracts. Remains of this system have not been systematically documented, but near Lake Denmark remains include intact alignment sections with retaining walls and other trackside masonry structures. Civilian railroad structures could provide new information about late forge tract uses, such as access for passenger, ice, or ore traffic.

4.2.2.8 *Military Contexts*

Fitch and Glover (citing Huston 1966: vii, 1990) outlined a national military context for the development of Army ordnance, storage, production, and associated facilities. Traditional usage defines Army logistics as consisting of four principal elements in support of military operations:

- 1) supply,
- 2) transportation,

- 3) evacuation and hospitalization, and
- 4) service.

Since ordnance and fighting equipment is part of supply, the Arsenal was placed within the Army's logistics component. In addition, Fitch and Glover (1990) outline the historical industrial development of the installation from the 1770s and place it squarely within technological and manufacturing advances in iron and later ordnance production industries:

Six (6) major arsenals were established by the Army between the end of the 18th Century and the early 20th Century. Structured as manufacturing facilities, the arsenals typically were operated under a small number of military staff. Most of the administrative personnel and all the production workers were civilian, providing continuity in operations. Prior to 1940, design or redesign of any piece of equipment might be undertaken by Washington or the arsenal. The first pilot was always built at the arsenal with the appropriate 'technical responsibility'. Basic research laboratories were maintained at every arsenal except Springfield and Watervliet. Each had an experimental unit, shops, and administrative division (Fitch and Glover 1990: Section 5.2.4).

Since World War II the mission of national arsenals has increasingly moved away from production and into research and development, except during times of conflict...Efforts have focused on future needs and improving present materiel. The Army uses its own laboratories, proving grounds, and test facilities, in conjunction with industry and civilian institutions ... In the 1950s and 1960s, whole new families of weapons and vehicles came into being, most notably the nuclear-powered rockets and guided missiles. Rapid changes have also taken place in conventional weapons....In recent years, research in nuclear power, laser, and computer weapons applications have expanded, in addition to ongoing testing of a variety of materials, explosives, and weapons types (Fitch and Glover 1990: Section 5.2.5).

Harrell (1996) describes two relevant methods for placing Picatinny itself into historical perspective or historic context (e.g. Thurber et al. 1984):

- 1) development context (geographical/functional) which discusses structures based on use;
- 2) temporal/historical context based on dates of changes in the installation's mission, such as:
 - a. Early Development as Powder Storage Depot (1880-1906);
 - b. Beginning of Production Facilities/WWI-Era Build-up (1907-1918);
 - c. Research and Experimentation;
 - d. 1926 Explosion;
 - e. Post-1926 Explosion Reconstruction (1926-1937);
 - f. Mobilization for WWII (1938-1945); and
 - g. Accommodation of Personnel.

In September 1880, the U.S. Army established the Dover Powder Depot under the command of Major Francis H. Parker. Renamed the Picatinny Powder Depot, the installation's

initial purpose was the storage of "powder, projectiles, and explosives, both for reserve supply and for issue; also for the preparation and issue of these stores" (Rogers 1931: 53). Later in June 1891, 315 acres (126 ha) of Picatinny Powder Depot land near Lake Denmark were ceded to the Navy for the establishment of another powder depot. Historical development has been concentrated in the areas south and east of Picatinny Lake (Harrell 1996; Rogers 1931:29-31, 58-61, 77).

The initial phase of development covers the Depot/Storage period from 1880 until 1907, when powder storage and increasing involvement in the assembly of cannon charges were installation's primary mission. A major change in the installation's mission occurred in 1907 with the construction of the first Army-owned smokeless powder factory. This activity resulted in the redesignation of the depot as Picatinny Arsenal, and marks the beginning of the manufacturing phase, which continued until the early years of World War II (Fitch and Glover 1990: B- 168-169; Klein et al. 1986:2-13; Rogers 1931:54-55). By 1913, the installation was operating a plant for the manufacture of Explosive "D", which was used in armor piercing projectiles.

During World War I, the installation saw a rapid development not only of its physical plant around Picatinny Lake, but also of its capacity as a research and administrative installation. The installation staff provided technical assistance to the private sector producing explosives for the war effort. During the 1920s, munitions experimentation and training had replaced powder production as the installation's mission, foreshadowing the later expansion of the facility into a complete ammunition arsenal (Fitch and Glover 1990: B-170; Harrell 1996:7; Rogers 1931:54-55).

While Picatinny Arsenal was transforming into a center for explosives research and development, the Navy's Lake Denmark installation remained a powder depot. On 10 July 1926, lightning struck the Lake Denmark Powder Depot, causing a series of fires and explosions. The explosions killed 19 people, including 11 Marines fighting the fires, and sent shock waves throughout the Green Pond Brook valley, destroying everything within 3,000-foot (915-meters) of the epicenter (Fitch and Glover 1990: B- 171-174; Klein et al. 1986:2-13; Rogers 1931:Chapter IX). A Naval investigation of the incident led to changes in safety and ammunition storage procedures and standards. The Army's own investigation led to a major overhaul of the Arsenal's facilities as the installation was enlarged for the purpose of consolidating the Army's ordnance activities in northern New Jersey. Plans for rebuilding the Arsenal, devised with the safe handling of explosives as a top priority, called for dividing the installation into zones based on function or activity (Fitch and Glover 1990: B- 174-176; Klein et al. 1986:2-14; Rogers 1931:94-96).

Between 1927 and 1937 both the Navy Powder Depot and Picatinny Arsenal were completely rebuilt. With rehabilitation nearly complete in 1931, Picatinny became not only the major ammunition arsenal of the Army but was an important center of ammunition research, development and manufacturing (Fitch and Glover 1990: B- 177-180; Harrell 1996). While expanding production capabilities to meet the munitions requirements of World War II, the installation continued to conduct research on tetryl manufacturing and nitrocellulose powder.

During the Cold War, Picatinny remained a center for research and development for new weapons systems and advances in the production process. Innovations increased and included the development of photoflash cartridges and bombs, the study of plastics and adhesives in the

packaging of ammunition, the research on warheads for the Nike nuclear missile and other missile programs, and the production of a tank-piercing rocket for the 3.5-inch bazooka and an atomic shell for the 250 mm gun (Fitch and Glover 1990: B- 182-184).

In 1948, the Lake Denmark depot became home to the Navy's east coast rocket engine test center. The facility was called the Naval Aeronautical Rocket Laboratory, but was renamed NARTS in April 1950. The NARTS was established for the testing and evaluating of "rocket engines, components and propellants, and training service personnel in handling, servicing and operating rocket engines" (Department of the Navy 1997). The Navy subcontracted with private industry to accomplish these goals. Founded in 1941, Reaction Motors, Inc. (absorbed by the Thiokol Corporation in 1958) was one of these companies and their work led to the development of both the XLR-II and the XLR-99 engine. Tested at Lake Denmark, the XLR-99 liquid rocket engine was the first large, throttle-able, restartable liquid propellant rocket engine. The XLR-99 was used for the X-15, the experimental hypersonic aircraft, and a preliminary design for the Space Shuttle called for its use (Department of the Navy 1997; Harrell 1996:8; Jenkins 1996:9-11, 40; Nolte et al. 1999; Picatinny Historical Office 1984:23; Thiokol Corporation 1997). Later decommissioned by the Navy, the Lake Denmark installation reverted to Picatinny Arsenal in August 1960 enlarging the installation to its present size.

By 1977, most production of weapons and ammunition had ceased at Picatinny and its activities focused on research and development. The installation's primary mission is research, development and engineering of munitions and weapons. Past operations and waste management practices led to contamination throughout the installation, and it was placed on the National Priority Listing for Federal Facilities; as a result safety and unexploded ordnance clearance zones in specific areas also exist and need to be considered during any development activities. Currently, 793 buildings are spread out over the installation's nearly 5,850-acres making it "the largest Army installation devoted solely to research and development" (STV/Lyon Associates, Inc. 1994:1.2.2).

4.3 ARCHAEOLOGICAL SENSITIVITY MODELING

Predictive modeling for estimating archaeological sensitivity can be very useful for master planning and overall developmental planning. The avoidance of Cultural Resources and/or potentially costly site mitigation procedures is in the interest of both developmental planners and preservationists. Models have been developed and/or applied to Picatinny by Fitch and Glover (1990), WES (1996), and most recently PCI (Schiepati et al. 2000, 2003; Smith et al 2008).

4.3.1 *Fitch and Glover Model (1990)*

The sensitivity for the occurrence of prehistoric archaeological sites has been discussed previously by Fitch and Glover (1990), who were guided by historic contexts developed for archaeology in the New Jersey state plan for Cultural Resource Management (Chesler 1982), existing information for the Highlands region derived from the New Jersey state archaeological site files, and previous archaeological surveys (Klein et al. 1986; Rutsch et al. 1986; Rutsch and van Voorst 1991; Sandy and Rutsch 1992).

Fitch and Glover divided Picatinny into “zones of relative archaeological sensitivity” (1990:12) using environmental characteristics; degree of ground disturbance; and the presence of known Cultural Resources within or in proximity to the arsenal as predictive attributes. Environmental characteristics include geomorphology (e.g. slope), drainage patterns and soil type. The degree of ground disturbance includes natural and cultural causes and is divided into three (3) categories of criteria: minimal, moderate and severe disturbance. The presence of known Cultural Resources is applied to the model as either present or unknown for both historic and prehistoric sites. Criteria from all of the attribute categories were assessed to match either “high, moderate or low” archaeological sensitivity ratings (zones) using previous empirical observations (i.e. sites tend to occur near sources of fresh water) as determining factors for the model (Table 4.1).

Attributes	*Attribute States (the presence of one attribute state does not necessarily determine the states of other attributes)		
	<i>High</i>	<i>Moderate</i>	<i>Low</i>
Distance to water/wetland	adjacent, <150 m	150-300 m	>300 m
Slope	minimal, 0-3%	moderate, 3-15%	steep, >15%
Soil texture	sandy	gravelly	very gravelly
Soil drainage	well-drained	fair drainage	poor drainage

Table 4.1. Environmental characteristics for archaeological sensitivity.

Recorded historical demography of the region and reported prehistoric sites in the vicinity of Picatinny make the “presence of known Cultural Resources ” sensitivity attribute a constant in the Fitch and Glover model (1990). “Environmental characteristics” and “degree of ground disturbance” were then the sensitivity assessment variables for both historic and prehistoric sites. Their observations of attributes were conducted during “drive over/visual inspection” of non-restricted areas. Fitch and Glover (1990: 15) assigned low, moderate and high archaeological sensitivity ratings “identified” as zones at the facility relative to the ecological context and land use history.

4.3.2 Waterways Experiment Station (WES) Model (1996)

“Archaeological sensitivity” is defined by WES as “the probability that a significant occurrence of the archaeological record may occur in a part of the landscape, defined as a conceptually homogeneous ‘zone’” (1996: 77). This archaeological sensitivity predictive model is similar in design to Fitch and Glover (1990). Both models emphasize the importance of environmental and geomorphological factors. Geomorphic investigation provides three (3) types of information for estimating archaeological sensitivity: first, the critical landscape position and uniqueness of the archaeological site setting can be determined from the geomorphic analysis; secondly, the environmental context of the known archaeological record may be determined from geomorphological information; and thirdly, important level of information provided by geomorphic investigation is the potential integrity of the archaeological record due to the actions of natural geomorphic processes (1996: 66).

Site selection factors were represented within a GIS database, and used to estimate the

geographic distribution of the sensitivity and its overall factor(s). Site selection factors considered by prehistoric cultures include natural hazards (e.g. floods, landslides), natural resources (e.g. plants, water, animals, and lithics) and landscape (e.g. accessibility and mobility, slope, drainage, landform diversity, and landscape position). Additionally, site drainage factors combine a number of site attributes and GIS data. Hydrologic and geomorphic data from the GIS database were used to consider the significance of floods as a natural hazard to site establishment by previous inhabitants. Mass failures of soil and rock affect the landscape after site establishment. Thorough vegetation data from the GIS database are also included in the archaeological sensitivity model proposed by WES.

Vegetation type, distribution, and abundance were undoubtedly one of the most important natural resources considered by prehistoric cultures in resource exploitation strategy. The importance of vegetation also involves its influence on the occurrence of wildlife habitat. Accessibility to a variety of natural resources was evaluated on the basis of landscape position (e.g. landforms immediately adjacent to different resource communities). Also, water for drinking and other activities has proven to be one of the most important factors in the location of prehistoric sites (WES 1996: 77-80).

The model presented in WES (1996) is also similar to Fitch and Glover (1990) with the inclusion of existing information regarding the history/prehistory of the installation. A review of existing information covering various periods in Picatinny's history/prehistory was conducted. Cultural periods covered include: prehistoric, historic, agricultural settlement period, structural development period, and the arsenal developmental period. Historic period maps, transportation systems development, and ongoing CRM investigations were also included in this part of the WES investigation.

WES divided Picatinny into "archaeological sensitivity zones" defined by landscape criteria in the GIS database, cultural history of the land occupied by the installation, and estimated land disturbance (Table 4.2). The archaeological sensitivity zone classifications include: very high, high, moderate, and low. Archaeological Sensitivity Zones classified as "very high" are zones where the possibility of the occurrence of a significant element of the archaeological record exists for both surficial and buried proveniences.

Land disturbance is another important element included in both the WES (1996) and Fitch and Glover (1990) archaeological sensitivity predictive models. Land disturbance can negatively impact site integrity and preservation, and may negate geomorphological and historic importance through destruction. According to WES, almost the entire occupied and used land surface of the installation has been disturbed by historic activities (e.g. plowing at most of the non-upland surfaces and significant disturbance from various land-use activities). "Highly Disturbed" areas are generally characterized by subsurface soil disturbance to depths, which likely exceed 50 cm [~20 inches] (e.g. gravel pits, fill, urban land, and "made" land). Areas delineated as "Moderately Disturbed" generally will have soil disturbance to depths greater than 30 cm [~12 inches] and less than 50 cm [~20 inches] (this classification is primarily assigned to the golf course; WES 1996:82-83). Overall, the "archaeological sensitivity zones" are relative for Cultural Resource Management issues and do not predict the amount of cultural material in a given area. The

classifications rather indicate the likelihood of encountering prehistoric cultural artifacts in an area with respect to the rest of the arsenal. WES (1996:84) cautions, however, “the archaeological sensitivity and land disturbance information is meant to serve as a guideline for planning Cultural Resources Surveys, in particular where to focus efforts and where *to look in detail at the subsurface*” (emphasis in original). Developmental planners can use the sensitivity classifications/zones to lower the likelihood of Cultural Resource impact and avoid potentially costly construction delays.

On the surface, both the Fitch and Glover (1990) and WES (1996) sensitivity models appear to be objective and scientific; however, both are intuitive models and neither study presents data to support the assumptions on which the models are based. These assumptions are weak due to their arbitrariness. Fitch and Glover (1990) use distance to water, slope, soil texture, and soil drainage to power their model. Despite the intuitive reasonableness of these variables, no evidence is presented to demonstrate the models are relevant to prehistoric settlement of Picatinny. For example, an examination of the distance to water variable reveals its presumptuous application to settlement patterns. The hydrology of the Picatinny valley has been drastically altered over the past 150 years by both European-American settlers and the Army (both Picatinny Lake and Lake Denmark are man-made). Therefore, the use of this variable to predict prehistoric behavior is tenuous, at best. The use of the variable as discrete when it is more likely continuous is also troublesome. For instance, a location 149 m (490 ft) from water is highly sensitive, but one two (2) paces farther is not. It appears most locations in the valley are within a reasonable distance to water. The use of slope suffers from the same limitations despite the fact its use must, in some way, be valid. The use of slope also suffers from scale and measurement problems. Level terraces on relatively steep slopes may be ideal camp locations but are not discernible on most maps of the area. The use of the two soil variables, texture and drainage, appears baseless. While it is unlikely prehistoric peoples would have camped in muck, all other areas are dependent on season. For example, in high summer, it is reasonable to assume fairly drained soil and well-drained soil would be indistinguishable to someone scouting a camp location.

Sensitivity Zone	Factors Considered	GIS Data Layer
Very High	Avoidance of floods; maximum accessibility to natural resources; high mobility and landscape diversity; good site drainage; high preservation potential for buried artifacts	<i>Geomorphology layer - colluvial apron and lacustrine delta areas</i>
High	Preferred landscape settings, accessible to natural resources; general absence of floods and natural artifact destructive processes	<i>Geomorphology layer - upland stable and intermontane valley; Surficial Geology layer – areas of surface boulders</i>
Moderate	Preferred landscape settings; limited lithic resources; general absence of floods and natural artifact destructive processes	<i>Geomorphology layer - upland stable and intermontane valley; Surficial Geology layer – areas other than surface boulders</i>
Low	Areas of poor landscape mobility and diversity; most limited natural resources; susceptible to natural artifact destruction	Areas classified as other than very high, high, moderate, or disturbed
Moderately Disturbed	Areas of significant ground disturbance (grading, filling) may still contain some undisturbed prehistoric cultural resources	<i>Wetlands layer - golf course</i>
Highly Disturbed	Areas of major ground disturbance; not likely to contain undisturbed prehistoric cultural resources	<i>Soils layer - made land, sand and Rockaway Complex gravel pits; urban land; Wetlands layer - fill, man-made structures; Surficial geology layer - artificial fill, trash/fill</i>

Table 4.2. Rationale employed by WES for archaeological sensitivity zones (WES 1996: 82).

The WES (1996) model suffers from many of the same drawbacks as the Fitch and Glover (1990) model. Many of the variables used to power the WES model are binary, and the condition is either present or not. The model is also additive in the greater the number of desirable characteristics present at a particular location, the higher the sensitivity rating. The use of variables in this way (binary and additive) are a function of the use of GIS layers since, without cumbersome statistical manipulation, it is the only way the data can be used.

The WES model also relies on present vegetation patterns. In many cases, these patterns may be so different from the patterns that existed a thousand or even a hundred years ago as to be irrelevant. The WES emphasis on geomorphological variables has less to do with their validity than their availability. An area's soil drainage or its tendency to erode or occasionally flood are

not very useful when attempting to predict the locations of short-term camps; probably the most numerous site type in the valley.

Finally, both models over-stratify sensitivity. The difference between a highly sensitive zone and a very highly sensitive zone has little meaning for the archaeologist and none for a project manager or CRM. For a model to be useful in a Cultural Resource Management context and within the framework of NHPA Section 106 and NEPA review, the model must tell the project manager what is required for a particular location that will be impacted by a project. An archaeological survey conducted in a highly sensitive location will be no different than one conducted in a very highly sensitive area (or even a moderate area). Archaeological reconnaissance surveys are designed to find sites or verify disturbances that preclude the survival of sites. The intensity of the survey is not, and should not be, adjusted based on the “degree” of sensitivity. In conclusion, an area is either archaeologically sensitive or not.

4.3.3 *Panamerican Consultants, Inc. (PCI) Model*

To produce a model having the maximum utility for the project manager and/or CRM, land at Picatinny was placed into three categories: sensitive, potentially sensitive, yet disturbed, and not sensitive (i.e. disturbed, steep slopes, former wetlands, etc.; Schieppati et al. 2000, 2003). This classification allows the CRM to determine if a survey is necessary, and if necessary, what kind of survey should be conducted. *All sensitive and potentially sensitive, yet disturbed areas* impacted by an installation undertaking will be subjected to a standard archaeological reconnaissance survey to verify the sensitivity and then subjected to a Phase IB survey if there are areas found to be undisturbed (Section 5.2.1). All other areas will not require a survey, but may still have a need of visual verification by the CRM for clarification and NJ HPO consultation purposes prior to development.

Overall, 152 areas considered archaeologically sensitive were field inspected by reconnaissance survey to determine the likelihood of Cultural Resource preservation, feasibility of survey and testing, and to recommend appropriate field testing methodology for each sensitivity area (Schieppati et al. 2000, 2003; Smith et al. 2008; Figures 4.1 A - C). (Note: The GIS shapefile metadata sets for archaeological sensitivity depicted in Figures 4.1 A – C are also being given to NJ HPO to assist in their Cultural Resources Geographic Information System Pilot Initiative.) Since 1997, PCI has conducted archaeological field investigations within thirty (30) of these sensitivity areas, or portions thereof, to test predictive sensitivity models and disturbance assessments previously applied to the installation (Fitch and Glover 1990; WES 1996; Schieppati et al. 2000, 2003; Smith et al. 2008). (To note, these numbers differ from PCI’s 2003 model due to recent revisions and survey total estimates projected with the CRM). These numbers include areas reconnaissance surveyed but not officially tested due to UXO (safety) concerns. UXO anomaly avoidance is required with each survey due to safety concerns with the 1926 explosion arc and active test range areas.

By and large, Phase I surveys have supported these sensitivity models. Approximately 2,050 acres (across 152 areas) have been identified as sensitive and/or potentially sensitive, yet disturbed. This field strategy has been designed to locate all prehistoric and historic resources

within each sensitivity area inspected. Additionally, there may be some potential for archaeological deposits in areas identified as disturbed as the overall extensiveness and severity of disturbance across the installation has been estimated within the sensitivity models, therefore visual verification by the CRM for clarification and NJ HPO consultation purposes prior to development should occur.

In conclusion based on these models and other study's (Section 4.1), potential archaeological site (PA-00) numbers have been assigned by refining earlier cartographic compilations of likely archaeological site locations (Appendix D). These compilations result in over 100+ potential archaeological resource locations identified through documentary sources and field archaeology across the installation. These potential Cultural Resources include, but are not limited to, prehistoric camp sites and/or lithic scatters, historic farmsteads, dwellings, forge related areas, and early Arsenal development. These locations and their immediate vicinities are archaeologically sensitive. To note, while useful for preliminary planning, mapping prepared for the WES study (1996) did not rectify all cartographic differences among different sources showing similar sites. As a result, some PA-sites are mapped at more than one location; therefore, this data may be subject to revision or more detailed specifications based upon future archaeological fieldwork. Additionally, historic maps frequently include inaccuracies, and rarely show sites or structures at the same locations, and knowledgeable local informants provided previously unreported data on a small number of the mapped sites (Malone., Raber, and Parkhurst 1991; Perry 1996; Rutsch 1996). In general, extensive development across the installation may have buried reported sites, and considerable disturbance has been documented at many locations. Although in the absence of additional information, most reported or probable site locations should be regarded as having potential remains that might include resources eligible for listing on the NRHP. These sites especially include:

- Sites PA-6 and 68 (the path of the Morris County Railroad/Wharton & Northern Railroad through the installation boundary);
- Sites PA-10, 10a, 10b (and 78; Mount Pleasant or Lower Forge Complex);
- Site PA-37 (Middle or Aetna Forge, a complex of iron forge and associated structures and potential workers' residences);
- Sites PA-61, and 62 and 62a (and 99; Denmark or Upper Forge and a potentially associated saw/gristmill);
- Site PA-57 (Denmark Mine, a poorly-documented mine, possibly opened and used briefly in late-eighteenth to early-19th Century);
- Site PA-65 (L. Bruden Sawmill, mid-19th Century waterpowered sawmill); and
- Site PA-86 (probable charcoal kiln).



Legend

Archaeological Sensitivity Model

-  Sensitive
-  Sensitive - Possibly Disturbed
-  Reconnaissance Survey Completed- UXO Concerns Remain- Not Tested
-  Survey Completed
-  WES Prior Archaeological Sensitivity Areas
-  Buildings
-  Stream/Surface Water
-  Water Body
-  Installation Boundary
-  Restrictive Easements

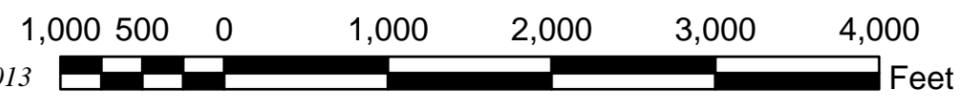
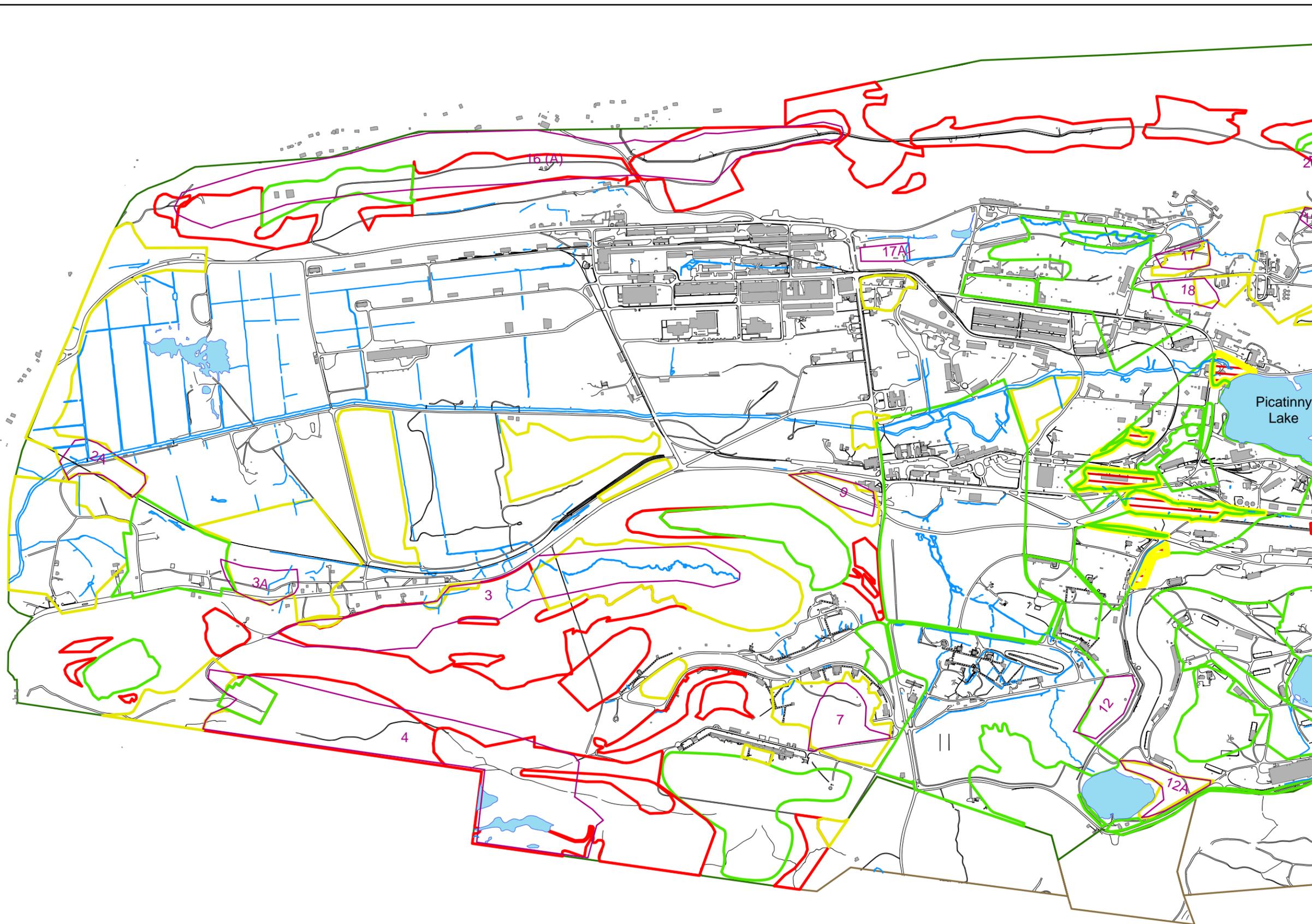
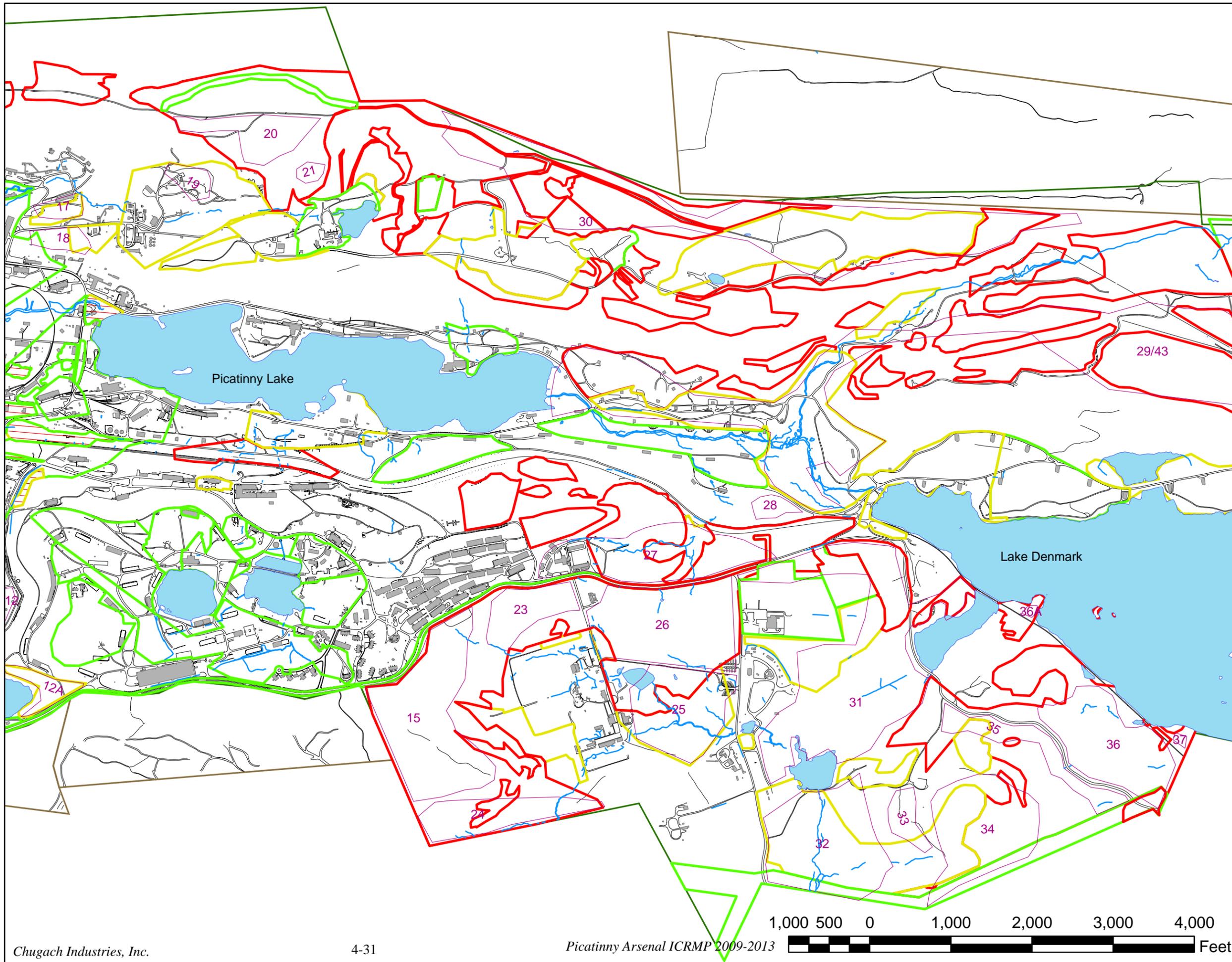


Figure 4.1a
Archaeological Sensitivity-
Southwestern Sections
of Picatinny.



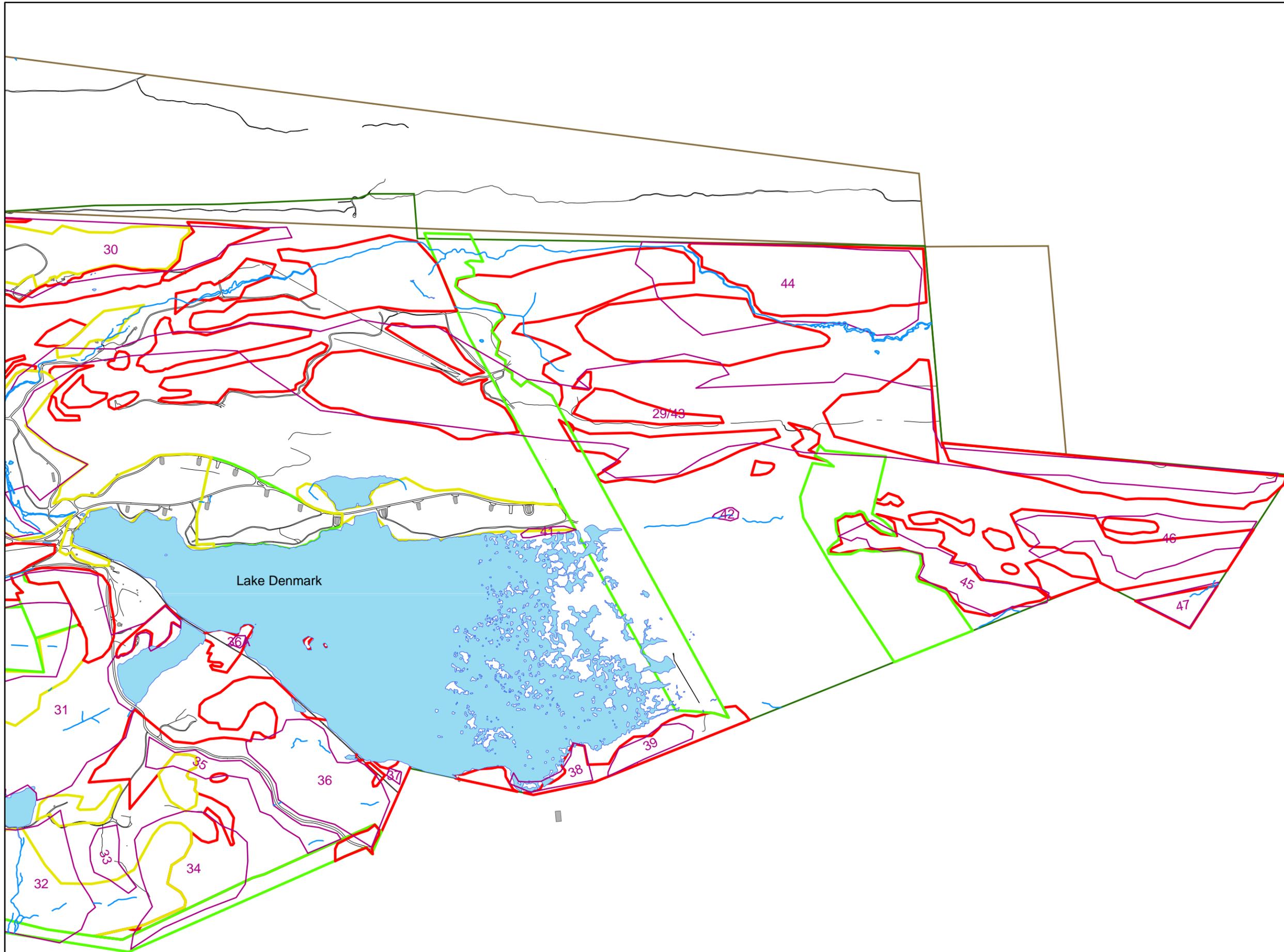
Legend

Archaeological Sensitivity Model

- Sensitive
- Sensitive - Possibly Disturbed
- Reconnaissance Survey Completed- UXO Concerns
- Survey Completed
- WES Prior Archaeological Sensitivity Areas
- Buildings
- Stream/Surface Water
- Water Body
- Installation Boundary
- Restrictive Easements

Figure 4.1b
**Archaeological Sensitivity-
 Central Sections of Picatinny.**





- Legend**
- Archaeological Sensitivity Model**
- Sensitive
 - Sensitive - Possibly Disturbed
 - Reconnaissance Survey Completed- UXO Concerns
 - Survey Completed
 - WES Prior Archaeological Sensitivity Areas
 - Buildings
 - Stream/Surface Water
 - Water Body
 - Installation Boundary
 - Restrictive Easements

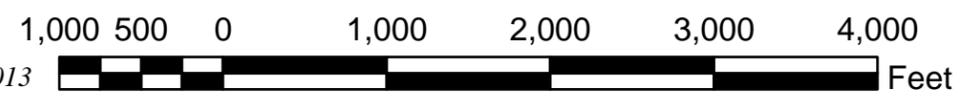


Figure 4.1c
Archaeological Sensitivity-
Northeastern Sections
of Picatinny.

This sensitivity model should be updated as additional surveys are completed. The flow chart presented as Figure 4.2 illustrates how this model can be further refined. Future input will include surveys conducted for particular construction projects as well as inventory surveys. It should be noted if practical future *inventory surveys* should not be conducted exclusively in areas that have been designated as sensitive, it could skew the resulting data causing a self-fulfilling prophecy with respect to archaeological sensitivity. Some portion of these surveys can be conducted in areas estimated as not sensitive. This is possible because many broad areas defined as sensitive will likely include smaller land areas designated, according to the model, as not sensitive. These areas can be examined in the course of the survey and the resulting data fed back to the model. This should be subject to budgetary consideration and case-by-case project specific practicalities.

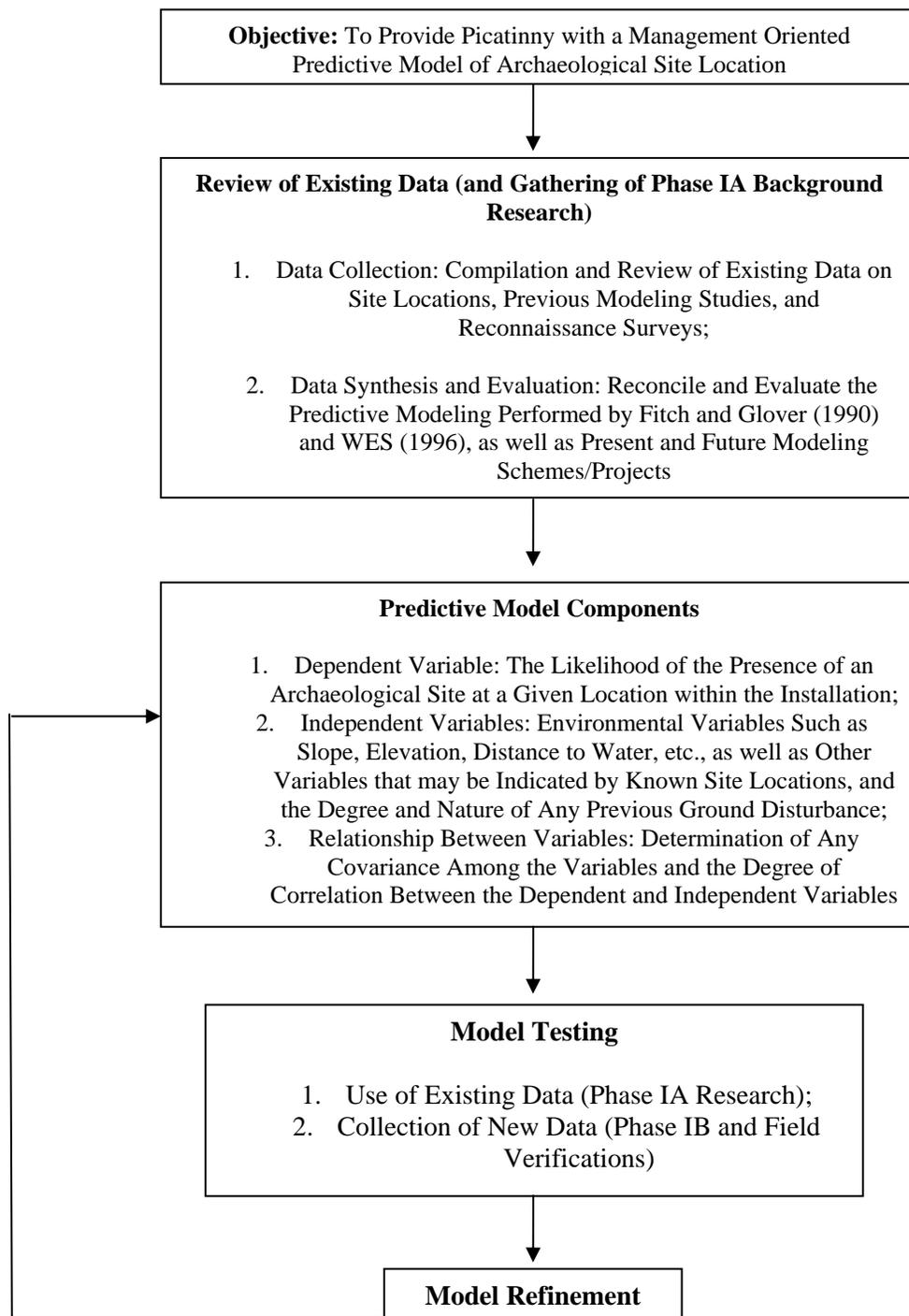


Figure 4.2. Flowchart depicting the development of an archaeological predictive model.

5.0 Cultural Resource Inventory and Data Gaps

This section addresses Picatinny's Cultural Resource inventory combining previously gathered data with new information and data gaps. These data sets are compared against future development and Master Plan undertakings, along with budgetary, compliance and management considerations for these projects.

5.1 IDENTIFIED CULTURAL RESOURCES

Prehistoric and historic period archaeological sites have been reported and identified at Picatinny. Full archaeological reconnaissance surveys have been conducted for approximately 629 acres of the installation (In chronological order: Rutsch, Sandy and van Voorst 1994 [in association with Rutsch et al. 1986; Rutsch and van Voorst 1991; Sandy and Rutsch 1992]; Nolte et al. 2000; Schieppati et al. 2000, 2003; Schieppati, Hanley, and Cinquino 2004a and b; Siegel, McVarish, and Tobias 2004; Hanley, Weber and Steinback 2004; Hanley, Steinback, and Nolte 2005; Siegel et al, 2006; Tetra Tech 2006 and 2007; Bianchi 2007; Smith et al. 2008).

5.1.1 *Cultural Resources: Prehistoric Sites*

Sixteen (16) prehistoric sites have been identified within the installation boundaries and assigned Smithsonian Site Registration Trinomial numbers and recorded with the NJSM:

- Site 28-Mr-275, lithic scatter, no larger than 50 x 150 ft (15 x 45.7 m);
- Site 28-Mr-276, 277, and 278, lithic scatters covering approximately 12-acre (4.8-ha);
- Site 28-Mr-280, lithic workshop/scatter or hunting camp less than 50 ft (15 m) in diameter;
- Site 28-Mr-281, area of small lithic scatters, approximately 200 x 250 ft (61 x 76 m);
- Site 28-Mr-282, collection of small lithic scatters across the southern extent of the same terrace occupied by 28-Mr-281. An unmortared stone fence, abandoned trail/road and a small stripped ditch are also in the vicinity of the site giving clues to possible early arsenal development (Schieppati et al. 2003);
- Site 28-Mr-284, isolated scatter, no larger than 50 ft (15 m) in diameter. This site was investigated to the Phase II evaluation level and determined not eligible for the NRHP (Schieppati et al. 2003);
- Site 28-Mr-285 and 286, lithic scatters, no larger than 50 x 150 ft (15 x 45.7 m) in size. These sites were investigated to the Phase II evaluation level and determined not eligible for the NRHP (Schieppati et al. 2003);
- Site 28-Mr-287, small lithic scatter, no larger than 50 ft (15 m) in diameter. Portions of this site were initially documented by Klein et al. (1986) through secondary sources;

- Site 28-Mr-314, large repeated logistical camp site dating to the Late Archaic or Early Woodland periods, along with charcoal samples dating to the Late Woodland period, 21.9 sq. m. Portions of this site were initially documented by Klein et al. (1986) through secondary sources. This site was investigated to the Phase II evaluation level and determined not eligible for the NRHP (Tetra Tech 2006 and 2007); and
- Site 28-Mr-330, 331, 332, and 333, could be seen as one large seasonally visited campsite. These Sites, especially Site 28Mr331, have evidence of multiple occupations dating back to the Middle, Late, and Terminal Archaic periods, and even potentially the Early Woodland period. Moreover, considering the general lack of flaked debitage and tool production materials compared to actual tools, ornamental implements, and food processing cultural resources, these Sites may have specifically visited during the transitory fall to winter seasons from more sizeable residential sites, when bird and prey were in hibernation for particular resource extraction resulting in their possible ceremonial relationship to surrounding natural features.

Also to note, previous reports have identified prehistoric artifacts at the historic Whitam Farm location destroyed during the 1926 Lake Denmark Depot explosion; isolated areas of prehistoric artifacts remain from this potential site (PA-104, P-2; Smith et al. 2008). Other prehistoric site areas may exist across the installation, however due to previous historic and Arsenal development, contexts may be disturbed.

5.1.2 *Cultural Resources: Historic Sites*

Eleven (11) historic sites have been identified within the installation boundaries and assigned Smithsonian Site Registration numbers and recorded at the NJSM:

- Site 28-Mr-265, Walton Family Graveyard/Hessian Cemetery dating to the 19th Century and possibly the 18th Century, may contain potential Hessian Revolutionary War prisoners-of-war burials. The Hessians had been conscripted into the iron industry labor force after capture by American forces during the Revolutionary War. The Walton Family Graveyard covers approximately three (3) acres (1.2 ha), but was not otherwise described in detail by Fitch and Glover (1990). In the past, this site has been recommended for inclusion in the NJ Register of Historic Places with future proposals to the NRHP (Lev Zetlin 1992: 2.6);
- Site 28-Mr-279, early- to mid-20th Century bottle/trash dump with domestic refuse, roughly 15 x 20 ft (4.5 x 6 m). An old fence line consisting of wooden posts (4 to 5 ft [1.2 to 1.5 m] high) spaced roughly 20 or 30+ ft (6 or 9.1 m) apart is less than 50 ft (15 m) east of the site. PA-31, the location of the pre-1887 J. Buckley structure, is reported to be immediately north of this location (Klein et al. 1986; WES 1996);
- Site 28-Mr-283, late 18th – to – early 20th Century domestic refuse scatter, possibly associated with the pre-1867 A. Walton dwelling illustrated in the vicinity on historic maps (Beers 1868; Hopkins 1867);

- Site 28-Mr-315, mid 19th – to - early 20th Century cistern, possibly associated with former historic structures and the Denmark mine (Tetra Tech 2006);
- Site 28-Mr-321, Palmer and Elliot Homesteads, and foundation remains of 5+ structures from farmsteads dating from mid 19th – to - early 20th Century and Site 28-Mr-322, Kitchell Homestead and foundation remains of five structures from farmstead dating from the mid 19th – to - early 20th Century, these sites were identified initially by Rutsch et al. (1986) in a survey for a planned electrical transmission line, and also have been recommended as potentially eligible for inclusion in the NRHP with SHPO Opinion dates of March 6, 1989 and July 13, 1995 (Rutsch et al. 1986:157);
- 28-Mr-323, two areas of enclosed stone fences measuring 46 x 33 ft and 66 x 56 ft, unmortared stone retaining walls, remains of a brick structure and a domestic refuse scatter dating to the mid-to-late 19th Century and associated with low intensity dumping and/or a potential animal pen for the Doland and/or Walton families;
- 28-Mr-324, mortared cut-stone foundation, mortared cobble chimney with clay flue, and a short brick column predating adjacent drainage ditches and possibly related to early Arsenal development (Smith et al. 2008);
- 28-Mr-325, 19th Century J. Buckley dwelling (PA-31a), domestic refuse scatter and four (4) historic features including stone fences, a cut-stone foundation, and a possible walkway (Smith et al. 2008);
- 28-Mr-326, 19th Century stone fenced enclosure and potential animal pen yard identified previously as site PA-26a and the Walton Farm. No historic cultural materials were found around the enclosure and the site is unlikely to yield additional information eligible for the NRHP (Smith et al. 2008; pending NJ HPO review);
- 28-Mr-327, PA-25/29, late 19th – to – early 20th Century domestic refuse scatter, possibly associated with the pre-1867 approximate location of the J. Brown dwelling (PA-29), or a structure associated with Mills, Doland, and Whiteham (PA-25). Both structures have been illustrated in the vicinity on historic maps (Smith et al. 2008).

Additionally, three (3) other historic archaeological sites have been reported by Rutsch et al. (1986), Fitch and Glover (1990: B-204), and other previous installation Master Planning documents (Lev Zetlin 1992): Middle Forge Complex (1749-1868+) - iron forge and settlement; Upper Forge Complex (1750-1868+) - iron forge and settlement; and a charcoal making site of an unknown historic time period. In the absence of additional information, these site locations should be regarded as having potential archaeological areas with buried remains that may include resources eligible for listing on the NRHP.

5.1.3 *Cultural Resources: Architectural Features, Structures and Historic Districts*

Architectural resources at Picatinny include buildings, structures, and features, including but not limited to all visible aspects of the built environment combining to form the installation's historic fabric, such as bridges and dams, sewage lift stations, playgrounds and court areas, cemeteries, parks and gardens, surrounding landscape and overall setting, etc (see also Section 3.3.1). Across the installation, approximately 75-80% of its architectural resources have been assessed for their NRHP eligibility.

During the early 1980s, DARCOM sponsored extensive research and documentation at Picatinny performed by the NPS, HABS/HAER Division for a large demolition effort within the Toxic Environmental Clean-Up Program (TECUP) and approximately 108 buildings. These efforts led to the preparation of extensive historic context statements with detailed inventory cards, drawings, and large-format black and white photographs of many arsenal resources, structures, and the installation's overall industrial processes and development, and in accordance with EO 11593 (Protection and Enhancement of the Cultural Environment; HABS/HAER 1982, 1985; Norman 1988; Thurber et al. 1984). These documentations were prepared in accordance with standards used to record NRHP-eligible resources prior to adverse effects projects sponsored or sanctioned by the Federal government.

WCH/Boston Affiliates then re-evaluated more than 520 structures as eligible for inclusion in the NRHP within a single installation historic district in 1994 (Harrell 1996). Subsequently in 1999, PCI completed a re-evaluation of 543 historic structures across the installation based on both NPS criteria and the incorporation of results from a number of DoD architectural reports concerning the NRHP status of various types of military structures (Nolte and Steinback 1999a, 1999b). Based on these re-evaluations, Picatinny was determined to lack sufficient integrity to form a single district; instead, five smaller areas, containing 125 structures, have since been recommended to be eligible as historic districts since 1999 (Guzzo 1999; Nolte 1998; Nolte and Steinback 1999a, 1999b, 2004a; Nolte et al. 1999; Nolte, Mahar, and Steinback 2007; Figure 5.1).

The first historic district is the Administrative and Research District encompassing the old and new general administration area on Farley and Buffington Roads, and "Chemistry Row" (Photo 5.1 and Figure 5.2). The Administration and Research District is architecturally united by the Colonial Revival style, and consists of 22 contributing and three (3) non-contributing buildings (Nolte and Steinback 1999b). (To note in particular, Building 154 was listed as 'within a district, but already in mitigation' for disposal and demolition when originally assessed for NRHP eligibility in 1999; however, this building is still standing [and in a fair condition] and has not been demolished since; in view of these factors, this building is considered non-contributing to the District, unless another determination proves otherwise [Nolte and Steinback 1999a, 1999b]).

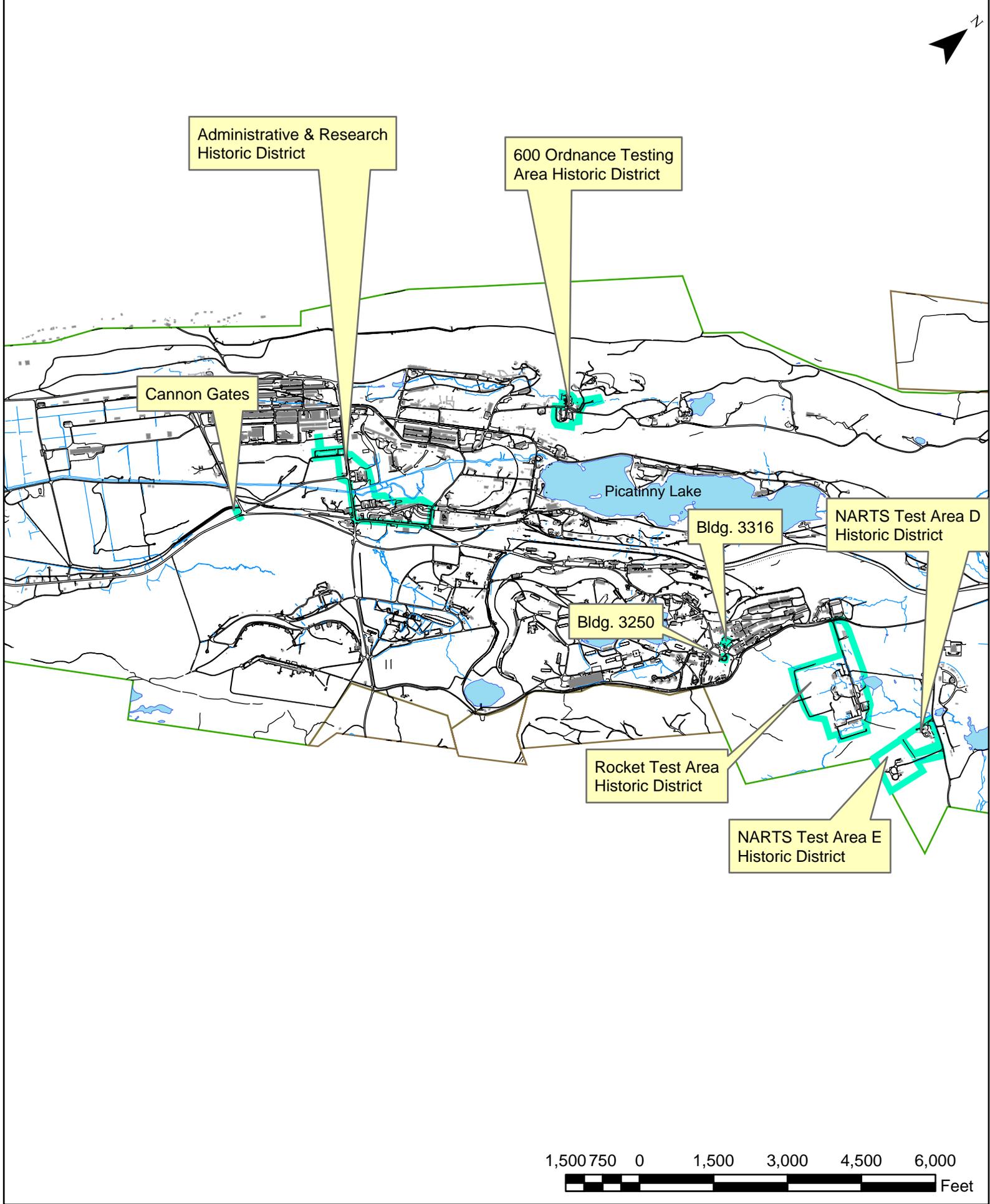


Figure 5.1. Individually NRHP Eligible Buildings and Historic Districts.



Photo 5.1. Portion of Administrative and Research Historic District displaying Buildings 162, 163, 164, and 167 along Kibler Road facing north-northeast.



Figure 5.2. Administrative and Research Historic District.

The second historic district is the 600 Ordnance Testing Area encompassing the ridge above Picatinny Lake (Photo 5.2 and Figure 5.3). This area consists of 27 contributing structures and four (4) non-contributing structures built to endure shock and blast effects of ordnance testing shortly after World War I (Guzzo 1999; Nolte and Steinback 1999b).



Photo 5.2. Overview of the 600 Ordnance Testing Area Historic District.



Figure 5.3. 600 Ordnance Testing Area Historic District.

The third historic district is Test Area E, NARTS, at the former Lake Denmark Depot (Photo 5.3, and Figures 5.4 and 5.5). The earliest work at NARTS, created in 1948 as the Naval Aeronautical Rocket Laboratory, was devoted primarily to liquid propulsion, but eventually encompassed a wide range of activities including the evaluation of rocket engines and rocket systems, development of methods for analyzing rocket propellants, and a collaboration with private industry on a wide range of experiments and safety manuals. The test facilities at NARTS were generally grouped into six test areas, two used especially by and for NARTS projects and the others leased to Reaction Motors, Inc. NARTS used Test Areas “D” and “E” and sometimes “G”. Test Area E was considered the “elite” among the many facilities at NARTS (US NARTS circa 1950). When the area first went into operation it was used for the testing of the X-15 power plant under a use-agreement contract with Reaction Motors. Test Area E district consists of two (2) contributing, and five (5) non-contributing structures (Nolte et al. 1999).

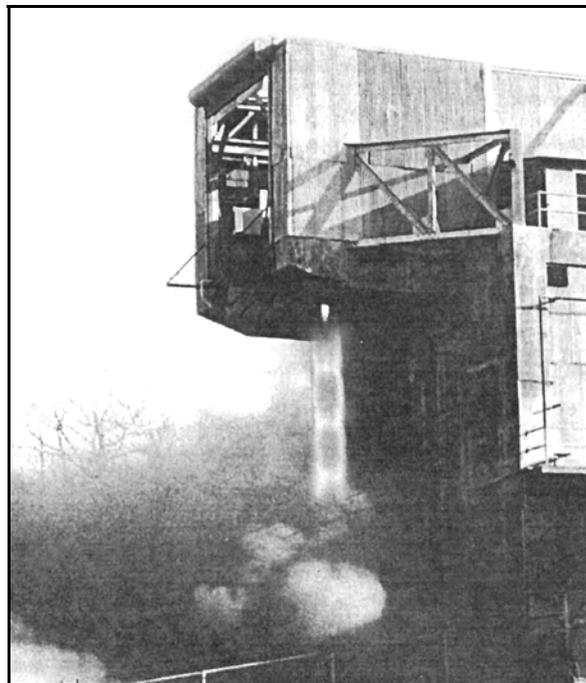


Photo 5.3. Test Stand E-1, Bldg. 3618 in action (RMI 1955; Nolte et al. 1999).

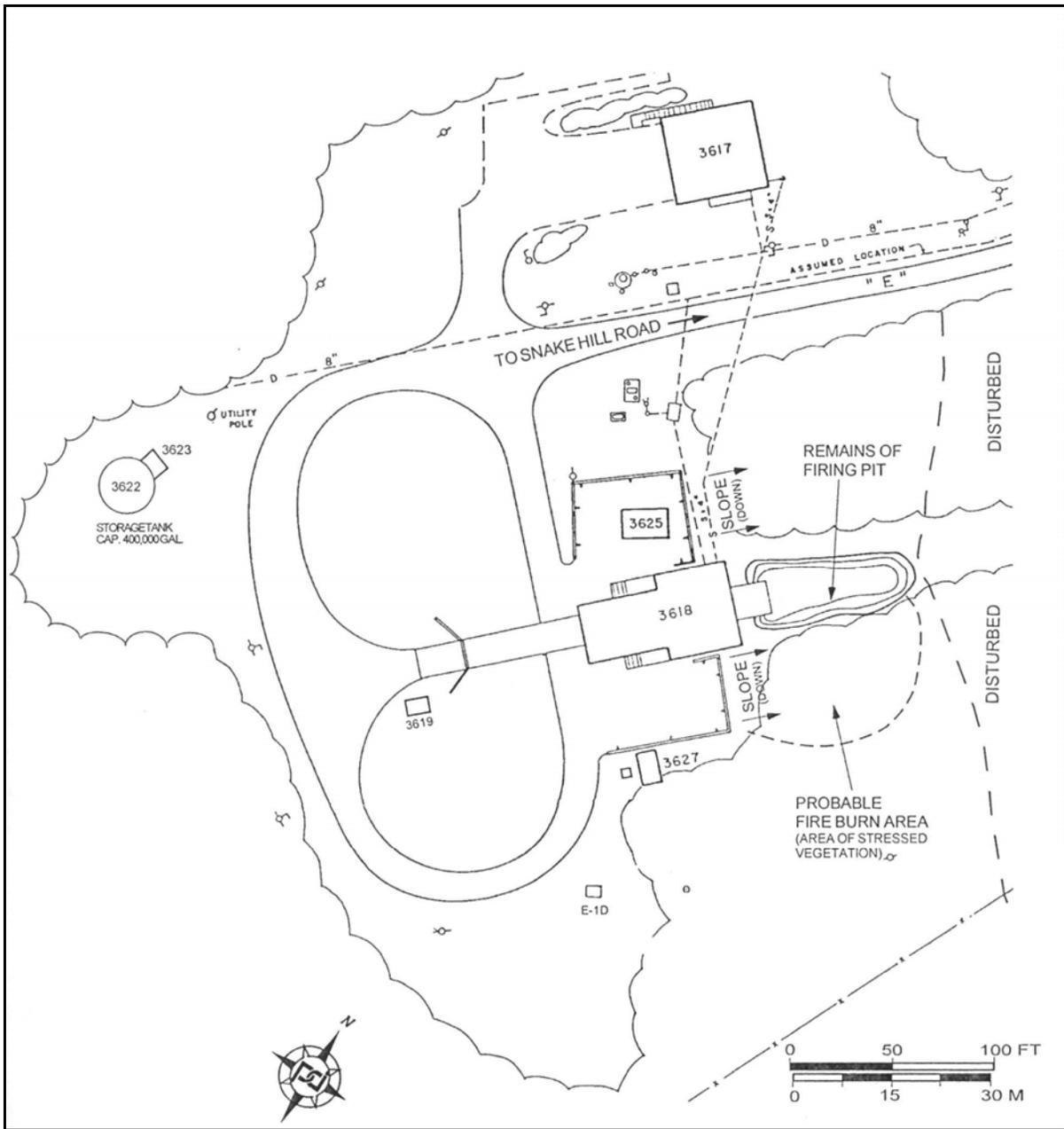


Figure 5.4. NARTS Test Area E (Nolte et al. 1999).



Figure 5.5. NARTS Test Area D & E Historic Districts.

The fourth historic district is Test Area D, NARTS, at the former Lake Denmark Depot (Photo 5.4, and Figures 5.4 and 5.6). Area D was “the epitome of the expression” of military, universities, and large private defense corporation relationships forged during and after World War II for research and development techniques resulting in high-technology weapons platforms and systems (Nolte and Steinback 2004a). The Area was used to test rockets, improve systems, and most importantly, to “create new programs for their [Navy] contractors and to check the[ir] work” (Nolte and Steinback 2004a). Test Area D district consists of eighteen (18) contributing, and two (2) non-contributing structures (Nolte and Steinback 2004a).

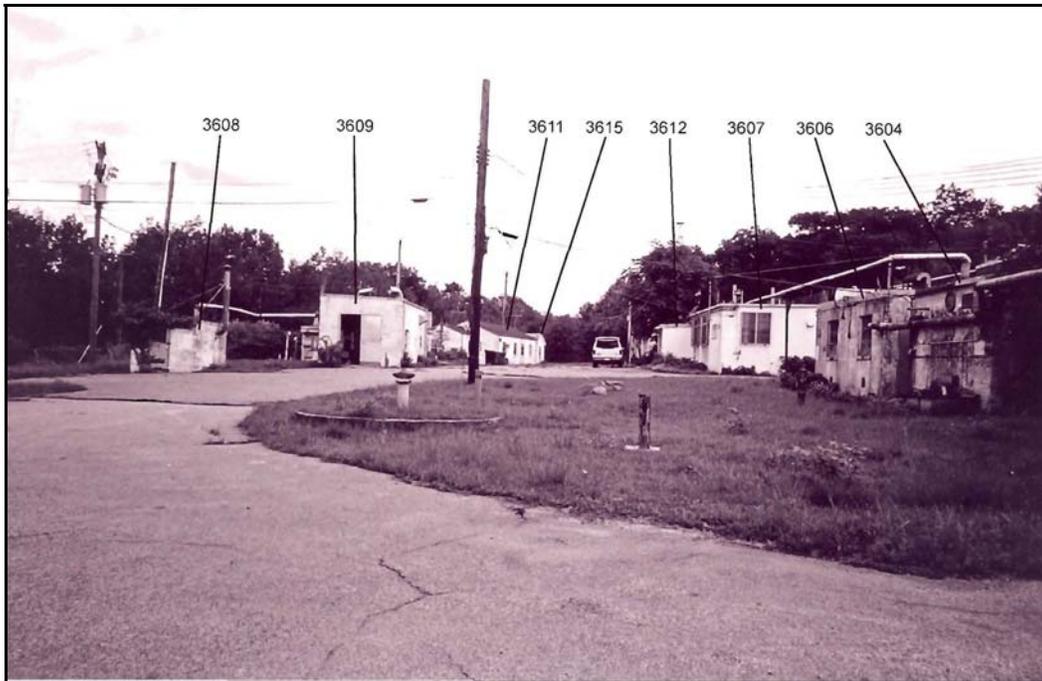


Photo 5.4. NARTS Test Area D depicting the locations of various buildings (Nolte and Steinback 2004a).

The fifth historic district is the Rocket Test (1500) Area (Photo 5.5 and Figure 5.6). This district consists of thirty-four (34) contributing, and seven (7) non-contributing structures that played a significant role in part of the US and Army’s “initial forays into space” developing programs and tests adapting rockets to accommodate nuclear warheads, such as the Honest John, Redstone, Little John, and Nike Ajax (Nolte, Mahar, and Steinback 2007).



Photo 5.5. Historical photograph of Bldg. 1506 (1954) and a portion of the Rocket Test Area Historic District, 1964 (courtesy of Bldg. 1501; Nolte, Mahar, and Steinback 2007).



Figure 5.9. Rocket Test (1500) Area Historic District.

Additionally, two (2) historic buildings and one (1) architectural fabric feature are individually eligible for the NRHP (Photo 5.6 and Figure 5.7). These resources are: Building 3250 constructed in 1890 and served as the Naval Commander's home; Building 3316 constructed in 1903 as a stable and later converted to a fire house; and the Cannon Gates, which were manufactured by melting down cannons and cannonballs at the Cornell, New York Ironworks in 1885 (Guzzo 1999; Nolte and Steinback 1999b; Photo 5.7, 2 pictures).

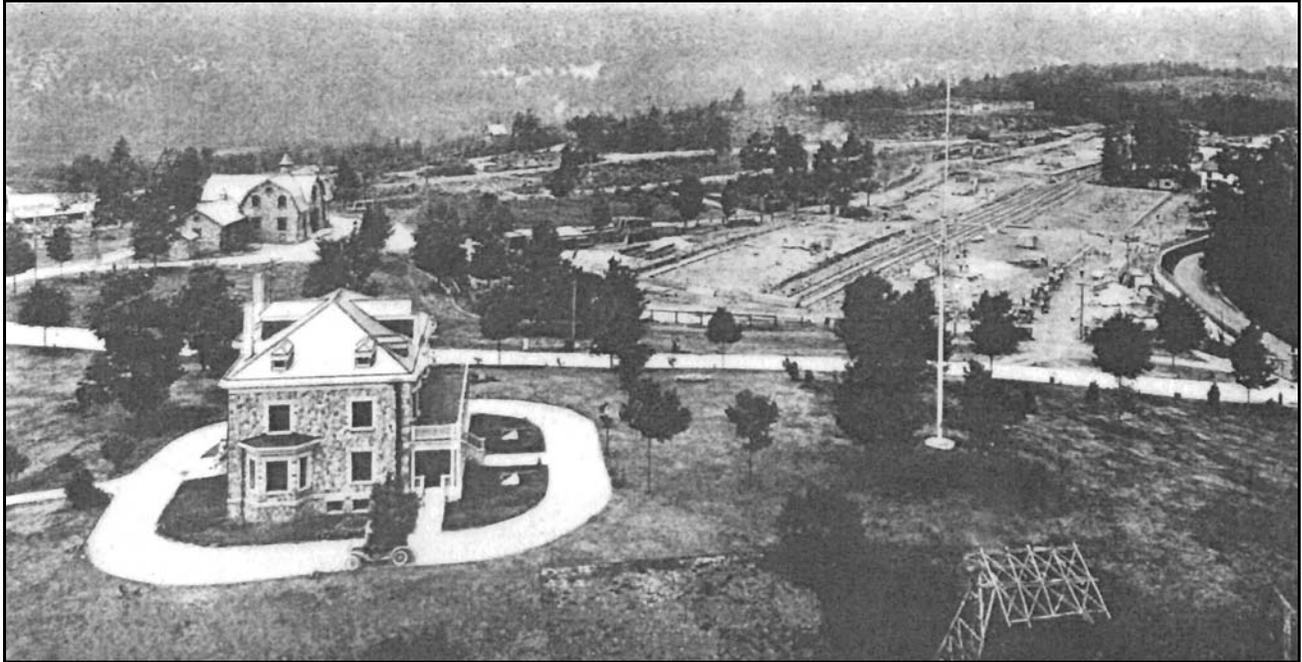


Photo 5.6. Historic circa 1925 overview of individually NRHP eligible Buildings 3250 and 3316 (background to left; courtesy of ARDEC Museum, n.d.).



Figure 5.7. Aerial overview map of individually NRHP eligible Buildings 3250 and 3316.



Photo 5.7. Circa 1900 and current photograph of the Cannon Gates, Parker Road, facing north and south, respectively.

In conclusion, there are a total of 28 identified archaeological sites, at least 109 (+/-) PA-Sites that may or may no longer exist depending on their previous level of investigation and surrounding disturbances, 105 historic structures (including contributing and individually eligible architectural resources), one architectural fabric feature, 5 historic districts, and 24 non-contributing structures (within historic district boundaries) (see Appendices D and E).

5.2 INVENTORY DATA GAPS

This section addresses the data gaps and preliminary background information for Cultural Resources and Historic Properties (see Appendices D and E).

5.2.1 *Data Gaps: Archaeological Sites*

Archaeological sites identified at Picatinny must be evaluated for NRHP eligibility by evaluating whether they have the potential to yield additional important information based on the data collected, the relationship to pertinent research questions, and the basic extent and integrity of the archaeological deposits (Criteria D).

Klein et al. (1986), WES (1996), Fitch and Glover (1990), and Schieppati et al. (2000, 2003) models' and study's assigned the PA-Site numbers displayed in Appendix D by each refining earlier cartographic compilations of likely archaeological site locations resulting in over 100+ sites being identified through documentary sources and field archaeology across the installation. All of these sites should be field verified through Phase IB archaeological surveys, and if found, evaluated by Phase II investigation for NRHP eligibility. Additionally, previous archaeological field surveys by Rutsch and Sandy (1994) should be reviewed for currency with NJ HPO and Secretary of the Interior Standards. If previous surveys do not meet current standards, then additional Phase I surveys, or other information as appropriate, should be obtained prior to any potential effects of activities in these locations. In general, extensive development at Picatinny may have eradicated or buried reported sites, and considerable disturbance has been documented at many locations. Although in the absence of additional information, most reported

or probable site locations should be regarded as having potential remains that might include resources eligible for listing on the NRHP.

Fitch and Glover (1990) followed the lead of Chesler (1982) in pointing out existing inventories of prehistoric archaeological sites are extremely limited due to lack of quality scientifically recorded information derived from previous systematic archaeological surveys within the Picatinny region. In many state planning processes, prehistoric archaeological resources are optimally considered on a regional scale. With this concept in mind, a variety of site types are discussed for each major segment (see also Section 4 and Appendix H).

Additionally, Klein et al. (1986) reported one (1) other prehistoric locus of surface finds disclosed through secondary sources. This locale should be investigated by Phase IB survey to determine if the site currently exists (PA-106/P-4). Phase II investigations should be conducted to determine NRHP eligibility for the remaining archaeological sites identified prior to developmental impact. More intensive survey data (typically acquired during Phase II-level investigations), which provide information on site boundaries, internal site structure, and chronology are necessary to resolve these issues.

Table 5.1 and Figures 4.1 a - c summarize the prehistoric archaeological sensitivity assigned to Picatinny prior to the 1997-2003 PCI sensitivity investigations. Initially, a total of 47 prehistoric archaeological sensitivity areas were identified by Fitch and Glover (1990) and based on distance to water or wetland, slope, and soil texture and drainage (Cinquino et al. 1996; identification and locational data of identified sites not discussed per AR, ARPA and NAGPRA regulations; Section 3.2.2). These prehistoric archaeological sensitivity areas have been joined into the most recent sensitivity area determination as applicable (Smith et al. 2008) to verify overall archaeological sensitivity and the need of archaeological investigations in an area; even areas appearing disturbed. Overall, the characteristics of potential prehistoric sites on the installation in terms of size, artifact density, activity types and the degree of logistical organization of the lithic technology would aid the interpretation of land use systems that include variable mobility strategies within cultures and people.

Area No.	Potential Prehistoric Property Types
2A	Seasonal hunting and gathering camps of any prehistoric period on a slight elevation above and adjacent to wetlands
3	Seasonal hunting and gathering camps of any prehistoric period on terraces overlooking the valley, near or bordering a small or intermittent stream
4	Hunting or gathering camps on high ground overlooking the valley, and near a swale, with particular sensitivity to Paleo-Indian period site occurrence
7	Hunting and gathering camps on a terrace adjacent to a drainage
9	Hunting and gathering camps on a terrace overlooking the valley
12	Hunting and gathering camps on a terrace overlooking the valley and adjoining a small stream/impounded lake area
12A	Hunting and gathering camps on a terrace adjoining a lake impoundment
15	Hunting and gathering camps overlooking the valley, with particular sensitivity to Paleo-Indian site occurrence
16 (A)	Hunting and gathering camps or rockshelters, upper elevations of mountains, with particular sensitivity to Paleo-Indian site occurrence
17 & 18	Hunting and gathering camps on a terrace adjacent to a drainage
19	Hunting and gathering camps, upper elevations of mountains, with particular sensitivity to Paleo-Indian site occurrence
20	Hunting and gathering camps or rockshelters, upper elevations of mountains, with particular sensitivity to Paleo-Indian site occurrence
21	Hunting and gathering camps at the head of a drainage, west side of the valley
23	Hunting and gathering camps on a terrace overlooking the valley
24	Hunting and gathering camps on a terrace overlooking the valley
25	Hunting and gathering camps on terraces at the head of a small or intermittent stream drainage
26	Hunting and gathering camps on terraces at the head of a small or intermittent stream drainage
27	Hunting and gathering camps overlooking the drainage between Picatinny Lake and Lake Denmark (former lowland/wetland habitats)
28	Hunting and gathering camps on a terrace adjoining Lake Denmark outlet
29	Paleo-Indian or Early Archaic residential sites; Hunting and gathering camps of any prehistoric period low and moderate slopes adjoining small or intermittent stream drainage
30	Hunting and gathering camps or rockshelters at upper elevations of mountains, west side of the valley
31	Hunting and gathering camps on terraces above Lake Denmark
32	Hunting and gathering camps on terraces or moderate slopes bordering small or intermittent stream drainage
33	Hunting and gathering camps on terraces overlooking a small or intermittent stream drainage.
34	Hunting and gathering camps on a hilltop at the head of a small or intermittent stream drainage

35	Hunting and gathering camps on terraces bordering a small, upland drainage
36 (A)	Paleo-Indian or Early Archaic residential sites; Hunting and gathering camps of any prehistoric period on a low terrace bordering the valley margin/wetlands or lowland (now inundated by Lake Denmark)
37	Paleo-Indian or Early Archaic residential sites; Hunting and gathering camps of any prehistoric period on a low terrace bordering the valley margin/wetlands or lowland (now inundated by Lake Denmark)
38-39, 41-42	Paleo-Indian or Early Archaic residential sites; Hunting and gathering camps of any prehistoric period on a low terrace or elevation bordering former lowland/wetlands, now inundated by Lake Denmark
43	Hunting and gathering camps or rockshelters, upper elevations of Copperas Mountain
44	Hunting and gathering camps or rockshelters, upper elevations and terraces overlooking wetlands associated with Green Pond Brook
45-47	Paleo-Indian or Early Archaic residential sites; Hunting and gathering camps of any prehistoric period on a low terrace or elevation bordering former lowland/wetlands, now inundated by Lake Denmark

Table 5.1. Prehistoric archaeological sensitivity areas; adapted from 1996 Draft ICRMP (Cinquino et al. 1996).

Historic period sites discussed above also may require additional Phase II investigations to determine NRHP eligibility and historical significance prior to developmental impact. Most of the potential historic and/or industrial archaeological resources (PA-Sites) probably have some surface expression or could be located further with Phase IB field testing, except for the forge complexes, which have been obscured by development and may require deeper testing and/or ground penetrating radar to identify; therefore careful survey prior to testing such sites is recommended. For some unreported historic resources, such as possible charcoal kilns, identification of likely site areas might require extensive surface survey. Additional documentary research on forge, sawmill, and gristmill sites is recommended and should include a review of available manuscript U.S. censuses of manufacture for census years 1850 through 1880 (Morrell 1996; Rutsch 1999). Further analysis of archaeological data and likely, supplementary field survey information (Phase II excavations) are necessary to evaluate these sites for NRHP eligibility, especially:

- Sites PA-6 and 68 - path of the Morris County Railroad/Wharton & Northern Railroad through the installation boundary - built between 1885 and 1887, this rail line later added spurs and several passenger stations, while it brought passenger and supply service prior to 1930, and delivered coal to the installation power plant until approximately 1973. Much of the alignment near Lake Denmark remains intact and includes stone retaining walls and stone ramp-like structures. In addition, rail bed fragments are visible in the various parts of the installation. In terms of potential resources, little of the subsurface remains are expected to exist, other than foundations of masonry or other rail structures. Trash deposits, however, associated with passenger stations may remain, and structures could reflect late forge tract uses;
- Sites PA-10a, 10b (and 78) - Mount Pleasant or Lower Forge Complex - active from ca.

1750 until after the Civil War, the forge complex includes two dams and ponds, two forge structures (one of which has been out of use since ca. 1800), a gristmill, a store, and other support buildings with associated workers' residences. The longer-lived forge and gristmill located remained at least partly intact into the 20th Century. The subsequent construction of Route 15 in the 1930s included the relocation of part of Burnt Meadow Brook, and caused potential disturbance to part of this forge complex. While part of the complex may have existed outside the installation, deeply-buried site components, such as dam and raceway remains, and forge or other mill foundations, could be potential resources within Picatinny's boundaries. Other resources may exist including slag, coal and other artifacts;

- Site PA-37 - Middle or Aetna Forge, a complex of iron forge and associated structures and potential workers' residences - founded in 1749 and remained active until approximately 1870, this complex comprises a pond and dam with all the forge superstructures removed. Subsequent development and land alteration activities adjacent to Picatinny Lake have impacted the potential forge remains: raceway(s) have been re-used and filled, the dam has been rebuilt and enlarged and several structures have been adapted as part of development. As with Sites PA-10 and PA-78, deeply-buried site components, such as dam and raceway remains, as well as forge or other mill foundations, could survive, since structures do not cover all potential forge-related components;
- Sites PA-61, and 62 and 62a (and 99) - Denmark or Upper Forge and a potentially associated saw/gristmill - active from 1750 until approximately 1870, this iron forge complex consisted of related structures, dam and pond, sawmill and/or gristmill, and workers' houses. While some military-related deconstruction or salvage of forge components occurred prior to the 1926 explosion near Lake Denmark, much of the forge complex was buried by deposition of demolition debris. A 1943 dam enlargement included new outflow pipes and rock spillway, but these alterations occurred west of the forge complex as it appears on historic maps. Despite military-related disturbance, deeply-buried site components, such as dam and raceway remains, and forge or other mill foundations, may exist, along with slag and other artifacts;
- Site PA-57 - Denmark Mine, a poorly-documented mine, possibly opened and used briefly in late-18th to early-19th Century, and re-opened or re-explored during the late-19th Century, although no commercial use reported - three (3) groups of openings probably represent use, and include a shaft and stopes with several small pits. Little potential resources probably exist and a probable lack of mining equipment and much other evidence of mining technology limit the site's significance;
- Site PA-65 - L. Bruden Sawmill, mid-19th Century waterpowered sawmill - potential remains may include a silted-in pond, breached stone-faced earth dam and a stone-lined wheel pit. The site appears to be largely undisturbed, but its remains have probably deteriorated. Comparison of archaeological features with terrain or drainage characteristics, and with any evidence of historic stream management, could provide significant new information about vernacular civil engineering decisions;

- Site PA-86 - probable charcoal kiln of unidentified historic age - possibly associated with a small nearby ditch (Sandy and Rutsch 1992). Charcoal kilns, and roads leading from them to the forges, would have been prominent parts of the forge tract landscape during the phase of iron production. While most charcoal manufacturing procedures are well-documented, the recovery of temporally-diagnostic artifacts, as well as the identification of other kiln sites within the installation, would create a better locational context for regional ironworking and charcoal-manufacturing sites. While some variations in kiln construction or management might emerge from excavation of kiln sites, investigation of such resources would probably yield little new information about these topics. Location of kilns, and any kiln dating through randomly-discarded artifacts, could, however, provide significant new information about kiln distribution and charcoal transport patterns on forge tracts;
- 28-Mr-265/Walton Cemetery – additional analysis and information is needed on the extent, condition, age, and contents of the Walton Cemetery past the investigations by Sandy, Morrell, and Rutsch (1995), Simms and Bevan (1995), and Wood and Rush (2005). Further recordation and conservation of the grave markers is necessary in order to determine the exact boundaries of the Cemetery, both on the surface and below the surface through remote sensing, and to mitigate their overall deterioration in relation to any future foreseen/unforeseen impacts.

Lastly, the historic military development of the Arsenal, as a whole, needs to be addressed archaeologically in concern to former building foundations and placement of testing areas. This is being regularly performed within the GIS Cultural Resource data shapefiles. Overall, knowledge of the existence and condition of archaeological sites across the installation will facilitate planning and Cultural Resource Management processes.

5.2.2 *Data Gaps: Architectural Features, Structures and Historic Districts*

Picatinny Arsenal contains approximately 793 buildings; 177 auxiliary structures, RP assets, and associated land management areas such as the Golf Course; and approximately 85 miles of roads. Across the installation, approximately 75-80% of its architectural resources have been assessed for their NRHP eligibility. The complete Historic Building Assessment Catalog and inventory is listed in tabulated form in Appendix E.\

Based on Garrison historic and DPW Real Property research and ongoing assessments and surveys since the early 1980s, the current buildings list within this ICRMP has been reorganized from previous DPW RP lists, historic lists, prior ICRMPs, Cultural Resource Management reports, and so on, into an Historic Building Assessment Catalog categorizing existing buildings, associated structures consisting of utilities (above and below ground), court areas and other related visual and reportable elements and features, and known demolished buildings with documentation and/or interview confirmation. This reorganization of the buildings list occurred due to many errors and discrepancies noticed during previous historic buildings assessment across the installation and across prior related documents, and the unique history of the installation in relation to its military industrial areas and past operations has ultimately led to contamination resulting in many abandoned, vacant, and closed buildings (on the National Priority Listing for Federal Facilities). Also to note, in most cases industrial/testing process-related equipment within many of

Picatinny's historic buildings has been removed or abandoned in place as the production facilities have been de-activated or the facility has been re-used for other purposes. Equipment within these buildings is complex, multi-component, generally large, and closely tied to the building's structural systems; therefore given the potential re-use of building spaces, in-place preservation of interior equipment is usually unlikely. Except perhaps as monumental souvenirs, individual interior equipment components and assemblages are probably no longer NRHP significant, nor eligible; however SHPO consultation may be needed in some cases. Overall, by reorganizing and redeveloping this prior ICRMP building list and compiling data from other Real Property inventories, a more evolutionary and developmental picture is possible for each industrial area across the installation.

Additionally, several architectural resources were previously evaluated in the 1982-83 HABS/HAER assessment within the five (5) historic district areas, but have yet to be reevaluated by NPS and DoD Army standards and may be potentially eligible for the NRHP. These resources include:

- Middle Forge monument and memorial located within the landscaped area of the Administrative and Research District and in front of Bldg. 151, the installation's historic headquarters at the end of Parker Road. This Army memorial commemorates the historic Middle Forge with a display of 18th Century iron-working tools was initially documented as eligible for the NRHP during the 1982-83 HABS/HAER assessment and within previous installation Master Planning documents (Lev Zetlin 1992);
- a small incinerator recently located behind Bldg. 171, Unit N and within the Administrative and Research District has yet to be evaluated at all;
- Buildings 617D and 620A within the 600 Ordnance Testing Area District; and
- Building 1509A within the Rocket Test Area District.

Considering all of Picatinny's industrial and building areas have been documented through previous surveys and assessments since the early 1980s, only two (2) other detailed studies remain for the installation's overall historic fabric (besides individual buildings approaching 45-50 years of age):

- the Golf Course and its attendant buildings have never been evaluated for the NRHP as a group (district). On most installations, the largest planned landscape is the golf course. According to Picatinny Garrison DPW RP research, the golf course was completed as of 1937 however its architect and official start date of construction is not known. Nevertheless, it is known holes 16 and 17 were originally the site of the parade grounds. Therefore, PCI recently recommended the Golf Course landscape and its attendant buildings undergo an NRHP evaluation before additional golf course-related structures are reviewed independently during annual surveys (Nolte, Mahar, and Steinback 2007); and
- a historic context statement should be prepared for the narrow-gauge railroad system serving the installation itself and for the development of electric, steam, and water pressure service as it related to the evolution of the Arsenal industrial processes.

A proactive approach to identifying potential Cultural Resources will ensure mission

requirements will be satisfied and pertinent issues will be addressed early in the planning process. Mission requirements must be carried out in harmony with applicable Cultural Resource Management laws and regulations, including the documentation of resources altered or destroyed as a result of Army action (DoDI 4715.uu [DRAFT 2008]). Evaluating these coverage areas will allow the installation to meet NHPA Section 106 compliance and NEPA consultation for these projects, and will also allow the mission to plan for and expedite further development in other areas while focusing on data gaps and future research.

5.3 CULTURAL RESOURCES IDENTIFICATION

The Cultural Resources Survey process is marked by three distinct and, in general, increasingly intensive data collection phases. These investigations are required by Sections 106 and 110 of the NHPA to consider how Federal agency's undertakings will affect properties. These requirements are fulfilled by identifying, evaluating, nominating and protecting all significant cultural finds prior to surface and ground disturbing activities in areas not previously surveyed; therefore, it is appropriate to use an operational definition of what constitutes an archaeological site. The minimal definition of archaeological sites, prehistoric and historic, are the confirmed presence of those particular types of artifacts, and/or the presence of one or more archaeological features- either above ground or below the surface. To carry this definition further, a spatial pattern of variously clustered and dispersed archaeological features, such as foundations, depressions and stone concentrations, may show a general correspondence with similar patterns of house or other sites on historic maps (although the history of site abandonment, differential disturbance and new construction may result in disagreements between the archaeological pattern depicted at the field survey level and individual maps or map composites). Additionally, the minimal count of artifacts required for archaeological sites at Picatinny is more than five (5) artifacts and/or the occurrence of two (2) positive shovel test pits within a 20 meter diameter of the field investigations. These defined sites should also have the potential to demonstrate and indicate the location in question will reliably produce additional artifacts; therefore depending on certain conditions, if less than five (5) artifacts are recovered from the site radius, it can be considered an isolated find. Global Positioning System (GPS) coordinates are required for all finds, either isolated or confirmed archaeological sites for future mapping and sensitivity models. These site areas are required to be recorded by State site forms for the NJSM (<http://www.asnj.org/njsmregform.html>) and are given Smithsonian Trinomial numbers (28-Mr-000). If no Cultural Resources or Properties are identified by these efforts, then the Section 106 process is complete; however this may depend on future related construction efforts and should be confirmed with the CRM, and if needed the NJ HPO. All areas of survey and investigation shall be recorded and catalogued by detailed field notes with the appropriate paperwork.

To note, much of Picatinny has been deemed a National Federal Facility Superfund Site which necessitates decontamination mitigation of the potentially hazardous materials. Decontamination processes can and will directly impact any archaeological materials excavated, and may necessitate certification of field archaeologists in the OSHA Hazardous Materials Training Program, if the excavation area falls within the superfund designated areas. Additionally, the 1926 Naval Powder Depot explosion has resulted in the requirement (Safety Office) of UXO anomaly avoidance in conjunction with any archaeological excavation fieldwork, unless the APE has already been cleared for these materials.

5.3.1 *Archaeological Survey (Phase I), Identification (II), and Data Recovery (III) Methods*

Areas subjected to a Phase I survey are selected on the basis of the data gathered during background and literature research and the potentiality for impact by construction, staging, or any other undertakings physically impacting the probable existence of archaeological site. These areas are the APEs of the archaeological investigations. Phase I survey is the reconnaissance element of archaeological investigations and consists of literature and background research (Phase IA) followed by field investigations (Phase IB). Due to the previous extensive amount of background research gathered for Picatinny's regional and military histories, only a minimal amount of additional Phase IA research is usually required for these surveys. The Phase IB field investigation effort is then used in conjunction with the sensitivity model to verify the presence or absence of Cultural Resources and may consist of systematic surface survey, subsurface shovel-testing, and/or remote sensing studies based on a grid of transects. (To note, shovel test pits should be excavated to either a depth of 10 cm into the sub-stratum or 50 cm below surface, whichever comes first. In the case of artifacts being recovered, two sterile 10cm levels are required for the end of the shovel test pit.) Field-testing procedures for Phase I reconnaissance surveys should verify site locations provided by informants, confirm site locations suggested by the Phase IA research, and/or discover previously unknown sites. All archaeologically sensitive areas, even potentially sensitive, require the grid system to be set at 15 meters; only after visual and below surface confirmation of disturbance can reduce this effort to a 30 meter grid system. Additional radial shovel tests in each cardinal direction are then excavated around positive shovel tests for further delineation of the site's boundaries based on half the distance of the specified grid system (7.5 meters or 15 meters). Areas of excessive slope greater than 20% or with standing water will not be tested but will require photo verification for recordation purposes. Overall, approximately 2,050 acres (across 152 areas) have been identified as sensitive and/or potentially sensitive, yet disturbed according to a sensitivity model fashioned to assist the installation with planning. This model needs to be inspected prior to developmental impact of all undertakings involving ground disturbance (Schieppati et al. 2000 and 2003). Future surveys will provide additional data to refine current archaeological sensitivity assessments (Section 4.3).

If Cultural Resources are identified by Phase I studies and survey within the APE, further evaluation is required to determine the potential NRHP eligibility of the resource(s) by Phase II testing and investigation. This Phase II investigational effort is used to obtain detailed information on the site boundaries and size; temporal and/or cultural affiliation; intra-site artifact/ feature patterning; function and placement within a geographic and interpretive context; potential the data categories present within will yield additional interpretive information pertinent to that context; physical and temporal integrity, etc to develop research questions appropriate for NRHP eligibility. For Phase II investigations, additional radial shovel tests are required to further identify site boundaries, and the extent of the vertical depth of the site for comparison, patterning, and data tabulation purposes. After the site's boundaries are confirmed, 1 meter-by-1 meter, or larger, test units are excavated in high and low artifact concentration areas. The extent of these additional investigation requirements can be potentially reduced by project modifications (e.g., realignment, relocations) which avoid or minimize impacts to the resource(s) found. (Note: Avoidance of an archeological site is always preferred to more intensive investigation as a preservation technique.) Also during the Phase II investigation, additional background research

may be required. Phases I and II field investigations can be combined if funding and project/construction time frames are limited.

Lastly, Phase III Cultural Resource data recovery efforts are required when an archaeological site is found to be eligible or listed for inclusion on the NRHP and impacts to the resource(s) cannot be avoided as a result of the Federal undertakings. After a Phase III mitigation plan is developed, it should be based on resource-preservation, engineering, environmental, and economic concerns in relation to the area of development. These efforts may take the form of site avoidance through project redesign, reduction of the direct impact to the resource, data recovery prior to construction and/or a combination of the above. If avoidance considerations are implemented early enough in the planning process, undue burden on the project should not occur. Also, depending on the nature of the construction project, physical barriers (i.e., temporary fences) may be required to protect the site from harm prior to, during, and after Phase III excavations. If avoidance is economically prohibitive or impractical from a design or engineering perspective, then mitigation measures will be undertaken. While varying quantities and quality of data are collected during Phase I and Phase II investigations, Phase III investigations are specifically designed to recover information contained in a significant archaeological site before all or portions of it are destroyed. Thus, the goals of Phase III Data Recovery/Impact Mitigation excavations focus on collecting and preserving cultural, environmental, and any other data of value from an archaeological site before it is lost. Due to the project-specific nature of this phase, mitigation plans should be developed on a case-by-case basis in consultation with installation personnel, NJ HPO, ACHP, project sponsor, interested parties (local historical commissions), and other involved state and Federal agencies (THPOs).

For further identification, evaluation, and recordation, including reporting, policies and requirements, see <http://www.asnj.org/>; <http://www.nj.gov/dep/hpo/1identify/survarkeo.htm#ac>; http://www.nj.gov/dep/hpo/1identify/arkeo_consult.pdf; http://www.nps.gov/history/local-law/Prof_Qual_83.htm; <http://www.nj.gov/dep/hpo/1identify/arkeoguide1.htm>; <http://www.nj.gov/dep/hpo/1identify/culreso.pdf>; <http://www.nps.gov/history/nr/publications/bulletins/arch/>; http://www.nps.gov/history/local-law/arch_stnds_0.htm; and <http://www.nps.gov/archeology/SITES/publicedu1.htm#technical>.

5.3.2 *Curation of Archaeological Collections*

Regulation 36 CFR 79 details the maintenance and management requirements of archaeological collections and their associated records. 36 CFR 79 defines an archaeological collection as material remains excavated or removed during a survey, excavation, or other study of a prehistoric or historic resource and associated records prepared or assembled in connection with the survey, excavation, or other study. This regulation stipulates items should be handled, stored, cleaned, and conserved (and if exhibited, protected and preserved) in an appropriate manner. Data associated with the collection (field notes, artifact lists, site forms, computer disks, and a copy of the final report) also should be curated in an appropriate manner. For further curation information, see: <http://www.nps.gov/archeology/tools/feecred.htm>; <http://www.nps.gov/archeology/sites/curation1.htm#technical>;

Additional protocol, prepared in accordance with the American Institute for Conservation's Code of Ethics, states the primary goal of conservation professionals is the preservation of cultural property. Cultural property consists of individual objects, structures, or aggregate collections having significance which may be artistic, historical, scientific, religious, or social, and which has an invaluable and irreplaceable legacy must be preserved for future generations. In striving to achieve this goal, conservation professionals assume certain obligations to the cultural property, to its owners and custodians, to the conservation profession, and to society as a whole. To note, artifacts recovered from excavations may be contaminated with a variety of hazardous materials, including radioactive isotopes. Unfortunately, the standard OSHA training program does not adequately discuss how to effectively protect oneself while treating artifacts within the lab. Therefore, it may be necessary to create a hazardous material protocol within the processing lab prior to any conservation treatments in order to determine if conservation is practical based on either financial or health concerns.

5.3.2.1 *Artifact Storage*

If artifacts are indeed recovered from archaeological investigations, a strategic plan for both field conservation and curation of these artifacts needs to be developed. All artifacts should be placed in polyethylene bags (4 mil. Thickness), while those artifacts recovered from wet or waterlogged environments should be maintained in this condition with the use of double bagging polyethylene bags. (Double bagging prevents rapid drying and minimizes the further deterioration of artifacts until they are safely brought to the lab.)

Additionally, the proper handling of prehistoric artifacts during excavation can greatly increase their analytical potential. For example, the recovery of blood residue on lithics, cooking and food preparation remains on ceramic materials, or, in the case of skeletal remains, fragile DNA may still exist within the bone-all can assist archaeologists in determining the activities appropriate to a recovered site. However, skeletal material may fall within NAGPRA and other Federal legislation may require specialized handling, curation, and unique conservation methodologies pursuant to tribal wishes.

It should be noted upon excavation, artifacts reaching a point of equilibrium can become reactivated to the agents of deterioration. Equilibrium is defined as the stabilization of an artifact within an archaeological context, where the catalysts or agents of deterioration such as moisture, oxygen, and sunlight have been exhausted, thereby allowing the artifact to reach a level of stability within its symbiotic relationship to the ground. Once this cycle has been broken, rapid deterioration can occur. To aid in the recovery of friable, fragile or extremely unique artifacts and if appropriate, an archaeological conservator should be budgeted into the initial mitigation plan for fieldwork projects. Furthermore in many cases, the pre-positioning of an archaeological conservator in the field can protect the analytical potential and integrity of an artifact. Once artifactual materials have been brought to the lab and general processing occurs, it should be separated by material type and classification. This enables the archaeological conservator to perform surveys of the collection which is the next vital step in developing a strategic plan. The survey will provide the framework for the overall conservation approach. This holistic evaluation enables the conservator to evaluate the specific needs of the collection, thereby gaining the ability to implement a triage or ranking system of conservation to be carried out for the entire collection.

This process has proved to be extremely beneficial when projects had limited time and/or resources.

Once artifacts have been brought up to a standard level of stability, a second form of passive conservation should be implemented-the use of archival storage materials. Artifacts should be housed in acid-free boxes or polyethylene boxes with a combination of acid-free tissue for support or ethafoam. Architectural elements also need to be housed in adequate boxes to prevent damage to the material(s). A sturdy acid-free box is rated for at least 40+/- pounds would be desirable. To note, metal storage cabinets with baked enamel surfaces are preferred, while storage cabinets made from particle board or formica are not recommended because of their out-gassing of such materials as ether and other solvents. For long term storage, material should be stored by type, using archival storage materials. Materials should optimally be stored at a general temperature range of 70°F to 75°F, with a 50+/-% relative humidity for the collection. Small fluctuations in both temperature and humidity are acceptable, depending on the physical environment in which the collection is being housed. (The use of silica gel can help maximize the humidity management.) Certain organic materials, such as bone or leather, and architectural elements may need a more advanced storage facility. After conservation treatments have been carried out, a plan for curation should be developed.

According to NJ HPO policy, all archaeological collections must be curated to meet 36 CFR 79. The language utilized by Section 106 legislation should be implemented to provide for the care and curation of the collections, as well as allowing for the long-term accessibility of the artifacts by future researchers and scholars. A facility for the storage and curation of these collections should follow these Federal standards. In addition to physical and interpretive standards, a disaster recovery plan should be created when the final repository for these collections has been identified. Subsequently according to NJSM Curation policies (still in draft as of 2005), only archaeological collections from NRHP eligible or listed sites will be stored at the Museum in Trenton, NJ. Therefore, if an archaeological site is found to be not NRHP eligible, its collections' must be stored at alternate 36 CFR 79 applicable repository. Currently, archaeological sites 28-Mr-321 and 322 are NRHP eligible (NJ HPO SHPO Opinions- potentially eligible), along with a total of 12 boxes collected from all of the previous and ongoing installation surveys. Therefore the installation's plan for curating archaeological collections is to store the materials on the installation, until a more suitable long-term storage facility compliant with 36 CFR 79 can be found and agreed to with the AEC/IMCOM, NJSM, NJ HPO, ACHP, and the GC, DPW and EAD appropriate personnel. (Note: This long-term storage facility will most likely be located off-site as current funding allotments cannot be allocated for a new, or retrofitted, curation facility at Picatinny.) Currently, this storage area is a room in the EAD is minimally climate controlled, and also a small curation station for washing and processing archaeological materials. This area is secure, while the collections are stored in separately protected cabinets with humidity monitors for climate control inspection purposes. (Note: For security and protection purposes, the location of this building is only given out to the appropriate personnel). The CRM is currently in discussions with other Federal agencies, particularly the NPS, and local county and township historical organizations in the hopes of finding a long-term storage facility fully compliant with Federal regulations. Overall, Picatinny realizes this curation plan does not entirely meet regulatory compliance within 36 CFR 79, NJ HPO, and the NJSM; however, the installation does have a future preservation goal in mind based on total collections amounts and annual/future funding

allotments.

5.4 ARCHITECTURAL RESOURCE AND DISTRICT ASSESSMENT

The majority of the known NRHP eligible Historic Properties at Picatinny are architectural resources. These resources include buildings, structures, and features, including but not limited to all visible aspects of the built environment combining to form the installation's historic fabric (see Section 3.3.1 on Real Property Assets). Across the installation, the majority of Picatinny's buildings and areas have been assessed for historical significance and NRHP eligibility; therefore assessments have focused on surveying structures 45-50+ years old. The complete Historic Building Assessment Catalog and inventory is listed in tabulated form in Appendix E.

5.4.1 *Architectural Survey and Assessment (Reconnaissance and Intensive) and HABS/HAER Methods*

According to the NHPA, the installation is required to assess architectural resources 45-50 years of age and older for their NRHP eligibility. These requirements are fulfilled by identifying, evaluating, nominating and protecting all significant historic buildings, structures, and features, including but not limited to all visible aspects of the built environment combining to form Picatinny's historic fabric, such as bridges and dams, sewage lift stations, playgrounds and court areas, cemeteries, parks and gardens, surrounding landscape and overall setting, etc. prior to renovations, additions, and other structurally altering projects. The purpose of these assessments is to evaluate the architectural significance of the resource(s), along with its developmental history in the larger picture of the military industrial area (district) it is located in, and within the installation's overall historical context and evolution. This may also include access to the interior, if needed and feasible, for the NRHP determinations. These assessments must be consistent with the Secretary of the Interior's Standards and Guidelines for Architecture and Engineering, and Identification to determine the buildings eligibility for inclusion in the NRHP. For these assessments a thorough review of existing installation files, reports (including this ICRMP), and DPW RP documents; library/historian archives; local histories, historic maps, regional research; NRHP guidance is required.

All architectural resources are to be recorded first at the reconnaissance level with appropriate notation and photographic documentation for reporting purposes. If the resource(s), do not appear to be NRHP eligible during the reconnaissance level then no further work is necessary. However, if the resource(s) appear to be NRHP eligible, an intensive-level survey is required for determination and NJ HPO purposes. To satisfy these intensive-level requirements, supplementary work and documentation must include additional photographic documentation with extremely detailed notations of the entire resource, including interior if given access, and pictures of each face/visual element of the structure.

After NRHP eligibility has been determined, further HABS/HAER documentation may be required for certain project mitigative measures, such as demolition or renovation. This HABS/HAER documentation follows NPS guidelines and

combines drawings, history, and photography to produce a comprehensive, interdisciplinary record, multidisciplinary record that ranges in scope with a site's level of significance and complexity. It should first and foremost convey what is most important about that particular structure. The drawings component generally includes floor plans, elevations, architectural details, and construction elements, sometimes expanded to include sectional or axonometric drawings to convey the interrelationship of the building parts...The written history follows an outline format that begins with a statement of significance supported by the development of the architectural and historical context in which the structure was built and subsequently evolved. The historical report [also] employs a narrative format that has proven useful in tracing the evolution of engineering practices and their manifestation at a particular site. A drawing set can include an evolution of the site plan; typical plans, sections and elevations; exploded details; a subset of process drawings that depict the machinery and its placement as well as the flow of raw materials and product; and interpretive and axonometric drawings. The large-format, black-and-white photographs record the environmental setting, elevations, and significant details, both inside and out. In any case, each component of the documentation conveys an important piece; together they create a comprehensive understanding of the site (<http://www.nps.gov/history/hdp/index.htm>).

These HABS/HAER documents are then kept on file at Picatinny DPW EAD and the Library of Congress in Washington, DC for future research and conservation.

For further information and requirements, see <http://www.nj.gov/dep/hpo/1identify/survarcht.htm>; http://www.nps.gov/history/hdp/standards/standards_regs.pdf; http://www.access.gpo.gov/nara/cfr/waisidx_02/36cfr68_02.html; <http://www.nps.gov/history/hps/tps/standguide/>.

5.5 FUNDING AND FUTURE LEVEL OF EFFORT

This section lays out the installation's planned ongoing and current projects, current renovation projects within each of the NRHP eligible historic districts, and the overall Master Plan projected project list. These projects are then wrapped together into a five (5) year plan for funding within the CRM's program objectives.

Picatinny's objectives for current and ongoing projects for archaeological sites consists of the reconnaissance relocation of potential sites prior to proposed projects and Phase IB surveys for data management control and inventory purposes. Only sites not previously developed over are attempted for relocation. Upon relocation, archaeological sites are catalogued with their appropriate Smithsonian Trinomial number with the NJ State Museum. If the site(s) appear to no longer exist through this relocation process, then their potential location is kept on file until a Phase IB survey can further identify their potential subsurface existence.

For the NRHP eligible historic districts, the following current and ongoing projects include:

- periodic interior renovations and Anti-Terrorism Force Protection (ATFP) upgrades within the Administrative and Research District, particularly Buildings 119, 151, 162, 171, 172, 173, 174, 176, and 183;
- planned interior and exterior upgrade renovations of Buildings within the 600 Ordnance Testing Area District to meet military safety standards, and ATFP criteria for daily ordnance testing, research and development;
- NARTS Area D railgun reuse (RP Asset 3620), and planned interior and exterior renovations for Building 3607; and
- periodic interior renovations and ATFP upgrades within the Rocket Test (1500) Area District, no particular Buildings proposed currently for renovation; Picatinny is presently reevaluating their mission options in this area as these daily operations are being relocated elsewhere on the installation.

Also included within this list of projects are continual maintenance Service Order and IJO work order requests through MAXIMO for other NRHP eligible buildings and structures yet to be evaluated. (To note Family Housing Buildings 112, 113, 114, 115, and 3250 currently have renovation projects planned through the RCI program and are managed by Balfour Beatty, see Section 3.3.2).

5.5.1 *Planned Demolitions*

Over the next five (5) years, Picatinny Garrison is planning on demolishing approximately 200 structures, from buildings to water tanks to electrical substations. Twenty-two of these structures are historically eligible for the NRHP, and will require further HABS/HAER evaluation and an MOA with NJ HPO before demolition could proceed (Appendix E, Comment Column for planned disposal year). Overall, approximately 69 of these 256 structures have already been approved with NJ HPO for the demolition process, and approximately 52 are still remaining for NRHP eligibility evaluations. These structures will be surveyed over the coming FYs.

5.5.2 *Overall Master Plan*

The majority of these demolitions are to support projects proposed within the installation's Master Plan (Table 5.2). These projects will occur over the next 5-10 years for both mission and garrison-related development and to support BRAC efforts from other Navy installations relocating operations to Picatinny. Archaeological fieldwork and further historic building assessments are remaining for some of these projects.

Priority	Program	Project Number	Project Title	Bldg(s)/ Land Area Affected	Bldg(s) Assessed and/ or Eligible?	Archaeologically Sensitive or Disturbed?	Expected Type of Archaeological Survey Needed	Anticipation of Completed Work	Comments
Mission Priorities									
1	MCA	65327	Armament Integration Facility	Bldg. 2 (Renovation) and 7 (Rear Addition)	Not Eligible ² . Bldg. 7 built in 1994- no assessment needed	Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction (HPO-H2008-149)
2	MCA	51519	Ballistics Experimentation Facility (BEF); and BEF Phase I Site	632, 633, 634, 634S, 635, 635A, 636 Group, 637, 638 for BEF; 647, 652, 652A, and 657 for BEF Phase I Site (Building Demolition and New Construction)	638-still needs to be historically assessed; 635A built in 1980 and 636C built in 1985- no assessment needed; All others- Not Eligible ^{2 & 4}	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey	Phase I Survey Completed ¹¹ , FY 2008 for historic building assessment	No significant cultural resources identified or expected. ¹¹ No Further Work Needed. Implement SOPs during Construction
3	MCA	63054	Explosive Ordnance Disposal Technology Facility	1033, 1033A, 1354, 1354A, 1357, 1357A, 1359, 1359A, 1361, 1361A, 1363, 1363A, 1373, 1373A, and 1377 (Building Demolition and New Construction)	1033- no longer standing nor historically assessed; All others- Not Eligible ^{3 & 4}	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey	Phase I Survey Completed ¹¹	No significant cultural resources identified or expected. ¹¹ No Further Work Needed. Implement SOPs during Construction
4	MCA	65051	Soft Recovery System Facility	640, 640B, and 641 Group (Adjacent New Construction)	Not Eligible ³	Potentially Sensitive yet Disturbed	Phase I Survey Completed ⁶	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction
5	MCA	65305	RF High Voltage Weapon Propagation Tunnel	329 (Adjacent New Construction)	Not Eligible ²	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey	FY 2008 Phase I Cultural Resource Survey	Preliminary Phase I Conclusions- No significant cultural resources identified or expected
6	MCA	64997	Explosive Machining and Prototyping Facility	230 Group and 232 Group (Building Demolition and New Construction)	Not Eligible ^{2 & 4}	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey	FY 2008 Phase I Cultural Resource Survey	Preliminary Phase I Conclusions- No significant cultural resources identified or expected
7	MCA	65057	Advanced Sensors and Guidance Laboratory	In-between 2 and 3 (Adjacent New Construction)	Not Eligible ²	Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction
8	MCA	63055	High-G Inertial Evaluation Laboratory	640, 640B, and 641 Group (Adjacent New Construction)	Not Eligible ³	Potentially Sensitive yet Disturbed	Phase I Survey Completed ⁵	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction
9	MCA	55858	Energetic Materials Chemistry Complex	3028 and 3029 (Adjacent New Construction)	Not Eligible ²	Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction
10	MCA	59980	Experimental Evaluation Facility	908 and 909 (Adjacent New Construction)	Not Eligible ²	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey	Phase I Survey Completed ¹¹	No significant cultural resources identified or expected. ¹¹ No Further Work Needed. Implement SOPs during Construction
11	MCA	63649	Nanotechnology Facility	1090 (Adjacent New Construction)	Not Eligible ³	Highly Sensitive	Phase I Survey	FY 2008 Phase I Cultural Resource Survey	Preliminary Phase I Conclusions- No significant cultural resources identified or expected
12	MCA	61047	Armament Life Cycle Environmental Laboratory	Behind 315 (Adjacent New Construction)	Not Eligible ²	Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction
13	MCA	64988	Virtual-to-Reality Center (Pending)	Location Pending ¹	N/A	N/A	N/A	N/A	N/A
14	MCA	60185	Secure Transportation and Technology Integration Facility	3515 and Surrounding Area Eastwards Towards 3518 (Adjacent New Construction and Potential Demolition)	Not Eligible ³	Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction

Table 5.2. List of Master Plan Projects.

15	MCA	51038	Explosive Storage Magazines	New Construction- No Bldgs. Directly Affected (Surrounding Area from 1203, 1204, 1205, 1206, and 1212)	N/A	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey	Phase I Survey Completed ¹¹	No significant cultural resources identified or expected. ¹¹ No Further Work Needed. Implement SOPs during Construction
16 (CY 2007 Priority)	EUL	N/A	Picatinny Applied Research Campus (PARC), including the Little League Ballfield Relocation near Lake Denmark; and the Development of the 350-Area	1104-1148, and 1175 at PARC, No Bldgs. Directly Affected at Little League Ballfield Relocation; 350, 352, 353 (Demolition)	1104-1148 Demolished ⁶ ; 1175- built in 1978- no assessment needed; 350, 352, 353 Demolished ⁷	Potentially Sensitive yet Disturbed to Highly Sensitive	Phase I Survey Completed for 37 Acres of 120 Acre Project Area ⁸	Further Phase I Cultural Resource Surveys May Be Anticipated through Separate NEPA Analyses ⁹	Phase II Evaluations have been completed for archaeological site identified during Phase I Survey ⁸ . Determined no adverse effects expected to occur. Implement SOPs during Construction
Garrison Priorities									
1	UMMCA	52848	Dam Upgrades (in Design)- Picatinny Lake Dam will involve tree removal and between 2-3 ft. deep of disturbance for Dam Upgrade; Lake Denmark Dam will involve tree removal and minimal grading only	No. Bldgs. Directly Affected at both Dam Locations	N/A	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey with Archaeological Monitoring Potentially Needed at Picatinny Lake; Archaeological Monitoring at Lake Denmark Dam as Scope of Project has changed to only include tree removal and minimal grading	Due to the historic nature and construction of the Dams, ground penetrating radar and/or archaeological monitoring may be involved	Significant resources expected at both Dam sites. Due to the historic nature and construction of the Dams, ground penetrating radar and/or archaeological monitoring may be involved during construction at both Dam sites as iron ore, metal, and potential UXO issues impeded Phase I surveys
2	MCA	48645 (Phase I and II)	Emergency Services Center	No Bldgs. Directly Affected; adjacent to Administrative and Research Historic District	N/A	Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	Separate NEPA analysis covered the Emergency Services Center Phase I impacts and concerns in relation to the adjacent historic district (2006). Impacts are expected to be not adversely effecting for Phase II development; design shall meet the IDG with neutral colors recommended
3	MCA	621	Vehicle Maintenance Shop	New Construction- No Bldgs. Directly Affected	N/A	Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction
4	MCA	55373	Physical Fitness Center	108, 109, and 124 (Adjacent New Construction and Potential Demolition)	Not Eligible ²	Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction. May need archaeological monitoring as Cultural Resources identified in Bldg. 104 vicinity during recent UXO investigations (for RCI)
5	MCA	55524/56918	Child Development Addition/School Age Services Center	New Construction- No Bldgs. Directly Affected; across from Bldg. 3159	N/A	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey	Phase I Survey Completed ¹¹	No significant cultural resources identified or expected. ¹¹ No Further Work Needed. Implement SOPs during Construction
6	MCA	50000	Post Chapel (Renovations)	3220	Not Eligible ²	N/A	No Further Work Needed	No Further Work Needed	No Further Work Needed- Building Determined Not Eligible
7	MCA	54991	Roof Replacement Arsenal-wide (Locations Pending)	Locations Pending ¹ - Case-by-Case Basis	N/A	N/A	N/A	N/A	Locations Pending- Case-by-Case Basis- Implement SOPs and Standard NJ HPO Consultation as Needed
8	MCA	55740	Fence Replacement Arsenal-wide (Pending)	Locations Pending ¹ - Case-by-Case Basis	N/A	Locations Pending- Case-by-Case Basis	Locations Pending- Case-by-Case Basis	Locations Pending- Case-by-Case Basis	Locations Pending- Case-by-Case Basis- Implement SOPs and Standard NJ HPO Consultation as Needed
9	MCA	55068	Road Repair Arsenal-wide (Pending)	Should not Affect Any Bldgs. or Undisturbed Land Areas	N/A	N/A	N/A	N/A	No Further Work Needed- as long as Historic Districts or Ground Disturbance is not expected
10	MCA	GPWHSE	General Purpose Warehouse (2 separate project locations)	91, 91A-G and 3328, 3329, 3341, 3342, 3345, 3349, 3350, 3354, 3357, and 3359 (Building Demolition and New Construction)	91A-G Demolished ⁹ ; All others- Not Eligible ²	Disturbed at Both Locations	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction

Table 5.2. List of Master Plan Projects.

BRAC Priorities									
1	BRAC	65425	Packaging, Handling, Shipping and Transportation Center	448 Group and 452B (Building Demolition and New Construction)	Not Eligible ² ; and Demolished ¹⁰	Potentially Sensitive yet Disturbed	Phase I Cultural Resource Survey	FY 2008 Phase I Cultural Resource Survey	Implement SOPs during UXO Investigation occurring prior to Phase I Survey
2	BRAC	65426	Fuze Engineering Complex (5 separate project locations)	1) 4, 5, 6, and 66 ((Building Demolition, Renovation and New Construction); 2) No Bldgs. Directly Affected (across from 3208); 3) 1510 and 1510B (Demolition); 4) 407 (Renovations); and 5) New Construction and No Bldgs. Directly Affected within Surrounding Area from 1207-1210 (Disposal of 1210S and 1212S Paved Storage Areas)	4, 5, 6, 66, 407, 1210, 1212- Not Eligible ² ; 1510 and 1510B ⁴ - Eligible	Disturbed in Project Locations 1, 2, and 3; No Ground Disturbance at Project Location 4 (Renovations); Potentially Sensitive yet Disturbed at Project Location 5	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances at Project Locations 1, 2, and 3; Phase I Cultural Resource Survey at Project Location 5	FY 2008 Historic Building Documentation at Project Location 3- HABS/HAER; Phase I Survey Completed ¹¹ , FY 2008 remaining Phase I Cultural Resource Survey	Bldg. 1510 and 1510B- To be demolished and within Historic District. Pending MOA and HABS/HAER documentation for NJ HPO; No significant cultural resources identified or expected ¹¹ (pending NJ HPO review)
3	BRAC	65525	Guns and Weapons Systems Laboratory	3352 & 3353 (Demolition)	Not Eligible ²	Disturbed at All Project Locations	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances	No Further Work Needed	No Further Work Needed. Implement SOPs during Construction
4	BRAC	65527	Guns and Weapons Systems Technology Data Facility (4 separate project locations)	1) 25; 2) 61; 3) 3350; 4) 647, 652, 652A, and 657 (Adjacent New Construction and Potential Demolition)	Not Eligible ²	Disturbed; Potentially Sensitive yet Disturbed	No Adverse Effect Anticipated due to Previous Historic Research and Previous Disturbances (Project Location 1); Phase I Cultural Resource Survey (Project Location 2)	Phase I Survey Completed ¹¹	No significant cultural resources identified or expected. ¹¹ No Further Work Needed. Implement SOPs during Construction

Note 1: Capital investment strategies for projects shown as "Pending" have not yet been prepared by DPW.

2: Historic Building Assessment by Panamerican Consultants, Inc. from 1997-1999 received NJ HPO concurrence on July 2, 1999 (HPO-G99-010).

3: Historic Building Assessments by Panamerican Consultants, Inc. from 2004 received NJ HPO concurrence on April 13 and August 9, 2004 (HPO-D2004-058 and HPO-H2004-087).

4: Historic Building Assessment by Panamerican Consultants, Inc. performed during 2007 is pending NJ HPO review (Nolte, Mahar, and Steinbeck 2007).

5: Phase I Cultural Resource Survey was completed for this project by Panamerican Consultants, Inc. during 2004 and 2005 with NJ HPO concurrence on September 29, 2004 (HPO-I2004-304). No further archaeological survey work is needed and no adverse effects are expected to occur.

6: Bldgs. 1104-1148 were demolished per NJ HPO concurrence on December 3, 1996 (HPO-L96-143), July 10, 2000 (HPO-H2000-26), January 16, 2004 (HPO-A2004-94), January 30, 2006 (HPO-B2006-72) and December 6, 2006 (HPO-L2006-161).

7: Bldgs. 350, 352, and 353 were demolished per NJ HPO concurrence on May 15, 2007 (HPO-E2007-121).

8: Phase I Cultural Resource Survey was completed by Tetra Tech EM, Inc. for 37 Acres of 120 Acre Project Area during 2005 and 2006 with NJ HPO concurrence on June 19, 2006 (HPO-F2006-131). Phase II Evaluations determined Site 28Mr314 not eligible for the NRHP with NJ HPO concurrence (HPO-C2008-123). Further Phase I Cultural Resource Surveys may be anticipated through separate NEPA analyses.

9: Bldgs. 91A-G were demolished per NJ HPO concurrence on December 21, 1994 (HPO-L94-130).

10: Portions of 448 Group Bldgs. were demolished per NJ HPO concurrence on through 1985 TECUP MOA with the Advisory Council on Historic Preservation and SHPO, and December 3, 1996 (HPO-L96-143).

11: Phase I Cultural Resource Survey was completed for this project by Panamerican Consultants, Inc. during 2007 (HPO-H2008-102). No further archaeological survey work is needed and no adverse effects are expected to occur.

Table 5.2. List of Master Plan Projects.

5.5.3 *Future Projects*

The following is a list of proposed projects formulated to address the installation's Master Plan (Table 5.2) and to focus on data gaps and future research (Section 5.2.1.3 and 5.2.2.1). These projects should be dovetailed with mission needs and installation construction as funding becomes available. Evaluating these coverage areas will allow the installation to meet NHPA Section 106 compliance and NEPA consultation for these projects and will also allow the mission to plan for and expedite further development in other areas. Picatinny's impetus is to further inventory Cultural Resources and aid in future planning and development at the installation. These projects may change based on current funding allotment and Master Plan project proposals.

Archaeological Surveys:

- 9.25 acres in the 1000 Area to support the Nanotechnology Facility;
- 36.16 acres in portions of the 200 and 300 Areas to support the Explosive and Research Development Facility and for survey coverage to support ongoing mission operations;
- 20 acres in the 1200 Area to support the Explosive Storage Magazines development;
- 15 acres in the 400 Area to support the Packaging, Handling, Shipping & Transportation Center;
- 115 acres in the Navy Hill Area portions of the 3100 and 3200 Areas to support the survey coverage areas of RCI Housing development, for the Fuze Engineering Complex Electromagnetic Research Lab, and for survey coverage to support ongoing mission operations;
- Approximately 13 acres in the 1200 Area for the Lake Denmark Dam Upgrade;
- Phase IB reassessment with Phase II evaluations of 28Mr321 and 28Mr322 for NRHP eligibility (Sandy and Rutsch 1986-1991);
- Phase II evaluation of sites 28Mr281, 28Mr282, 28Mr283 for a prehistoric site comparative analysis (PCI 1997-1999; 2008);
- Phase IB survey and/or Phase II evaluations in APEs for other undertakings still yet to be determined.

Architectural Assessments:

- structures between 45-50 years of age or older;
- HABS/HAER Assessment of Building 154, 168, 617D, 617E, 1517, 1517A, 1518A, 1519, 1520, 1521, 1522, 3617 and 3618 due to their adverse effect level of deterioration;
- HABS/HAER Assessment of Buildings 1510 and 1510B listed for BRAC demolition;
- Golf Course and its related auxiliary structures as an associated landscape;

The following is an additional list of proposed projects based on the five (5) year long-range plan and the current Master Plan for development across Picatinny:

- conservation survey and plan for the Cannon Gates and the Middle Forge memorial monument that can be implemented by either Picatinny maintenance personnel or outside conservation consultants;
- installation of historical markers within and surrounding all NRHP eligible historic

districts to identify and highlight these areas. This will allow for military and civilian personnel and visitors to the installation to be more aware of the installation's historical heritage to ensure the long-term preservation of these significant areas;

- additional remote sensing and Ground Penetrating Radar fieldwork on the extent, condition, age, and contents of the Walton Cemetery, while furthering prior research by Sandy, Morrell, and Rutsch (1995), Simms and Bevan (1995), and Wood and Rush (2005). Further recordation and conservation of the grave markers is necessary in order to determine the exact boundaries of the Cemetery, both on and below the surface through and to mitigate the markers' overall deterioration in relation to any future foreseen/unforeseen impacts.

These projects should be dovetailed with mission needs and installation construction as funding becomes available. Mission requirements must be carried out in harmony with applicable Cultural Resource Management laws and regulations, including the documentation of resources altered or destroyed as a result of Army action (Prior AR 200-4: Chapter 2). A proactive approach to identifying potential Cultural Resources and Historic Properties will ensure mission requirements will be satisfied and pertinent issues will be addressed early in the planning process.

6.0 Resource Management and Preservation

This section addresses the management and preservation requirements for the Cultural Resource Management Program and the installation. Also discussed are the objectives, policies, and procedures relied upon and utilized to maintain legal compliance for the management of archaeological sites, Historic Properties, buildings and districts. For further information, see <http://www.nps.gov/history/standards.htm>; <http://www.nj.gov/dep/hpo/>; and <http://www.nps.gov/history/nr/publications/bulletins.htm>.

6.1 NATIONAL HISTORIC PRESERVATION ACT COORDINATION

At present, archaeological sites have been identified within the installation boundaries have either been determined ineligible for listing to the NRHP or have not had their eligibility evaluated entirely by Phase II archaeological fieldwork. As identified in the five-year work plan and based on the availability of funding, once the development of an archaeological inventory of the installation is completed, areas sensitive for the presence of archaeological resources will be clearly demarcated; then, all NRHP eligible archaeological sites in these sensitive areas will have to be identified to the greatest practical extent ensuring their overall protection and preservation. If no ground disturbing activities are to occur in these areas, then no particular protective measures will be required. If new construction or some other ground disturbing undertaking is to take place in an area sensitive for the presence of archaeological resources at some time in the future, then impacts to the NRHP listed or eligible sites will be considered. If avoidance is economically prohibitive or impractical from a design or engineering perspective, then mitigation measures will be undertaken (ie. Phase III excavations). Protective measures will be required when erosion by natural or man-made processes have the ability to adversely effect an archaeological site along a stream bank or through soil deflation.

The first priority for all projects impacting archaeologically sensitive areas or sites is avoidance through redesign; however if preventive considerations are implemented early enough in the planning process, then avoidance need not impose any undue burden on the project and/or mission. All scope designs, work and/or construction plans, and/or photos related to the project must be submitted to the CRM for their review. If avoidance is impractical from a design, engineering, or mission perspective, then investigative and/or mitigation measures shall be undertaken.

The CRM must carry out Section 106 review if the proposed action is an undertaking and if it has the potential to affect Historic Properties. Generically, the Section 106 process is as follows:

1. before an undertaking can take place on or near any Historic Property (known or unknown), it must be brought to the immediate attention of the CRM and the EAD. If the undertaking has the potential to cause ground disturbance, an investigation may be required to determine if

the undertaking will affect NRHP eligible archaeological resources. This identification requires the CRM to determine if the undertaking will have no effect, no adverse effect, or an adverse effect upon the Historic Properties.

2. the CRM should be provided with full documentation including drawings, specifications, detailed descriptions, sketches and a written report of what the proposed action entails (see Internal Coordination, Section 3.2 of the ICRMP). *If deemed appropriate*, the CRM will then coordinate with the NJ HPO and forward the information to them. The NJ HPO is entitled to a 30-day period to review the information of the proposed action. If the NJ HPO fails to respond within 30 days of receipt of a request for review of a finding or determination, the CRM may either proceed to the next step in the process based on the finding or determination or consult with the ACHP in lieu of the NJ HPO. The CRM shall also identify the appropriate points for seeking public input and for notifying the public of proposed actions, consistent with 36 CFR 800.2 (d).
3. if previously unevaluated Cultural Resources are discovered, the CRM will then apply the NRHP criteria (36 CFR 63, see Section 3.5 of the ICRMP) to Historic Properties identified within the APE. If no Cultural Resources are identified within the APE or if Cultural Resources are identified but not NRHP eligible (with NJ HPO concurrence), the installation can proceed with the undertaking (provided the ACHP is not reviewing the finding)
4. if NRHP eligible Historic Properties are within the APE of the undertaking, the CRM applies the criteria of adverse effect: An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a Historic Property that qualify the property for inclusion in the NRHP in a manner diminishing the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Examples of adverse effects include physical destruction, alteration or neglect of the Historic Property, removal of the Historic Property from its original location, change of the character of the Historic Property's use or physical features, introduction of visual, atmospheric or audible elements diminishing the integrity of the Historic Property's significant features, or transfer, lease, or sale of the Historic Property out of Federal ownership or control.

If it is found the undertaking will have an adverse effect, then the CRM shall consult with the NJ HPO and other interested consulting parties to seek ways to avoid, minimize or mitigate the adverse effects. For this purpose, the CRM may use standard treatment references and SOPs outlined in this

document (Appendices F and G). If the CRM and the NJ HPO agree on how the adverse effects will be resolved, they shall execute a MOA and provide the documentation to the ACHP and interested parties prior to approving the undertaking. If the CRM and the NJ HPO fail to agree on the terms of an MOA, then the CRM will work to seek ways to avoid or reduce the effects of the proposed action on the Historic Property. Failing this, the CRM shall request the ACHP to join the consultation and provide them with the documentation specified in 36 CFR 800(11).

If neither the CRM nor the NJ HPO can agree on resolving adverse effects (i.e. the NJ HPO terminates consultation per 36 CFR 800[7]) then the installation may execute the MOA with the ACHP and without NJ HPO involvement. If the installation and the ACHP cannot agree, the ACHP then renders advisory comments to the installation, which must be considered when the final decision on the undertaking is made. The ACHP may recommend further consultation to attempt to resolve the matter. In all cases where termination of consultation occurs, the installation must document the process and consider comments before approving the undertaking. Any major change to the proposed action after the MOA is final shall require resubmission of another proposed action package to the NJ HPO.

5. if there is no adverse effects to Historic Properties and the NJ HPO agrees, then the installation may proceed with the undertaking unless the ACHP is reviewing the finding pursuant to 36 CFR 800.5. If the NJ HPO or any consulting party disagrees within the review period, it shall specify the reasons for disagreeing with the finding. The CRM shall either consult with the party to resolve the disagreement, or request the ACHP to review the finding.

6.1.1 *Section 110 and Historic Property Monitoring*

Section 110 of the NHPA charges Federal agencies with the protection of Historic Properties, along with encouraging agencies to compile inventories and integrate information on Historic Properties into project planning and other undertakings. In accordance with Section 110 of the NHPA and to ensure ARPA violations are not occurring to archaeological sites, the CRM should actively monitor all archaeological sites either eligible or of unknown eligibility. This also includes sites not in direct threat by development, activities, or any other undertakings. Monitoring should occur at least once every six months to Historic Properties, including historic buildings and districts. This increased surveillance should also be coordinated with the installation police and security offices to ensure the apprehension of individuals and seizure of stolen materials from the installation by artifact collectors. This includes the enforcement of the utilization of metal detectors for any other activity other than UXO survey and clearance authorized by the security office.

If degradation, vandalism, erosion, or some other threat or deterioration is noted

during these monitoring instances it is considered an adverse effect and the CRM should act quickly to ensure adequate protection and restoration to the property in consultation with the NJ HPO and ACHP and for applicability to the Secretary of Interior's Standards. This can include restricting access to the archaeological site(s) and immediate areas by fencing, installing security cameras, establishing vegetation like greenbrier and other thorny plants, and intentionally burying the site with clean fill to render visibility and future threats and impacts.

6.2 ARCHAEOLOGICAL SITE MANAGEMENT PLAN

Archaeological sites, known and unknown, and sensitive areas are managed through the CRM, in coordination with DPW and the EAD. Areas to be excavated are handled through work orders, and as new construction with DPW. To note, some projects for example UXO surveys, geotechnical borings (for pre-development determinations and soil/ground water contamination testing), etc. will only involve a small amount of ground disturbance typically occur quickly and need full cooperation from all installation personnel due to mission essential time constraints, project deadlines, and the projects themselves occurring for more dominant installation regulations; and are therefore usually handled at an internal installation and review level. Furthermore, if no Cultural Resources or Properties are identified through the work order process and reviews by the CRM, then the Section 106 process is complete; however this may depend on future related construction efforts and should be confirmed with the CRM, and if needed NJ HPO. All work orders reviewed by the CRM are catalogued and recorded weekly through metrics for CLS.

The CRM monitors all identified archaeological sites by visual verification once a year, or less if possible. In particular, the Garrison IC and DPW Real Property have jurisdiction and authority over the land of the Walton Cemetery (Site 28-Mr-265); however, its protection and preservation is managed by the EAD. (To note: Visitation to the cemetery must be approved through Picatinny Security and the PAO, in cooperation with the CRM.) The Walton Cemetery has had both archaeological and topographical surveys, and a non-intrusive geophysical investigation performed within its arbitrary boundaries since 1995 (Sandy, Morrell, and Rutsch 1995; Simms and Bevan 1995; Wood and Rush 2005). (Note: The cemetery is currently contained within a semi-fenced area; and will be re-fenced in 2009 with a new arbitrary boundary). Geophysical investigations have included ground penetrating radar, magnetometer, and soil conductivity/resistivity. The CRM monitors the cemetery every three (3) months, or less if possible, and if needed has areas of vegetation and trees cut down impacting, or have the potential to impact, head/footstones. (To note: This work must be further approved by the Natural Resource Manager within EAD). For further Army regulations pertaining to cemetery preservation, see AR 210-190, Chapter 2-2 and 2-12 (http://www.army.mil/usapa/epubs/pdf/r210_190.pdf); AR 200-3, Chapter 4-3 (<http://www.gordon.army.mil/dpw/enrmo/ar200-3.html>); DA PAM 420-7 (http://www.army.mil/usapa/epubs/pdf/p420_7.pdf); and Technical Manual, Chapter 2-6 and 15 (http://www.wbdg.org/ccb/ARMYCOE/COETM/tm_5_630.pdf?bcsi_scan_0C34461FB43F17E1=0&bcsi_scan_filename=tm_5_630.pdf).

6.2.1 *Unintentional or Inadvertent Damage to an Archaeological Site*

Unanticipated discoveries happen most often with projects involving ground disturbance activities, although sometimes they involve unforeseen effects on a known Historic Property. In all cases of unanticipated discovery, the CRM should initiate consultation in accordance with 36 CFR Part 800.13. The accidental discoveries of Cultural Resources during an undertaking can include but are not limited to: undiscovered/undocumented structural and engineering features; and undiscovered/undocumented archaeological resources such as foundation remains, burials, artifacts, or other evidence of human occupation or activity. This includes Cultural Resources identified or have not been previously identified.

When such Cultural Resources are discovered during an undertaking, the contractor or project manager shall notify the CRM immediately of the discovery, who will then notify the NJ HPO (and the ACHP). The CRM will provide assessments of NRHP eligibility and actions to resolve adverse effects; all work shall cease in the area of the discovery; the Historic Property is to be treated as NRHP eligible and avoided until an eligibility determination is made. The CRM may also determine if limited excavation should be conducted to collect available data or if the site context may be stabilized. If disturbance was the result of construction plans that did not account for a known site and such construction will further damage the site, the CRM will ensure no further damage occurs until consultation with the NJ HPO is completed concerning appropriate mitigation actions. Also, if needed, the CRM will develop a treatment plan for the limited data recovery stabilization (with NJ HPO review and concurrence to ensure the plan meets the Secretary of the Interior's Standards.)

The CRM will continue to make reasonable efforts to avoid or minimize harm to the Historic Property until the regulatory requirements are met; and the CRM will develop and implement actions taking into account the adverse effects of the undertaking on the Historic Property to the extent feasible and any comments provided by the NJ HPO (and ACHP) pursuant to 36 CFR Part 800.13(b). The project manager and/or the CRM will monitor the contractor's activities to ensure the integrity of the Historic Property. The CRM should make sure the artifact collection is retained and properly curated in accordance with 36 CFR Part 79 (Section 5.3.2). The CRM will document any damage both photographically and in a written summary report submitted to the NJ HPO to document compliance. Lastly, all documentation of the project, including work write-ups, field reports, and photographs, will be curated as part of the permanent project records and collections

6.2.2 *Archaeological Resources Protection Act (ARPA) Compliance*

If adverse effects and/or ARPA violations have occurred at any of the identified sites, the CRM will notify the EAD, DPW, and the NJ HPO for further protective measures. Reconnaissance and visual verification of the existence of the PA-Sites, and any new archaeological areas, upon routine field and site efforts performed by the CRM will be documented further by surface identification and notation, GPS, and if needed, are

recorded by the State site forms for the NJ State Museum (<http://www.asnj.org/njsmregform.html>) and Smithsonian Trinomial numbers (28-Mr-000) for future Phase I Survey and Phase II NRHP evaluations (Appendix D). For future funding, survey, and preservation efforts for the evaluation of archaeologically sensitive areas, and identification and investigation of archaeological sites, see Section 5.5.

The purpose of ARPA is to prevent vandalism and unregulated excavation and removal of archaeological resources on publicly owned and Indian lands. Typically, a permit is required for the excavation and removal of artifacts from Federal lands, if the activity is not sponsored by a Federal agency. This permit-granting authority resides with the land manager responsible for the property; permits for Army installations are granted by U.S. Army Corps of Engineers District, Real Estate Division (AR 405-80). Obtaining an ARPA permit does not constitute compliance with Section 106 of the NHPA, however. For ARPA compliance, the installation should coordinate with the New York District Planning and Real Estate Divisions to meet permit granting requirements.

All archaeological sites and Cultural Resources are protected under this act and within Section 110 of the NHPA to include sites both known and eligible for listing in the NRHP as well as those properties not yet known or evaluated. As a result, land managers must balance site protection with the needs of the installation's established policies, plans, and mission. Archaeological investigations provide a means for identifying and potentially avoiding site impacts. If project actions have the potential to harm or destroy any Native American tribal, religious or cultural sites, the installation must notify and consult with the appropriate tribes before issuing ARPA permits (SOP 8.2). If projects or individuals impact archaeological resources, care must be taken to ensure the CRM, and possible other qualified individuals or institutions conduct the necessary archaeological investigations or evaluations, and the subsequent archaeological material(s) receives adequate curatorial care (SOPs #2 and 8).

If it appears that individuals or institutions fail to meet or violate the conditions of the permit, Federal land managers must suspend the permit and investigate the reputed violation. Violations of ARPA can result in financial penalties or jail.

6.2.3 *Native American Graves Protection and Repatriation Act (NAGPRA) Coordination*

This section includes the provisions of the NAGPRA (PL 101-601; 25 USC 3013); U.S. Army Guidelines for Consultation with Native Americans, Native Alaskans, and Native Hawaiians; and as amended, 43 CFR Part 10, NAGPRA Regulations. NAGPRA mandates Federal land managers must consult with Federally recognized Indian tribes regarding planned excavations on Federal lands, and establishes procedures Federal agencies must follow in the event of inadvertent discovery of Native American human remains and cultural items. It is important to note NAGPRA applies only to human remains culturally associated with a modern Native American group, and not identified as the remains of a historic settler, murder victim, or like individual. The statute provides a mechanism for determining the disposition for such human remains or cultural items.

NAGPRA also forbids the sale of Native American human remains or of cultural items obtained in violations of the statute.

In the past, the installation has consulted with the Delaware Nation of Oklahoma, Delaware Tribe of Indians of Oklahoma (no longer Federally recognized), and the Stockbridge-Munsee Community of Mohican Indians of Wisconsin. Recently, the CRM revised this consultation list to include other Federally-recognized tribes such as the Absentee-Shawnee Tribe of Oklahoma, Cherokee Nation of New Jersey, and the Shawnee Tribe which may also hold ancestral ties to the New Jersey Highlands. Other tribes may be added to this list in the future as they apply for Federal recognition. If an additional Federally recognized Native American tribe is identified that will have an ongoing interest in installation activities affecting possible descendant remains, funerary objects, sacred objects, or objects of cultural patrimony, then the installation may choose to execute a Comprehensive Agreement with the tribe.

Prehistoric materials have been identified within the installation; however the likelihood of uncovering Native American burials at the installation is low. If burials are uncovered, AR 200-1 and DoDI 4715.uu states the GC must ensure that intentional excavation and response to any inadvertent discovery of NAGPRA-related cultural items be carried out in compliance with all applicable statutory and regulatory requirements of NAGPRA, ARPA, and the NHPA. Compliance with one statutory requirement, therefore, may not satisfy other applicable requirements. All installation activities will strictly avoid the disturbance of human burials, whether marked or unmarked. In all instances where avoidance is not possible, the installation shall consult, as outlined by NAGPRA, with the Native American tribes culturally affiliated with the remains or items on a case-by-case basis. Under no circumstances will any Arsenal activity be allowed to proceed if it will intentionally disturb a known burial and/or sacred site until such time as consultation between the installation and the involved Native American tribes is completed in accordance with 25 USC 3002(d), Sec. 3.

In accordance with 43 CFR Part 10.3 and DoDI 4715.uu, the GC shall take reasonable steps to determine whether a planned activity may result in the intentional excavation or inadvertent discovery of cultural items from the installation. When it is determined these cultural items, which are covered under NAGPRA as determined by the installation in consultation with Native American representatives, may be encountered, and, prior to issuing approval to proceed with the activity, the GC shall carry out the consultation procedures and planning requirements at 43 CFR Parts 10.3, 10.4, and 10.5 as part of the intentional excavation or inadvertent discovery of cultural items, a written Plan of Action must be prepared in accordance with 43 CFR Part 10.5(e).

In accordance with 43 CFR Part 10.5(e), the intentional excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal or tribal lands (after November 16, 1990) is permitted only if:

1. the objects are excavated or removed following the requirements of ARPA and its implementing regulations; and
2. The objects are excavated after consultation with, or in the case of tribal lands,

with the consent of, the appropriate Native American tribe(s) or Native Hawaiian organization pursuant to 43 CFR Part 10. The disposition of the objects is consistent with their custody as described in 43 CFR Part 10.6. Proof of the consultation or consent is shown to the Federal agency GC or other official (the CRM) responsible for the issuance of the required permit.

If the inadvertent discovery occurred in connection with an ongoing activity at the installation, the person providing the initial notice described above must stop the activity in the area of the inadvertent discovery and make a reasonable effort to protect the human remains, funerary objects, or objects of cultural patrimony.

Upon having received notification of the actual or potential disturbance or the discovery of a human burial site, human remains, or burial/sacred goods, the installation shall, as soon as possible, but no later than three (3) working days after receipt of the notification report the receipt of such notification by telephone, with written confirmation, to the appropriate Native American tribal contact, NJ HPO and the ACHP. The notification shall include pertinent information as to the kinds of human remains, funerary objects, sacred objects, or objects of cultural patrimony inadvertently discovered their condition, and the circumstances of their findings.

6.3 ARCHITECTURAL RESOURCES AND HISTORIC DISTRICTS MANAGEMENT PLAN

All work on buildings listed in the NRHP or determined eligible for listing must be planned and executed in accordance with the *Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties* (Appendix F). This recommendation includes new construction adjacent to Historic Properties and districts (also called Design Build). In addition, projects impacting additional buildings over 50 years of age will require the review of the CRM, and if needed the NJ HPO.

Project undertakings buildings, including general maintenance, are handled through work orders, with DPW. As mentioned, this work order process is managed through the MAXIMO server database; however for buildings if a work order comes to DPW for a NRHP eligible building, even general interior maintenance issues, the CRM is automatically sent an email to make the appropriate SHPO related comments (no adverse effect, impact, etc.). All work orders reviewed by the CRM are catalogued and recorded weekly through metrics for CLS. To note as mentioned previously, at an ACSIM level all work orders for real property at the installation level are recorded through the IFS and ISR. According to their encompassing RP regulations, it is an annual requirement for installations to assess the condition of its infrastructure using Army-wide inspection standards. This annual evaluation contributes to defining overall Infrastructure readiness and calculates estimated restoration costs to improve the quality of facilities. Due to these annual requirements, all of the installation's buildings have a cyclical maintenance plan.

Generic Activities- these are activities conducted at the installation not generally

part of a Master Plan and include, for example, routine (minor) exterior maintenance, emergency roof repairs, caulking, minimally destructive electrical and plumbing work, water line break/leak repair, interior painting. Unless these activities are performed on NRHP-eligible structures and they are significantly destructive (e.g., removal or replacement of a wall or window), they will not require SHPO review or consultation;

Specific Activities of review and concern- these are actions likely to have an effect (sometimes adverse) on Cultural Resources. These include the demolition of structures within the proposed Historic Districts or of structures not previously evaluated. These actions also include major alterations to a contributing structure within the three districts. These consist of alteration of structural elements such as windows, doors, facades, siding, roofs, grounds, etc. New construction within an historic district is also an action of concern since it may impact the historic fabric or setting of the district;

To the greatest extent possible, original/ significant volumes should be retained, and character-defining features, such as doors, wainscot, trim, and exposed structural systems, where extant, should be preserved. Modifications should be made in compatible materials, and in a manner that is reversible and can be removed without damaging historic materials. Additionally in general, interior alterations should be undertaken in a manner compatible with the character of the original or significant interior. To the greatest extent possible, original/significant volumes should be retained, and character defining features, such as doors, wainscot, trim, and exposed structural systems, where extant, should be preserved. Modifications should be made in compatible materials, and in a manner that is reversible and can be removed without damaging historic materials. Many of the installation's historic buildings have been continuously updated throughout the years that interior work orders are usually not an issue. However, CRM review and potential NJ HPO consultation should always be considered when planning interior projects.

In considering the application of these recommendations, the period of significance for the individual structure must be considered. This period of significance identifies the period of the structure's importance in the context of Picatinny as a whole. Changes made to the individual structure during this period are to be considered significant and should be retained or appropriately rehabilitated in accordance with *the Secretary of Interior's Standards*. Should it be determined work cannot be undertaken in a manner consistent with these recommendations and *The Secretary's Standards*, mitigation and MOA measures should be considered as discussed in other sections of this document.

6.3.1 *Preservation*

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of a Historic Property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of

this treatment; however, the limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Standards for Preservation:

- 1) A property shall be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property shall be protected and, if necessary, stabilized until additional work may be undertaken;
- 2) The historic character of a property shall be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property shall be avoided;
- 3) Each property shall be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features shall be physically and visually compatible, identifiable upon close inspection, and properly documented for future research;
- 4) Changes to a property that have acquired historic significance in their own right shall be retained and preserved;
- 5) Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved;
- 6) The existing condition of historic features shall be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material shall match the old in composition, design, color, and texture,
- 7) Chemical or physical treatments, if appropriate, shall be undertaken using the gentlest means possible. Treatments causing damage to historic materials shall not be used,
- 8) Archaeological resources shall be protected and preserved in place. If such resources must be disturbed, mitigation measures shall be undertaken.

6.3.2 *Rehabilitation*

Rehabilitation is defined as the act or process of making possible an efficient compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Standards for Rehabilitation:

- 1) A property shall be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships;
- 2) The historic character of a property shall be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property shall be avoided;
- 3) Each property shall be recognized as a physical record of its time, place and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historical properties, shall not be

- undertaken;
- 4) Changes to a property that have acquired historic significance in their own right shall be retained and preserved;
 - 5) Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved;
 - 6) Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and, where possible, materials. Replacement of missing features shall be substantiated by documentary and physical evidence;
 - 7) Chemical or physical treatments, if appropriate, shall be undertaken using the gentlest means possible. Treatments causing damage to historic materials shall not be used;
 - 8) Archaeological resources shall be protected and preserved in place. If such resources must be disturbed, mitigation measures shall be undertaken;
 - 9) New additions, exterior alterations, or related new construction shall not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and shall be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment;
 - 10) New additions and adjacent or related new construction shall be undertaken in such a manner, if removed, in the future, the essential form and integrity of the Historic Property and its environment would be unimpaired.

6.3.3 *Restoration*

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project.

Standards for Restoration:

- 1) A property shall be used as it was historically or be given a new use which interprets the property and its restoration period;
- 2) Materials and features from the restoration period shall be retained and preserved. The removal of materials or alteration of features, spaces, and spatial relationships that characterize the period shall not be undertaken;
- 3) Each property shall be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate and conserve materials and features from the restoration period shall be physically and visually compatible, identifiable upon close inspection. The property shall also be properly documented for future research;
- 4) Materials, features, spaces, and finishes that characterize other historical periods shall be documented prior to their alteration or removal;

- 5) Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize the restoration period shall be preserved;
- 6) Deteriorated features from the restoration period shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture and, where possible, materials;
- 7) Replacement of missing features from the restoration period shall be substantiated by documentary and physical evidence. A false sense of history shall not be created by adding conjectural features, features from other properties, or by combining features that never existed together historically;
- 8) Chemical or physical treatments, if appropriate, shall be undertaken using the gentlest means possible. Treatments causing damage to historic materials shall not be used;
- 9) Archeological resources shall be protected and preserved in place. If such resources must be disturbed, mitigation measures shall be undertaken;
- 10) Designs that were never executed historically shall not be constructed.

6.3.4 *Reconstruction*

Reconstruction is defined as the act of [sic] process of depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape, building, structure, or object for the purpose of replicating its appearance at a specific period of time and in its historic location.

Standards for Reconstruction:

- 1) Reconstruction shall be used to depict vanished or non-surviving portions of a property when documentary and physical evidence is available to permit accurate reconstruction with minimal conjecture, and such reconstruction is essential to the public understanding of the property;
- 2) Reconstruction of a landscape, building, structure, or object in its historic location shall be preceded by a thorough archeological investigation to identify and evaluate those features and artifacts which are essential to an accurate reconstruction. If such resources must be disturbed, mitigation measures shall be undertaken;
- 3) Reconstruction shall include measures to preserve any remaining historic materials, features, and spatial relationships;
- 4) Reconstruction shall be based on the accurate duplication of historic features and elements substantiated by documentary or physical evidence rather than on conjectural designs or the availability of different features from other Historic Properties. A reconstructed property shall re-create the appearance of the non-surviving Historic Property in materials, design, color, and texture;
- 5) A reconstruction shall be clearly identified as a contemporary re-creation;
- 6) Designs that were never executed historically shall not be constructed.

The intent of *The Secretary's Standards* is to preserve as much historic material as possible, and to replace deteriorated and missing elements in kind, or with new

materials are compatible with the character of the original.

6.3.5 *Structural Undertakings*

The following is a discussion of project undertakings that regularly affect structures on the installation.

6.3.5.1 *Site Construction and Design Build*

New construction has the potential to damage and destroy significant surrounding material features, and to alter the district's architectural fabric and character. New site construction, design build, and self-help projects within historic districts and/or viewshed of a district or historic building must be reviewed by the CRM and involve NJ HPO consultation (Sections 6.1 and 6.3.5.7). These projects must also follow the Installation Design Guide. Projected structural design appearance and specifications should follow these consultations.

Design build projects are contracted for a single entity known as a design-builder (Picatinny Garrison, DPW, tenant users', and/or the USACE). This system is used to reduce the delivery schedule by overlapping the design phase and construction phase of a project and to minimize the project risk for an owner.

For the installation's historic districts (Section 5.1.3), new construction must conform with a similar and in-kind design to the surrounding architectural style. For example, new structures being built within or adjacent to the Administrative and Research Historic District, should conform with brick construction and be patterned similar to major contributing surrounding buildings like Building 151, 162, 171, and 183. If new housing is to be constructed, depending on location, it should also conform to surrounding architectural styles of current housing by Balfour Beatty. Additionally, new structures within the remaining historic districts should be of concrete style and/or painted white, concrete gray, or tan/beige. The installation mission prefers a tan/beige exterior with dark green trim on most test range buildings. As a result, NJ HPO consultation is needed for these projects.

6.3.5.2 *Accessibility*

Most historic buildings were not constructed to be readily accessible by persons in wheelchairs or with other special needs. While some State and Federal laws now require buildings to be accessible, the most comprehensive document affecting all states is the ADA, which established access as a civil right. The threshold at which requirements for accessibility must be met may vary by code and by the scope of a project being undertaken.

Improvements to increase access within the building or site range from inexpensive ramps to elaborate and expensive interior and exterior alterations. For historic structures, all proposed alterations must be considered in the context of the

structure's historic significance and its character-defining features. All exterior accessibility improvements must be in-kind to the surrounding entrance(s) and lobby foyer(s) of the building, district, and/or viewshed (ie. concrete matching for sidewalks, exterior stairwell improvements, and colorizing of wheel chair lifts).

The ADA requires both buildings and sites of public accommodations be evaluated to determine if accessibility barriers exist. The evaluation will consider an array of features including building and site entrances, surface textures, widths and slopes of walkways, parking, grade changes, weight, size and configuration of doorways, interior corridors and path of travel restrictions, elevators, and public toilets and amenities. This evaluation is often done as part of a complete accessibility survey of the building. Required improvements are detailed in local, state or federal regulations, and most comprehensively in the ADAAG.

6.3.5.3 *Additions*

The expansion of an existing structure is a sign of its vitality and natural need to change. When located and designed with sensitivity, an addition can make a positive contribution to the historic structure and its surroundings. Additions have the potential to damage and destroy significant historic features, and to alter the structure's architectural fabric and character. Therefore, the decision to add on to existing structures should be made only after alternatives for providing additional space have been explored.

According to the NPS, an addition is acceptable if it preserves significant historic materials and features; preserves the historic character; and protects a structure's historic significance by making a visual distinction between old and new. In order to avoid damage or destruction of significant historic materials, the actual, physical connection to the historic structure should be minimized. Where possible, the addition should be constructed on secondary elevations not highly visible or ornamented. The new addition should not dominate the original structure in size, and should be compatible in scale, color, material and character. The appropriate size for an addition varies according to the original structure and its context. Finally, a visual distinction should exist between the original structure and the new construction. The addition should be obvious and reversible, that if removed at a later date, the structure will not have been irretrievably altered.

6.3.5.4 *Anti-Terrorism Force Protection (ATFP) Upgrades*

Unified Facilities Criteria (UFC) 4-010-01 establishes the minimum standards for DoD buildings to be upgraded to Anti-Terrorism Force Protection (ATFP) requirements (8 October 2003; http://www.wbdg.org/references/pa_dod.php). These criteria provide "planning, design, construction, sustainment, restoration, and modernization" provisions needed for the installation's buildings as most structures offer little protection from terroristic attacks (UFC 4-010-01, Foreword). "Implementation of these standards to bring an entire building into compliance is mandatory for all DoD building renovations, modifications, repairs, and restorations where those costs exceed 50% of the replacement

cost of the building”, to include new buildings (UFC 4-010-01, 1-6.2.1).

UFC 4-010-01, Section 1-9 “Historic Preservation Compliance” states

Historic Properties and archaeological sites on military land are protected with other facilities from terrorism...Implementation of this policy, however, shall not supersede DoD’s obligation to comply with federal laws regarding Cultural Resources to include NHPA and ARPA. Installation personnel need to determine possible adverse effects upon an historic structure and/or archaeological resource prior to anti-terrorism standard undertakings and consult accordingly...An agency should not allow for prolonged consultations that conflict with the eminent need to implement anti-terrorism standards.

For DoD buildings, the ATFP design strategies to meet the UFC are as follows with historic preservation concerns noted:

- maximize standoff distance- historic building and district viewsheds, and new ground disturbance;
- preventive building collapse for buildings three (3) stories or higher- historic building and district viewsheds, interior and exterior modifications;
- minimize hazardous flying debris and window replacements- historic building and district viewsheds, interior and exterior modifications;
- airborne contamination, and heating, ventilation, and air conditioning systems- historic building and district viewsheds, interior and exterior modifications.

All historic buildings and districts will be affected by these regulations and should adhere to both UFC and NHPA requirements with in-kind designs as feasibly possible (Section 6.1).

6.3.5.5 *Ordnance Testing and Safety Upgrades*

Similar to ATFP requirements and structural upgrades, Army Military Command (AMC) Regulation 385-64 “U.S. Army Explosives Safety Program, AMC Regulation 385-100 “Safety Manual”, DoD 6055.9-STD “Ammunition and Explosive Safety Standards”, Occupational Safety and Health Act (OSHA) are minimum requirements for the installation’s test range facilities (http://www.wbdg.org/ccb/ARMYCOE/ARMYCRIT/ar385_64.pdf; http://www.army.mil/usapa/epubs/pdf/p385_64.pdf). Due to these requirements, the Picatinny Safety Office performs a risk assessment and establishes SOPs on all buildings performing industrial operations involving ammunition and explosives.

Moreover, like ATFP requirements, safety upgrades shall not surpass the installation’s obligation to comply with federal laws, including NHPA and ARPA. Installation personnel need to determine possible adverse effects upon an historic structure and/or archaeological resource prior to safety upgrade undertakings and consult accordingly. All historic test range buildings and historic districts will be affected by

these regulations and should adhere to AMC, DoD, OSHA, and NHPA requirements with in-kind designs as feasibly possible (Section 6.1).

6.3.5.6 *Landscaping and District Features*

Landscaping, like plants and trees, are very fluid elements of a Historic Property and district, and have constantly changed over the years that obviously, most of the original landform features and plantings historically part of Picatinny have been removed or added to over time. Original site features obtained with at least 50 years of age and retaining their original condition should be repaired or replaced in kind. These features include, but are not limited to, curbing and sidewalks, benches, fountains, stone walls, fences, lanterns and post lights, posts, pillars and gates. Individual features in a property's landscape should never be viewed in isolation, but rather in relationship to its surrounding setting and overall fabric.

New plantings and landscaping should be in keeping with the original design intent of the facility. Historic maps and site plans of individual structures may serve as a guide to determining historic configurations. Mature plantings should be maintained to the extent possible: where replacement is necessary, it should be done in species matching the original.

The simplest means of preserving landscape features and plantings is replacement in-kind or with similar types of plants, if feasible. This sort of seasonal planting occurs most likely during the spring if annuals and flowerbeds are being planted and does not involve external SHPO consultation. The replacement of shrubs, herbaceous or woody plants or perennials, and even small deciduous trees with a different variety or exotic species in their place would involve coordination with the CRM and consultation with SHPO. Any reformation or change to manicured lawns and the surrounding landscape features, repaving of sidewalks, installation of exterior lighting, and realigning of cul-de-sacs and road patterns within historic districts would most definitely involve coordination with the CRM and consultation with SHPO. Overall, landscaping should not overwhelm a property, nor conceal or obscure its primary facades, along with properties adjacent to it.

Furthermore, historic district viewsheds and landscape considerations are displayed throughout Section 5. All surrounding historic district roads are considered part of the affected viewshed area.

6.3.5.7 *Unintentional or Inadvertent Damage to an Eligible Architectural Resource*

In the case of unintentional/accidental damage to an NRHP eligible architectural resource, including buildings, structures, engineering materials, and/or features, the CRM should be notified of the damage immediately and all work in the immediate area of the damage should cease. The following treatment plan should then be put into place:

1. the CRM will document any damage in a written summary report with

- photographs;
2. the CRM, in consultation with a qualified historic architect, will determine whether repair or reconstruction can be accomplished in accordance with the *Secretary of the Interior's Standards for Rehabilitation* and thereby have no adverse effect;
 3. the project manager and a qualified historic architect, under the direction of the CRM, will develop a treatment plan for repair or rehabilitation, including architectural specifications and photographs;
 4. the CRM will submit this treatment plan for review of the NJ HPO and to ensure it meets the *Secretary of the Interior's Standards*. If the NJ HPO concurs, then the treatment plan shall be implemented. If the NJ HPO does not concur, then the Section 106 compliance procedures described in SOP #1 should be followed.
 5. after consultation, the CRM will inform the project manager and contracting officer of the appropriate specifications within the treatment plan must be included and adhered to within the contract;
 6. the project manager will familiarize the contractor with significant historic features for necessary protective measures;
 7. the project manager and/or the CRM will monitor the contractor's activities to ensure the integrity of the historic features and the property itself;
 8. the CRM shall submit photographs of the Historic Property taken upon completion of the project to the NJ HPO to document compliance with the Secretary of the Interior's Standards for Rehabilitation;
 9. the CRM shall retain documentation of rehabilitation, including work write-ups and photographs, as part of the permanent project records.

6.4 DEMOLITION AND ECONOMIC (STRUCTURAL) ANALYSIS

DoDI 4715.uu (DRAFT, Section 6.5) requires the installation conduct an economic analysis of historic buildings and structures being considered for demolition and replacement. Any demolition or disposal action must involve DPW, EAD, and the CRM, among other installation organizations and personnel. By including the CRM, an opportunity to identify the necessity of economic analysis early in the planning stages of a project will be established, thereby reducing time, frustration, and cost associated with delays and redesigns of projects found to not conform to the Secretary of the Interior's Standards. As a general rule, when the economic analysis demonstrates rehabilitation costs exceed 70 % of replacement costs, replacement construction, may be justified. The 70 % value may be exceeded, however, where the significance of a particular historic structure warrants special attention, or if warranted by the life-cycle cost comparisons.

The NHPA requires Historic Properties be considered for reuse to the maximum extent feasible before considering their disposal. In other words, demolition of structures listed or determined eligible for listing in the NRHP should remain as a last option, only after all other options have been considered, and proven infeasible, including mothballing. The decision to reuse, replace, or demolish a facility needs to be justified with a least cost, life-cycle economic analysis. This same approach should be considered

when major character-defining elements (e.g., windows, doors) are replaced with new materials. A number of computer software programs are currently available for this purpose.

The architectural quality of materials and the overall finished product also has inherent value as new buildings rarely possess the fine quality elements/features of historic structures. Such inherent values may be calculated by the rent a potential tenant may be willing to pay for the prestige of locating in a historic building over the current real estate market rate. As an example, assume one of the buildings in a historic district is suggested to be replaced at an initial cost of \$1,200,000 and a life cycle cost of a new structure at \$3,800,000 (over 40 years) for a total of \$5,000,000. This would be justified if the initial and life cycle cost of rehabilitation exceeds \$3,500,000. Since it is a NRHP structure, however, this value can be somewhat higher depending on its historic importance.

Furthermore, a Life Cycle Cost (LCC) Analysis allows for the comparison of costs of projects at different times. There are two approaches commonly used for this purpose: the present worth approach and the equivalent uniform annual cost. The former is the sum of all initial and future costs of a project individually converted into their present value equivalents. The latter is the annual total of individual costs converted into their uniform annual costs over the life of the building.

Additionally, in comparing investment alternatives, such as in determining whether or not to pay more initially for a product with a longer life, a savings-investment ratio (SIR) may be used. The SIR formula would be the difference of the LCC of the alternatives over the difference in their initial costs (ICST):

$$\text{SIR} = (\text{LCC A} - \text{LCC B}) / (\text{ICST A} - \text{ICST B})$$

The initial cost of buildings is only a fraction of the long-term cost of ownership and operation. The true cost of new construction must include not only the associated labor and materials, but demolition and disposal costs, re-landscaping, cost and associated time for environmental reviews, long-term costs, life-cycle costs, utility costs, replacement costs, and other pertinent factors. Generally, replacement costs should not be based on replacement in kind, but on a design architecturally compatible with the Historic Property, unless the feature is critical to the integrity of the historic building or district. Also, often overlooked when considering the cost of new construction is the inherent value of existing building elements such as foundation, footings, exterior walls, floor structure, and stairs. These elements could add considerable cost in a new structure, often with a reduced expected life. An additional consideration is time; rehabilitation often results in considerable savings in construction time and can many times be completed at a fraction of the time required for the construction of a new facility of comparable size and complexity.

Alternatively, when demolishing a historic structure with an MOA proposed, consider relocating the structure nearby for historic district and setting viewshed

concerns, signage, and journal articles as part of resolving adverse effects (36 FCR 800.6). Funds can also be used off the installation to benefit similar projects within the surrounding communities having like goals. Lastly, when demolishing historic or non-historic buildings, reuse of salvageable materials should be considered as part of Leadership in Energy and Environmental Design (LEED) Green Building Rating System and certification and in keeping with like and in-kind design strategies for NJ HPO consultation. These alternative innovative mitigation strategies are a part of the Army today and can have a public benefit.

6.4.1 *Mothballing*

When all means of finding a productive use for a historic building have been exhausted or funds are not currently available to render a deteriorated structure into a usable building, it may be necessary to close the building temporarily to protect it from the weather as well as to secure it from vandalism. Mothballing, as the process is known, is a necessary and effective way to protect a building while its future is being determined. Mothballing is a temporary solution for the vacant building provides for its protection during the period when its future is uncertain or rehabilitation is not possible. Mothballing includes the temporary closure of the building to provide protection from the weather and from vandalism.

The proper procedures for mothballing a building include:

- Documentation- of the architectural and historical significance of the building along with the preparation of a condition assessment of the building;
- Stabilization- of the building(s) structurally based on the condition assessment, along with the extermination or control of pests, including termites and rodents, and protecting the exterior from moisture penetration; and finally
- Mothballing- by securing the building and its component features to reduce vandalism or break-ins, along with providing adequate ventilation to the interior. Secure or modify utilities and mechanical systems. Develop and implement maintenance and monitoring plan for protection. Mothballing measures should not result in damage and each treatment should be weighed in terms of its reversibility and overall benefit to the structure. The three highest priorities for a structure while it is mothballed are: to protect it from sudden loss; to weatherize and protect the building to stop moisture penetration; and to control the humidity levels inside once the building has been secured (see Preservation Brief No. 31: Mothballing Historic Buildings for further information).

If a vacant property has been declared unsafe, like many across the installation have been, stabilization and mothballing may be the only way to protect the building from deterioration. Also, providing temporary protection and stabilization for vacant historic buildings can slow deterioration while a compatible use for the building is found.

Prior to mothballing, the building's significance and condition should be documented, and should include the dates of construction and any alterations, types of building materials, construction techniques, and significant detailing. To the extent possible, a complete copy of the building records, including historic materials and photographs, should be established. The condition assessment should describe and evaluate all of the major elements of the building, e.g., foundations, structural systems, plumbing, electrical, etc., and identify any immediate, necessary repairs. A photographic videotaped record of the building should be created. Stabilization work, those measures that can slow the deterioration of the building, can include the reinforcement of structural members and the roof (where snow loads are anticipated) as well as the bracing of areas damaged by moisture, insects or other causes. All pests and animal infestation must be eliminated, and insecticides or preservatives may be appropriate in damaged areas. Existing openings such as chimney flues, vents, grills, and louvers should be screened to eliminate future unwanted visitation.

Moisture sources around and within the building should be limited. Roofs, flashing, gutters and down spouts should be in good condition: all necessary repairs should be given a priority and undertaken in an appropriate and lasting manner. Holes in masonry or wood siding should be patched with matching materials in a manner described in other sections of this plan. Tarpaulins, tar patches, and similar immediate, short term repairs are not appropriate.

Positive drainage away from the building should be maintained, and may require regrading or modifications to existing drainage or gutter systems. Vegetation should be kept under control by the use of polyethylene sheeting or fiber mesh covered with gravel, except in buildings with known rising damp, where polyethylene should not be used. Mothballed buildings should be secured from unwanted entry. Buildings should be boarded up, at least at the basement and first floor levels, using plywood, corrugated panels, metal grates, or cinder or cement blocks. As feasible, these barriers should be screwed, rather than nailed, to the building, and installed in a manner that does not destroy any historic materials. Exterior doors should be reinforced and receive solid locks, or be temporarily replaced if adequate reinforcement is not possible. If decorative or valuable elements exist within the building (mantles, copper, etc.), it may be appropriate to temporarily relocate these to a more secure location.

Windows should also be secured. In some cases, closing shutters or installing new, historically compatible shutters may suffice, however, where higher security is deemed necessary, metal sheets or concrete blocks may be appropriate, although vented plywood is generally adequate and less damaging. Window infill, as well as all mothballing and stabilization treatments, should be reversible and not result in permanent damage to the building. Ventilation to allow adequate interior air exchange and limit the likelihood of mold, rot, and insect infestation is critical. Although specific requirements vary according to location and interior finishes, a vented or louvered opening generally should be 5 to 10 percent of a floor's square footage. The requirements for heat and ventilation also vary. Typically, a minimum heat of 45°F (7°C) and forced summer ventilation should be provided. The exact amounts should be determined with the

assistance of a mechanical engineer. It is generally desirable to provide a low level of heat, sufficient to maintain a temperature just above freezing, and to provide mechanical ventilation in the summer months and in more humid climates. This low level heat may require the modification of existing systems. If heat is provided, the building must be regularly monitored. If the building still has water services available, glycol (with EAD approval) should be added to keep the system from freezing in the event of a power failure, and the supply should be capped at the meter. If regular monitoring is not available, not only should heat not be provided, but gas systems and gas lines should be shut off, oil tanks should be filled to eliminate condensation or drained, and hot water radiators should be drained. In all cases, sewer lines should be capped off or filled with glycol.

Any heating or forced ventilation system will require some electrical power. Unless the condition of all components of the electrical service and distribution system can be inspected, a new, minimally-sized, temporary electrical service is recommended. Where possible, a hard wired fire (smoke detector) and security (intrusion) monitoring service should be provided. Additional security measures may include the installation of lightning rods, a high security fence, and exterior lighting.

One of the most critical components of mothballing a building is the development of a sound maintenance and monitoring plan. The building should be regularly visited, and a list of specific evaluations developed and conducted at regular intervals. The safest buildings are those visited most frequently.

Finally, to the extent possible, the mothballed building should not look vacant or be an eyesore. Mothballing work should be neatly implemented, and vegetation should be controlled. Signage may also be appropriate to provide public information on the significance of the building and the protective measures being undertaken.

6.5 CONCLUSIONS: ASSET REPORTING AND CULTURAL RESOURCE MANAGEMENT GOALS

As mentioned in Section 3, the Army's vision statement for historic preservation is to "be a national leader in historic preservation through stewardship of our most significant Historic Properties and protection of the Nation's heritage" (Department of the Army 2003; <http://aec.army.mil/usaec/cultural/camplan.pdf>). Based on this management plan, the goals needed for the next five (5) years for the ICRMP, the Cultural Resources Management Program, and Team Picatinny should be:

- continue accurate coordination with NJ HPO, and improve working relationships with Federally recognized Tribes, local historical societies, the public, and other interested Stakeholders;
- training for DPW, RP, engineering, and maintenance work order personnel of historic preservation and Cultural Resource Management requirements to allow for better execution across the installation for meeting the *Secretary of Interior's Standards for the Treatment of Historic Properties*.

- accurate reporting of Historic Properties and all types of Cultural Resources encountered, including archaeological collections which are increasing progressively as surveys continue. This is required by ACSIM, AEC, and IMCOM and is the way of the future for the DoD to track its heritage assets. This is needed because research has shown prior (and current) building lists were inaccurate and missing substantial data, PA-Sites are being relocated, new archaeological sites are being identified, and the sensitivity model is being proven effective. Accurate heritage asset reporting is part of geospatial data standards integration across DoD installations and Army requirements. This data should be shared with NJ HPO and other interested Stakeholders as needed.

7.0 References Cited

Acroterion

- 1986 *Morris County Historic Sites Survey: New Jersey Historic Sites Inventory Morris County Cultural Resources Survey*. Acroterion, n.p. Prepared for the Morris County Heritage Commission, Morristown, New Jersey.

Advisory Council on Historic Preservation

- 2002 *Protecting Historic Properties: A Citizen's Guide to Section 106 Review*. <http://www.achp.gov/pubs-citizensguide.html>.
- 2007 *Preserve America Executive Order: Report to the President*. <http://www.achp.gov/pubs-eoreport.html>.

Allen, Frederick

- 1996 They're Still There. *American Heritage of Invention & Technology* 11 (4):4-5.

Andrus, Patrick W.

- 1999 *Guidelines for Identifying, Evaluating, and Registering America's Historic Battlefield*. National Register Bulletin No. 40. U.S. Department of the Interior, National Park Service, Washington, D.C. <http://www.nps.gov/history/nr/publications/bulletins/nrb40/>.

Army Research, Development, and Engineering Center (ARDEC)

- 1995 *ARDEC 95*. U.S. Army Armament Research, Development and Engineering Center (ARDEC), Picatinny Arsenal, New Jersey, U.S. Government Printing Office. Washington, D.C.

Army Research, Development, and Engineering Center (ARDEC) Museum

- n.d. Photographic Collection. On file, ARDEC Museum, Picatinny Arsenal, NJ.

Arsenal Facilities and Equipment Division

- 1968 *Building Information Schedule (AR 210-20)*, Picatinny Arsenal, Dover, New Jersey. Approved for the Installation Planning Board, Reports Control Symbol ENG-126, DA FORM 2368-R.

Beers, Frederick W.

- 1868 *Atlas of Morris County, New Jersey*. F.W. Beers, A.D. Ellis, and G.G. Soule, New York.

Bender, Susan J., and Edward V. Curtin

- 1990 *A Prehistoric Context for the Upper Hudson Valley: Report of the Survey and Planning Project*. Department of Sociology, Anthropology, and Social Work, Skidmore College, Saratoga Springs, New York. Prepared for the New York State Office of Parks, Recreation, and Historic Preservation, Peebles Island, Waterford,

and the National Park Service.

Bianchi, Leonard

- 2007 Archaeological Monitoring, Building 337 Relocation, Picatinny Arsenal. Prepared for the Cultural Resources Manager and Chugach Industries, Inc., US Army, Picatinny Arsenal, New Jersey. RBA Group, Inc.: Morristown, New Jersey.

Binford, Lewis R

- 1979 Organization and Formation Processes: Looking at Curated Technologies. *Journal of Anthropological Research* 35:255-273.
- 1980 Willow Smoke and Dogs' Tails: Hunter-Gatherer Settlement Systems and Site Formation. *American Antiquity* 45:4-20.

Boston Affiliates, Inc.

- 1993 *Annotated Catalog of Building Drawings and Evaluation of Architectural Features, Picatinny Arsenal, Dover, New Jersey*. Boston Affiliates, Inc., Boston. Prepared for the U.S. Army Corps of Engineers, New York District, New York.

Brasser, T.J.

- 1978 Early Indian-European Contacts. In *Northeast*, edited by Bruce G. Trigger, pp. 78-88. Handbook of North American Indians, vol 15, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Braun, David P.

- 1983 Pots as Tools. In *Archaeological Hammers and Theories*, edited by James A. Moore and Arthur S. Keene, pp. 107-134. Academic Press, New York.

Bureau of Electronic Publishing, Inc.

- 1995 *Multimedia U.S. History*. Bureau of Electronic Publishing, Inc. Parsippany, New Jersey.

Bureau of Indian Affairs

- 1998 *Tribal Leaders and BIA Representatives Directory*. U.S. Department of the Interior, Bureau of Indian Affairs, Washington, D.C.

Burke, Thomas E., Jr.

- 1991 *Mohawk Frontier: The Dutch Community of Schenectady, New York, 1661-1710*. Cornell University Press, Ithaca, New York.

Butler, William B.

- 1987 Significance and Other Frustrations in the CRM Process. *American Antiquity* 52: 820-829.

Candee, Richard M.

- 1970 Merchant and Millwright: The Water Powered Sawmills of the Piscataqua. *Old Time New England* 60:131-49.
- Cassedy, Daniel, Paul Webb, Tracy Millis, and Heather Millis
 1993 New Data on Maize Horticulture and Subsistence in Southwestern Connecticut. Paper presented at the Annual Meeting of the Northeastern Anthropological Association, Danbury.
- Cesarski, Ellen
 1996 Prehistoric Land Use in the Hoosic Drainage: An Analysis of Extant Collections from Two Glacial Lake Basins. In *A Golden Chronograph for Robert E. Funk*, edited by Chris Lindner and Edward V. Curtin, pp. 85-97. Occasional Publications in Northeastern Anthropology, No. 15, Archaeological Services, Bethlehem, Connecticut.
- Chesler, Olga (ed)
 1982 *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.
- Cinquino, M., K. Nolte, F. Schieppati, M. Steinback, R. Hanley, M. Raber, E. Curtin, M. Kaplan, G. McGowan, and K. Nelson
 2000 *Integrated Cultural Resource Management Plan (ICRMP) for Picatinny Arsenal, Dover, Morris County, New Jersey*. Panamerican Consultants, Inc. Buffalo, New York. Prepared for U.S. Army Corps of Engineers, New York District.
- Cinquino, Michael A., Marilyn E. Kaplan, Frank J. Schieppati, Ph. D., Mark A. Steinback, Edward V. Curtin, and Kerry L. Nelson
 1996 *Cultural Resource Management Plan for the Picatinny Arsenal, Rockaway Township, Morris County, New Jersey*. Panamerican Consultants, Inc. Buffalo, New York. Prepared for U.S. Army Corps of Engineers, New York District.
- Cronon, William
 1984 *Changes in the Land: Indians, Colonists, and the Ecology of New England*. Hill and Wang, New York.
- Cross, Dorothy
 1941 *Archaeology of New Jersey, Volume 1*. Archaeological Society of New Jersey and New Jersey State Museum, Trenton.
- 1956 *Archaeology of New Jersey, Volume 2*. Archaeological Society of New Jersey and New Jersey State Museum, Trenton.
- Curtin, Edward V.
 1992 *Prehistory of Eastern New York*. Manuscript in author's possession, Castleton,

New York.

- 1996 Late Archaic Period Technology and Land Use Patterns: Lessons Learned from the Mattice No. 2 Site. In *A Golden Chronograph for Robert E. Funk*, edited by Chris Lindner and Edward V. Curtin, pp. 119-128. Occasional Publications in Northeastern Anthropology, No. 15, Archaeological Services, Bethlehem, Connecticut.

Curtin, Edward V., and Karen Kramer

- 1990 *Analyses Mitigating Construction Impacts Upon Two Small Prehistoric Sites in the Pine Bush, Colonie, New York*. Prepared for Solomon and Solomon, P.C., and the Laberge Group via Bagdon Environmental Associates, Inc. Delmar, New York.

Deetz, J.F.

- 1977 *In Small Things Forgotten*. Anchor-Doubleday, Garden City, New York.

Dent, Richard. J.

- 1991 Archaeology in the Upper Delaware Valley: The Earliest Populations. In *The People of Minisink*, edited by D. G. Orr and D. V. Campana, pp. 117-144. National Park Service, Philadelphia.

Department of the Army

- 1997 *Cultural Resources Management*. Headquarters, Director of Environmental Programs, Army Regulation AR 200-4, Department of the Army, Washington, D.C. 30 October 1997.

- 2007 Army Historic Preservation Campaign Plan.
<http://aec.army.mil/usaec/cultural/camplan.pdf>.

Department of the Navy

- 1997 *Chronology of Significant Events in Naval Aviation*. Naval Historical Center Web Page, Department of the Navy, Naval Aviation Branch, Washington Navy Yard, Washington, D.C. <http://www.history.navy.mil/branches/org4-5.htm>.

Dew, Charles B.

- 1994 *Bond of Iron: Master and Slave at Buffalo Forge*. W.W. Norton & Co., New York.

Divine, Robert A., T.H. Breen, George M. Fredrickson, and R. Hal Williams

- 1995 *America Past and Present*. Vol. 1, 4th ed. HarperCollins Publishers, New York.

Dulles, Foster Rhea, and Melvin Dubofsky

- 1984 *Labor in America: A History*. 4th ed. Arlington Heights, Illinois.

Eby, Carl F.

- 1976 *Soil Survey of Morris County, New Jersey*. United States Department of Agriculture, Soil Conservation Service, in cooperation with New Jersey

Agricultural Experiment Station, Cook College, Rutgers University, and the New Jersey Department of Agriculture, State Soil Conservation Committee, U.S. Government Printing Office, Washington, D.C.

Eisenberg, Leonard

1978 *Paleo-Indian Settlement Pattern in the Hudson and Delaware River Drainages*. Occasional Publications in Northeastern Anthropology No. 4, Rindge, NH.

1986 *Prehistory of the Mid-Hudson Valley*. Manuscript on file, Skidmore Archaeological Survey, Saratoga Springs, New York.

Ellis, David M., James A. Frost, Harold C. Syrett, and Harry J. Carmen

1967 *A History of New York State*. Cornell University Press, Ithaca, New York

Englund, John

1982 Sawmills of Worcester County. File report, Old Sturbridge Village, Sturbridge, New York.

Feder, K. L.

1994 *A Village of Outcasts*. Mayfield, Mountainview, California.

Fischler, B.R., and J.W. French

1991 The Middle Woodland to Late Woodland Transition in the Upper Delaware Valley: New Information from the Smithfield Beach Site. In *The People of Minisink: Papers from the 1989 Delaware Water Gap Symposium*, edited by D.G. Orr and D.V. Campana, pp. 145-174. National Park Service, Mid-Atlantic Region, Philadelphia.

Fitch, Virginia A., and Suzanne Glover

1990 Historic and Prehistoric Reconnaissance Survey Picatinny Arsenal, New Jersey in *Army Materials Technology Laboratory Closure with Transfers to Detroit Arsenal, Michigan, Picatinny Arsenal, Fort Belvoir, Virginia. Supporting Documentation*. Department of the Army, Washington, D.C. Submitted to Daylor Consulting Group, Boston, and Department of the Army, Corps of Engineers, New England Division, Waltham, New York. Prepared by The Public Archaeology Laboratory, Inc., Pawtucket, Rhode Island, 1989.

Fritz, Gayle

1990 Multiple Pathways to Farming in Precontact Eastern North America. *Journal of World Prehistory* 4:387-435.

Funk, Robert E.

1972 Early Man in the Northeast and the Late Glacial Environment. *Man in the Northeast* 4:7-42.

- 1976 *Recent Contributions to Hudson Valley Prehistory*. New York State Museum Memoir 22, Albany.
- 1993 *Archaeological Investigations in the Upper Susquehanna Valley, New York State, Volume 1*. Persimmon Press, Buffalo.
- Funk, Robert E., and Frank F. Schambach
1964 Probable Plano Points in New York State. *Pennsylvania Archaeologist* 34:90-93.
- Funk, Robert E., and David W. Steadman
1994 *Archaeological and Paleoenvironmental Investigations in the Dutchess Quarry Caves, Orange County, New York*. Partners Press, Buffalo.
- Garner, John S.
1993 *World War II Temporary Military Buildings*. USACERL Technical Report CRC-93/01, U.S. Army Engineering and Housing Center (USACERL), Champaign, Illinois.
- Goddard, Ives
1978 Delaware. In *Northeast*, edited by Bruce G. Trigger, pp. 213-239. Handbook of North American Indians, vol 15, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.
- Gordon, Robert B.
1985 Hydrological Science and the Development of Water Power for Manufacturing. *Technology and Culture* 26:204-35.

1995 Material Evidence of Ironmaking Techniques. *IA: The Journal of the Society for Industrial Archeology* 21(2): 69-80.

1996 *American Iron, 1607-1900*. Johns Hopkins University Press, Baltimore.
- Gordon, Robert B. and Patrick M. Malone
1994 *The Texture of Industry*. Oxford University Press, New York.
- Gramly, Richard M., and Robert E. Funk
1990 What is Known and Not Known About the Human Occupation of the Northeastern United States Until 10,000 B.P. *Archaeology of Eastern North America* 18:5-32
- Grandine, Katherine E., and Deborah K. Cannan
1995 *Support and Utility Structures and Facilities (1917-1946) Overview, Inventory, and Treatment Plan*. R. Christopher Goodwin & Associates, Inc., Frederick, Maryland. Prepared for the Department of the Navy, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Virginia.
- Grashof, Bethany C.
1986 *A Study of United States Army Family Housing Standardized Plans, 1866-1940*

(PX-0001-50835). 6 vols. Center for Architectural Conservation, College of Architecture, Georgia Institute of Technology, Atlanta.

Griffin, James B.

1967 Eastern North American Archaeology: A Summary. *Science* 156:175-191.

Grumet, Robert S.

1992 *Historic Contact: Early Relations Between Indians and Colonists in Northeastern North America, 1524-1783*. National Historic Landmark Theme Study, National Park Service, Archeological Assistance Division, Mid-Atlantic Region, Philadelphia.

Guzzo, Dorothy P.

1999 Letter to Ronald J. Kraus, Director, Public Works, TACOM ARDEC, from D.P. Guzzo, Deputy SHPO, dated July 2, 1999. New Jersey Historic Preservation Office, Trenton.

Haag, William G.

1962 The Bering Strait Land Bridge. *Scientific American* 150.

Halsey, Edmund Drake

1882 *History of Morris County, 1739 - 1882*. W.W. Munsell and Co., New York.

Handsman, Russell

1990 The Weantinock Indian Homeland was not a >Desert.= *Artifacts* 18 (2):3-7/

Hanley, Robert J., Stacy Weber, and Mark A. Steinback

2004 Cultural Resources Survey for the Installation of a Perimeter Fence, Picatinny Arsenal, Rockaway Township, Morris County, New Jersey. Prepared for the Cultural Resources Manager, US Army, Picatinny Arsenal, New Jersey Under a Cooperative Agreement with the US Army Medical Research and Material Command. Panamerican Consultants, Inc.: Buffalo, New York.

Hanley, Robert J., Mark A. Steinback, and Kelly Nolte

2005 Cultural Resources Survey for the Soft Recovery System for Rail Guns, Picatinny Arsenal, Rockaway Township, Morris County, New Jersey. Prepared for the Cultural Resources Manager, US Army, Picatinny Arsenal, New Jersey Under a Cooperative Agreement with the US Army Medical Research and Material Command. Panamerican Consultants, Inc: Buffalo, New York.

Harrell, Pauline Chase

1996 *Evaluation of Structures Built Prior to 1946 at Picatinny Arsenal, New Jersey*. WCH Industries, Inc., Waltham, New York, in association with Boston Affiliates, Inc., Boston. Prepared for U.S. Army Corps of Engineers, New York District, New York.

Hawkes, E. W., and R. Linton

- 1916 *A Pre-Lenape Site in New Jersey*. University of Pennsylvania, The University Museum Anthropological Publications, Volume 6, No.3, Philadelphia.

Heritage Studies

- 1986 *A Cultural Resource Reconnaissance and Stage I-B Cultural resource Survey at the Proposed Site of the Morris County landfill, Rockaway Township, Morris County, New Jersey*. Heritage Studies, Princeton, New Jersey. Prepared for Wehran Engineering Corporation, Middletown, New York. Prepared by Published by the Board of Chosen Freeholders, County of Morris, New Jersey.

Heye, G. G., and G. H. Pepper

- 1915 *Exploration of a Munsee Cemetery near Montague, New Jersey*. Contributions from the Museum of the American Indian, Heye Foundation, No. II, Part 1, New York.

Historical Office, Picatinny Arsenal

- n.d. *Itinerary for a Historic Tour of Picatinny Arsenal*. Prepared by Historical Office, Picatinny Arsenal, Dover, New Jersey. Typewritten manuscript at Department of Public Works, Picatinny Arsenal, Dover, New Jersey.

- 1984 *A Remembrance of the Past...A Recognition by the Present: Historical Guide to Picatinny Arsenal, U.S. Army Armament Research and Development Center, Dover, New Jersey*. 3rd ed. Unpublished manuscript prepared by the Historical Office, Picatinny Arsenal, Dover, New Jersey.

Historic American Building Survey/Historic American Engineering Record (HABS/HAER)

- 1982 Picatinny Arsenal Inventory Cards [approximately 1300]. U.S. Department of the Interior, National Park Service, Historic American Engineering Record, Washington, D.C.

- 1985 Historic Properties Report/Picatinny Arsenal/Dover, New Jersey. U.S. Department of the Interior, National Park Service, Historic American Engineering Record, Washington, D.C.

Hopkins, G.M.

- 1867 *Combined Atlas of the State of New Jersey and the City of Newark*. G.M. Hopkins & Co., Philadelphia.

Jenkins, Dennis R.

- 1996 *The History of Developing the National Space Transportation System: The Beginning through STS-75*. Walsworth Publishing Company, Marcelline, Missouri.

Kauffman, Barbara E., and Richard J. Dent

- 1982 Preliminary Floral and Faunal Recovery and Analysis at the Shawnee-Minisink

Site (36MR43). In *Practicing Environmental Archaeology: Methods and Interpretations*, edited by Roger W. Moeller, pp. 7-11. Occasional Paper No. 3, American Indian Archaeological Institute, Washington, Connecticut.

Keller, J. Timothy, and Genevieve P. Keller

1998 *How to Evaluate and Nominate Designed Historic Landscapes*. National Register Bulletin No.18. U.S. Department of the Interior, National Park Service, Washington, D.C. <http://www.nps.gov/history/nr/publications/bulletins/nrb18/>.

Kim, Sung Bok

1978 *Landlord and Tenant in Colonial New York: Manorial Society, 1664-1775*. University of North Carolina Press, Chapel Hill.

Kinsey, W. Fred, III, Herbert C. Kraft, P. Marchiando, and D. J. Werner

1972 *Archaeology in the Upper Delaware Valley*. Anthropological Series, No. 3, The Pennsylvania Museum and Historical Commission, Harrisburg.

Klein, Joel I., Leonard G. Bianchi, Lorraine E. Williams, and Sydne B. Marshall

1986 *An Archeological Overview and Management Plan for Picatinny Arsenal*. EnviroSphere Company, Lyndhurst, New Jersey. Prepared for National Park Service, Philadelphia, and U.S. Army Material Development and Readiness Command, Dover, New Jersey.

Kraft, Herbert

1970 *The Miller Field Site, Warren County, New Jersey; A Study in Prehistoric Archaeology, Part I, The Archaic and Transitional Stages*. Seton Hall University Press, South Orange, New Jersey.

1975 *The Archaeology of the Tocks Island Area*. Archaeological Research Center, Seton Hall University Museum, South Orange, New Jersey.

1977 The Paleo-Indian Sites of Port Mobil, Staten Island. In *Current Perspectives in Northeastern Archeology: Essays in Honor of William A. Ritchie*, edited by Robert E. Funk and Charles F. Hayes III, pp. 1-19. Researches and Transactions of the New York State Archeological Association, Volume XVII, Number 1.

1978 *The Minisink Site: A Reevaluation of a Late Prehistoric and Early Historic Contact Site in Sussex County, New Jersey*. Seton Hall University Museum, South Orange, New Jersey.

1986 *The Lenape: Archaeology, History, and Ethnology*. The New Jersey Historical Society, Newark.

Kraft, Herbert C., and R. Alan Mounier

1982a The Archaic Period in New Jersey: ca. 8000 B.C. - 1000 B.C. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review*

of Research Problems and Survey Priorities, edited by Olga Chesler, pp. 52-102. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

- 1982b The Late Woodland Period in New Jersey: ca. A.D. 1000 - 1600. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 139-184. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

Kriv, Arlene R., ed.

- n.d. *World War II and the U.S. Army Mobilization Program: A History of 700 and 800 Series Cantonment Construction*. Legacy Resources Management Programs, Department of Defense, U.S. Department of the Interior, National Park Service, Cultural Resources, HABS/HAER, n.p.

Lance, Martha

- 1994 Changes on the Land: Phases of Rural Industrial Site Use and Reuse, 1730-1870. Paper presented at the 1994 Meeting of the Society for the History of Technology, Lowell, Massachusetts.

LaPorta, Philip C.

- 1996 Lithostratigraphy as a Predictive Tool for Prehistoric Quarry Investigations: Examples from the Dutchess Quarry Site, Orange County, New York. In *A Golden Chronograph for Robert E. Funk*, edited by Chris Lindner and Edward V. Curtin, pp. 73-83. Occasional Papers in Northeastern Anthropology No. 15, Archaeological Services, Bethlehem, Connecticut.

Leffel & Co., James

- 1881 *Leffel's Construction of Mill Dams*. James Leffel & Co., Springfield, Ohio.

Lenik, Edward J.

- 1985 *The Archaeology of Wayne*. Wayne Township Historical Commission, Wayne, New Jersey.

Lev Zetlin Associates

- 1992 *Future Development Master Plan for U.S. Army Armament Research, Development and Engineering Center, Picatinny Arsenal, New Jersey: Commander's Summary*. Lev Zetlin Associates, New York. Prepared for U.S. Army Corps of Engineers, New York District.

Loechl, Suzanne Keith, Samuel A. Batzli, Susan I. Ensore

- 1996 *Army Guidelines for Identifying and Evaluating Historic Military Landscapes: An Integrated Landscape Approach*. An AEC Technical Guideline prepared by U.S. Army Corps of Engineers Construction Engineering Research Laboratory, Champaign, IL.

Magne, Martin P. R.

- 1989 Lithic Reduction Stages and Assemblage Formation Processes. In *Experiments in Lithic Technology*, edited by Daniel S. Amick and Raymond P. Mauldin, pp. 15-31. *B.A.R. International Series 528*, Oxford.

Malone, Patrick M., Michael S. Raber, and Beth Parkhurst

- 1991 *Historical and Archaeological Assessment: Valley Falls Heritage Park, Cumberland, Rhode Island*. Raber Associates, South Glastonbury, Connecticut. Report prepared for the Town of Cumberland, Rhode Island.

Manning, Alice E.

- 1982 Nineteenth Century Farmsteads on the Inner Coastal Plain of New Jersey. In *Historic Preservation Planning in New Jersey: Selected Papers on the Identification, Evaluation, and Protection of Cultural Resources*, edited by Olga Chesler, pp. 42-92. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

Marshall, Sydne B.

- 1982 Aboriginal Settlement in New Jersey During the Paleo-Indian Cultural Period, ca. 10,000 BC-6000 BC. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 139-184. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

Mason, Ronald J.

- 1981 *Great Lakes Archaeology*. Academic Press, New York.

McClelland, Linda Flint, J. Timothy Keller, Genevieve Keller, and Robert Z. Melnick

- 1999 *Guidelines for Evaluating and Documenting Rural Historic Landscapes*. National Register Bulletin 30. U.S. Department of the Interior, National Park Service, Interagency Resources Division, Washington D.C.
<http://www.nps.gov/history/nr/publications/bulletins/nrb30/>.

Morrell, Brian H.

- 1995 *An Annotated Bibliography of Documentary Reference Materials Relating to the Picatinny Arsenal Area Ironworks and the Historic Iron Industry of Morris County, New Jersey*. Historic Conservation and Interpretation, Inc., Newton, New Jersey. Prepared for The U.S. Army Engineer, Waterways Experiment Station, Vicksburg, Mississippi.

Murphey, Joseph, Dwight Packer, Cynthia Savage, Duane D. Peter, and Marsha Prior

2000 *Army Ammunition and Explosives Storage in the United States: 1775-1945*. Special Publications Number 7. Geo-Marine, Inc., Plano, TX. Prepared for the U.S. Army Corps of Engineers, Fort Worth District, Fort Worth, TX.

Myers, Manny

1984 Revolutionary War Origins of Picatinny Arsenal. In *A Remembrance of the Past . . . A Recognition by the Present: Historical Guide to Picatinny Arsenal*, U.S. Army Armament Research and Development Center, Dover, New Jersey, prepared by the Historical Office, p. 7, 3rd ed. Unpublished manuscript prepared by the Historical Office, Picatinny Arsenal, Dover, New Jersey.

National Register of Historic Places Staff

2002 *How to Apply the National Register Criteria for Evaluation*. U.S. Department of the Interior, National Park Service. National Register Bulletin 15. <http://www.nps.gov/history/nr/publications/bulletins/nrb15/>.

New Jersey Committee on Native American Community Affairs

2007 Report to Governor Jon S. Corzine. http://www.state.nj.us/state/diversity/american_indian/images/Native%20American%20Committee%20Report.pdf.

New Jersey Department of Environmental Protection

2007 Division of Land Use Regulation Homepage. <http://www.state.nj.us/dep/landuse/index.html>.

New Jersey State Museum

2005 Curation Guidelines: Preparing Compliance Archaeological Collections for Submission to the NJ State Museum. Bureau of Archaeology & Ethnology. Trenton, New Jersey.

Nicholas, George P. (editor)

1988 Ecological Leveling: The Archaeology and Environmental Dynamics of Early Postglacial Land Use. In *Holocene Human Ecology in Northeastern North America*, pp. 257-296. Plenum Press, New York.

Nolte, Kelly

1998 *Response to New Jersey Historic Preservation Office Review of Architectural Assessment of Historic Structures at Picatinny Arsenal, Morris County, New Jersey and Definition of Historic Districts for Picatinny Arsenal, Morris County, New Jersey*. Panamerican Consultants, Inc., Depew, NY. Prepared for US Army Corps of Engineers, New York District, New York.

Nolte, Kelly, Kenneth Gedicke, and Michael A. Cinquino, Ph.D.

1998 Addendum 1 Additional Data Request for Quarters 112 ("The General's

House”): Evaluation of the Condition of the Exterior Decorative Architectural Elements. Prepared for US Army Corps of Engineers. Panamerican Consultants, Inc.: Depew, New York.

Nolte, Kelly, Kelly Mahar, and Mark A. Steinback

2007 Determination of Eligibility of 318 Buildings and Structures for Inclusion on the National Register of Historic Places, Picatinny Arsenal, Rockaway Township, Morris County, New Jersey. Prepared for the Cultural Resources Manager, US Army, Picatinny Arsenal, New Jersey Under a Cooperative Agreement with the US Army Medical Research Acquisition Activity. Panamerican Consultants, Inc.: Buffalo, New York.

Nolte, Kelly, and Mark A. Steinback

1999a *Architectural Assessment of Historic Structures at Picatinny Arsenal, Morris County, New Jersey*. Panamerican Consultants, Inc., Depew, NY. Prepared for the U.S. Army Corps of Engineers, New York District, New York.

1999b *Definition of Historic Districts for Picatinny Arsenal, Morris County, New Jersey*. Panamerican Consultants, Inc., Depew, NY. Prepared for the U.S. Army Corps of Engineers, New York District, New York.

2004a Determination of Eligibility of Selected Buildings for Inclusion on the National Register of Historic Places, Picatinny Arsenal, Rockaway Township, Morris County, New Jersey. Prepared for the Cultural Resources Manager, US Army, Picatinny Arsenal, New Jersey Under a Cooperative Agreement with the US Army Medical Research and Material Command. Panamerican Consultants, Inc.: Buffalo, New York.

2004b Determination of Eligibility of Thirty-Three (33) Buildings for Inclusion on the National Register of Historic Places, Picatinny Arsenal, Rockaway Township, Morris County, New Jersey. Prepared for the Cultural Resources Manager, US Army, Picatinny Arsenal, New Jersey Under a Cooperative Agreement with the US Army Medical Research and Material Command. Panamerican Consultants, Inc.: Buffalo, New York.

Nolte, Kelly, Michele H. Hayward, Mark A. Steinback, and Elizabeth S. Burt

1999 *Development of a Treatment Strategy for and Additional Research Regarding Structures 3617, 3618 and Others at the Former Naval Air Rocket Test Station (NARTS), Test Area E, Picatinny Arsenal, Morris County, New Jersey*. Draft Report. Panamerican Consultants, Inc., Buffalo Branch, Depew, NY. Prepared for Northern Ecological Associates, Inc., Canton, NY under contract to U.S. Army Corps of Engineers, New York District, New York.

Nolte, Kelly, Michele H. Hayward, Elizabeth S. Burt, Mark A. Steinback, and Michael A. Cinquino

- 2000 *National Register Eligibility Determination for the Doland House (Building 3119), Picatinny Arsenal, Morris County, New Jersey.* Panamerican Consultants, Inc., Buffalo Branch, Buffalo, NY. Prepared for Northern Ecological Associates, Inc., Canton, NY, under contract to U.S. Army Corps of Engineers, New York District, New York.

Norman, Sandra L.

- 1988 *Guncotton to Smokeless Powder: The Development of Nitrocellulose as a Military Explosive, 1845-1929.* Ph.D. dissertation, Brown University, Providence, Rhode Island.

Office of the Assistant Chief of Staff for Installation Management (ACSIM)

- 2007 Real Property Homepage.

<http://www.hqda.army.mil/acsimweb/RealPropertyHomepage.htm>

Orr, D. G., and D. V. Campana (eds)

- 1991 *The People of Minisink: Papers from the 1989 Delaware Water Gap Symposium.* National Park Service, Mid-Atlantic Region, Philadelphia.

Penn, Theodore Z., and Roger Parks

- 1975 *The Nichols-Colby Sawmill in Bow, New Hampshire. IA: The Journal of the Society for Industrial Archeology* 1:1-12.

Parker, Patricia L. and Thomas F. King

- 1998 *Guidelines for Evaluating and Documenting Traditional Cultural Properties.* U.S. Department of the Interior, National Park Service. National Register Bulletin 38. <http://www.nps.gov/history/nr/publications/bulletins/nrb38/>.

Perry, Kevin

- 1993 *History.* One page ms on file at Department of Public Works, Picatinny Arsenal, Dover, New Jersey.

- 1996 Personal Communication.

Picatinny Directorate of Public Works

- n.d.a Military Real Property Card Files, 405-90f. On file, Directorate Of Public Works, Picatinny Arsenal, Dover, New Jersey.

- n.d.b General Real Estate Construction Files, 405-B. On file, Directorate Of Public Works, Picatinny Arsenal, Dover, New Jersey.

- n.d.c Vertical building drawing files, ordered by building number. On file, Directorate of Public Works, Picatinny Arsenal, Dover, New Jersey.

Picatinny Homepage

- 2008 Armament Research, Development and Engineering Center (ARDEC): Transformation. Available online at: http://www.pica.army.mil/PicatinnyPublic/organizations/ardec/t_role.asp.
- Pitney, Henry C., Jr. (ed)
1914 *A History of Morris County New Jersey: Embracing Upwards of Two Centuries, 1710-1913*. Vol. 1. Lewis Historical Publishing, New York.
- Pomfret, John E.
1964 *The New Jersey Proprietors and Their Lands*. Princeton University Press, Princeton.
- Pope, Jennie Barnes
1945 The Old Iron Industry. In *The Story of New Jersey*, edited by William Starr Myers, pp. 66-85. Princeton, New Jersey.
- Ridgel, Kelly J.
2003 *Integrated Cultural Resource Management Plan*. Prepared from reports by Panamerican Consultants, Inc. Picatinny Arsenal, Morris County, New Jersey.
- Ritchie, William A.
1949 *The Bell-Philhower Site, Sussex County, New Jersey*. Indiana Historical Society, Prehistory Research Series, Vol. 3., No. 2, Indianapolis.

1965 *The Archaeology of New York State*. Natural History Press, Garden City, New York.

1980 *The Archaeology of New York State*. 2nd ed. Natural History Press, Garden City, New York.
- Ritchie, William A., and Robert E. Funk
1971 Evidence for Early Archaic Occupations on Staten Island. *Pennsylvania Archaeologist* 41(3):45-59.

1973 *Aboriginal Settlement Patterns in the Northeast*. New York State Museum and Science Service Memoir 20, Albany.
- Robbins, Maurice
1960 *Wapanucket No. 6, An Archaic Village in Middleboro Massachusetts*. Cohannet Chapter, Massachusetts Archaeological Society, Inc. Attleboro.
- Rogers, J. A., Jr.
1931 *History of Picatinny Arsenal*. Picatinny Arsenal, Dover, New Jersey.
- Rutsch, Edward S.
1995 *Draft: Iron History at Picatinny Arsenal*. Historic Conservation and

Interpretation, Inc., Newton, New Jersey. Ms on file at Department of Public Works, Picatinny Arsenal, Dover, New Jersey.

1996 Personal Communication.

1999 *The Story of Ironmaking Bloomery Forges at Picatinny Arsenal*. Historic Conservation and Interpretation, Inc., Newton, NJ. Prepared for The U.S. Army Engineer Research and Development Center, Waterways Experiment Station, Vicksburg, MS.

Rutsch, Edward S., and Holly van Voorst

1989 *A Supplemental Stage I Cultural Resources Survey of the Proposed Mount Hope Pumped Storage Hydroelectric Facility in Rockaway and Jefferson Townships, Morris County, New Jersey*. Historic Conservation and Interpretation, Inc., Newton, New Jersey. Prepared for TAMS Consultants, Inc., New York.

1991 *Cultural Resources Survey Report C of the Proposed Mt. Hope Pumped Storage Hydroelectric Facility [sic] and Transmission Lines Rockaway and Jefferson Townships, Morris County, New Jersey*. Historic Conservation and Interpretation, Inc., Newton, New Jersey. Prepared for TAMS Consultants, Inc., New York.

1994 *A Report on the Cultural Resources Surveys Conducted on Picatinny Arsenal, Morris County, New Jersey within the Right-of-Way of the Proposed Transmission Line of the Mt. Hope Hydropower Project*. Historic Conservation and Interpretation, Inc., Newton, New Jersey. Prepared for TAMS Consultants, Inc., New York.

Rutsch, Edward S., William Sandy, Richard F. Porter, and Leonard G. Bianchi

1986 *Cultural Resource Investigation of the Proposed Mt. Hope Pumped Storage Hydroelectric Facility and Transmission Lines Rockaway and Jefferson Townships, Morris County, New Jersey*. Historic Conservation and Interpretation, Inc., Newton, New Jersey. Prepared for Tippetts-Abbett-McCarthy-Stratton, New York and Bloomfield, New Jersey.

Salwen, Bert

1975 Post Glacial Environments and Cultural Change in the Hudson River Basin. *Man in the Northeast* 10:43-70.

1978 Indians of Southern New England and Long Island: Early Period. In *Northeast*, edited by Bruce G. Trigger, pp. 160-176. Handbook of North American Indians, vol. 15, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Sanborn Insurance Company

1927 *Insurance Maps of Dover, New Jersey*. Sanborn Insurance Company, New York.

- 1949 *Insurance Maps of Dover, New Jersey*. Sanborn Insurance Company, New York.
- Sandy, William, Brian Morrell, and Edward S. Rutsch
1995 Archeological Investigation of the Walton Cemetery, Picatinny Arsenal, Rockaway Township, Morris County, New Jersey. Prepared for the US Army Engineer Waterways Experiment Station. Historic Conservation and Interpretation, Inc.: Newton, New Jersey.
- Sandy, William, and Edward S. Rutsch
1992 *Stage One Cultural Resources Survey of Three Areas for the Proposed Mt. Hope Pumped Storage Hydroelectric Facility Rockaway and Jefferson Townships, Morris County, N.J.* Historic Conservation and Interpretation, Inc., Newton, New Jersey. Prepared for TAMS Consultants, Inc., New York.
- Sassaman, K. E.
1992 Lithic Technology and the Hunter-Gatherer Sexual Division of Labor. *North American Archaeologist* 13:249-262.
- Schenck, Helen
1992 The Upper Forge at Valley Forge. *IA: The Journal of the Society for Industrial Archeology* 18 (1 and 2):19-39.
- Schieppati, Frank J., Michael A. Cinquino, Robert J. Hanley, Peter J. Gorton, Mark A. Steinback, Edward V. Curtin, and Kerry Nelson
2000 *Field Inspection of 55 Areas Sensitive for Cultural Resources and Phase IB Archaeological Surveys of Eight Sensitive Areas at Picatinny Arsenal, Morris County, New Jersey*. Panamerican Consultants, Inc., Depew, NY. Prepared for Northern Ecological Associates, Inc., Canton, NY, under contract to U.S. Department of the Army, New York District, Corps of Engineers, New York.
- 2003 *An Archaeological Field Inspection of 55 Sensitive Areas, Phase IB Archaeological Surveys of Eight Areas, and a Phase II Investigation of Three Sites at Picatinny Arsenal, Morris County, New Jersey*. Panamerican Consultants, Inc., Depew, NY. Prepared for Northern Ecological Associates, Inc., Canton, NY, under contract to U.S. Department of the Army, New York District, Corps of Engineers, New York.
- Schieppati, Ph.D., Frank J., Robert J. Hanley, and Michael A. Cinquino, Ph.D.
2004a Volume II: Phase IB Archaeological Survey of Sensitivity Area 5, Picatinny Arsenal, Morris County, New Jersey. Prepared for Northern Ecological Associates, Inc. Under Contract to US Army Corps of Engineers. Panamerican Consultants, Inc.: Buffalo, New York.
- 2004b Volume III: Phase IB Archaeological Survey of Sensitivity Area 6, Picatinny Arsenal, Morris County, New Jersey. Prepared for Northern Ecological Associates, Inc. Under Contract to US Army Corps of Engineers. Panamerican

Consultants, Inc.: Buffalo, New York.

Shesta, John

- 1978 Reaction Motors Incorporated: First Large Scale American Rocket Company: A Memoir. Paper delivered at the XXIXth International Aeronautical Congress, Dubrovnik, Yugoslavia (October). On file at Frederick I. Ordway III Collection, archives room, U.S. Space and Rocket Center, Huntsville, Alabama.

Sherfy and Luce

- 2000 *Guidelines for Evaluating and Nominating Properties that Have Achieved Significance Within the Past Fifty Years*. U.S. Department of the Interior, National Park Service. National Register Bulletin 22. <http://www.nps.gov/history/nr/publications/bulletins/nrb22/>.

Siegel, Ph. D., Peter E., Douglas C. McVarish, and Mark A. Tobias

- 2004 Archeological Investigations for the New Jersey Army National Guard Phase I Archeological Surveys: Sea Girt and Morristown Armories Phase IA Sensitivity Assessments: For Dix, Picatinny, Lawrenceville, Vineland, and West Orange Installations. Prepared for the US Army Corps of Engineers and Office of Environmental Compliance. John Milner Associates, Inc.: West Chester, Pennsylvania.

Siegel, Ph. D., Peter E., Alexander B. Bartlett, Tod L. Benedict, William J. Chadwick, Ph.D., and Mark A. Tobias

- 2006 Addendum Report Archeological Investigations for the New Jersey Army National Guard Phase IB Archeological Surveys: Picatinny, Lawrenceville, Fort Dix, and Vineland Facilities. Prepared for the US Army Corps of Engineers and Office of Environmental Compliance. John Milner Associates, Inc.: West Chester, Pennsylvania.

Simms, Janet E. and Bruce W. Bevan

- 1995 Locating Grave Sites Using Geophysics at Walton Cemetery, Picatinny Arsenal, New Jersey. Prepared for the US Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

Skinner, Alanson B., and Max Schrabisch

- 1913 *A Preliminary Report of the Archaeological Survey of the State of New Jersey*. New Jersey Geological Survey, Bulletin 9, Trenton.

Smith, Ph.D., Donald, Robert J. Hanley, Mark A. Steinback, Kelly Nolte, Rebecca J. Emans, Ph.D., and Michael A. Cinquino, Ph.D.

- 2008 Phase I Cultural Resources Survey of Eight Study Areas Totaling Approximately 215 Acres, Picatinny Arsenal, Morris County, New Jersey. Prepared for the Cultural Resources Manager, US Army, Picatinny Arsenal, New Jersey Under a Cooperative Agreement with the US Army Medical Research Acquisition Activity. Panamerican Consultants, Inc.: Buffalo, New York.

Snow, Dean R.

1980 *The Archaeology of New England*. Academic Press, New York.

Sterud, Eugene L.

1977 The Application of Small Site Methodology to the New York Archaic. In *Archaeology and Geochronology of the Susquehanna and Schoharie Regions*, edited by J. R. Cole and L. R. Godfrey, pp. 53-57. Hartwick College, Oneonta, New York.

STV/Lyon Associates, Inc.

1994 *Installation Design Guide for Picatinny Arsenal, New Jersey*. STV/Lyon Associates, Inc., Baltimore. Prepared for U.S. Army Corps of Engineers, New York District, New York.

Swanke Hayden Connell Architects

2000 *Historic Preservation Project Planning & Estimating*. RS Means, Kingston, Massachusetts.

Tetra Tech EM, Inc.

2005 Cultural Resources Survey Work Plan. Prepared for the US Department of the Army Research, Development, and Engineering Center (ARDEC). Rockaway, New Jersey.

2006 Phase I Cultural Resources Investigation, Picatinny Applied Research Center, Picatinny Arsenal, Morris County, New Jersey. Prepared for the US Department of the Tank Automotive (TACOM) and Armaments Command Army Research, Development, and Engineering Center (ARDEC). Rockaway, New Jersey.

2007 Phase II Archeological Investigation, Current Ballfield Area Prehistoric Site (28MR314), Picatinny Applied Research Center, Picatinny Arsenal, Morris County, New Jersey. Prepared for the US Department of the Tank Automotive (TACOM) and Armaments Command Army Research, Development, and Engineering Center (ARDEC). Rockaway, New Jersey.

Thiokol Corporation

1997 *History of Thiokol Corporation*. Thiokol Corporation Web Page, Corporate Communication Office, Ogden, Utah.

Thurber, Pamela and Sandy Norman

1983 *Historic American Engineering Record, Picatinny Arsenal, NJ, NJ-36*. Picatinny Arsenal, New Jersey.

Thurber, Pamela, Sandy Norman, Donald C. Jackson, and Robie S. Lange

1984 *Picatinny Arsenal*. Historic American Engineering Record (HAER) No. NJ-36. U.S. Department of the Interior, National Park Service, Historic American Engineering Record, Washington, D.C.

Trigger, Bruce G. (editor)

1978a *Northeast*. Handbook of North American Indians, vol. 15, W.C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

1978b Early Iroquois Contacts with Europeans. In *Northeast*, pp. 344-356. Handbook of North American Indians, vol. 15, W.C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Turnbaugh, S.P. (editor)

1985 Introduction. In *Domestic Pottery of the Northeastern United States, 1625-1850*, pp. 1-26. Academic Press, New York.

U.S. Army Corps of Engineers, Fort Worth

1997 *Cold War Property Identification, Evaluation and Management Guidelines*. Fort Worth District, Fort Worth, TX.

U.S. Army Engineer District, St. Louis Mandatory Center of Expertise for the Curation and Management of Archaeological Collections

1996 *Service-Wide Report on U.S. Army Archaeological Collections: Summary Report on the U.S. Army Environmental Center's Native American Graves Protection and Repatriation Act Compliance Project Section 6 Summary Investigations*. <http://aec.army.mil/usaec/cultural/section6.doc>.

U.S. Naval Air Rocket Test Station, Technical Publications Branch

1950 *All About NARTS, U.S. Naval Air Rocket Test Station, Lake Denmark, Dover, N.J.* No place of publication (Available in the Command Historian's Office, Picatinny Arsenal, New Jersey).

United States Steel

1957 *The Making, Shaping, and Treating of Steel*. 7th edition. Pittsburgh.

Versaggi, Nina

1987 *Hunter-Gatherer Settlement Models and the Archaeological Record: A Test Case From the Upper Susquehanna Valley*, New York. Ph.D. dissertation, Department of Anthropology, State University of New York at Binghamton.

Wacker, Peter O.

1982 New Jersey's Cultural Resources: A.D. 1660-1810. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 199-219. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

Walsh, Rita

1995 *The World War II Ordnance Department's Government-Owned Contractor-Operated (GOCO) Industrial Facilities: Ravenna Ordnance Plant Historic Investigation*. U.S. Army Materiel Command Historic Context Series, Report of

Investigations, Number 7A. Geo-Marine, Inc, Plano, Texas. Prepared for the U.S. Army Corps of Engineers, Fort Worth District, Fort Worth, Texas.

Waterways Experiment Station (WES), U.S. Army Corps of Engineers

1996 *Identification and Analysis of Wetlands, Floodplains Threatened and Endangered Species and Archaeological Geomorphology at Picatinny Arsenal, NJ*. Vol. 1: Text. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, Mississippi. Prepared for U.S. Army Environmental Center, Aberdeen Proving Ground, Maryland, and U.S. Army Armament Research, Development and Engineering Center, Picatinny Arsenal.

Williams, Lorraine E., and Susan Kardas

1982 Contact Between Europeans and the Delaware Indians of New Jersey. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 185-198. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

Williams, Lorraine E., and Ronald A. Thomas

1982 The Early/Middle Woodland Period in New Jersey: ca. 1000 B.C.-A.D. 1000. In *New Jersey's Archaeological Resources from the Paleo-Indian Period to the Present: A Review of Research Problems and Survey Priorities*, edited by Olga Chesler, pp. 103-138. Office of New Jersey Heritage, New Jersey Department of Environmental Protection, Trenton.

Wilson, John S.

1977 Upper Factory Brook Sawmill. *IA: The Journal of the Society for Industrial Archeology* 3: 43-52.

Witthoft, J.

1952 A Paleo-Indian Site in Eastern Pennsylvania: An Early Hunting Culture. *Proceedings of the American Philosophical Society* 96(4):464-495.

Wood, Amy and Laurie W. Rush, Ph. D.

2005 United States Department of the Army, Fort Drum, New York Report to the Cultural Resources Manager, Picatinny Arsenal, New Jersey Remote Sensing Archaeological Survey at Walton Cemetery.

Appendix A: Acronyms

ACHP	Advisory Council on Historic Preservation
ACSIM	Office of the Assistant Chief of Staff for Installation Management
ADA	Americans with Disabilities Act
ADAAG	Americans with Disability Act Accessibility Guidelines
AEC	Army Environmental Command
AETC	Armaments Engineering and Technology Center
AHPA	Archaeological and Historic Preservation Act
AIRFA	American Indian Religious Freedom Act
AKO	Army Knowledge Online
APE	Area of Potential Effects
AR	Army Regulation
ARDEC	U.S. Army Armament Research, Development and Engineering Center
ARPA	Archaeological Resources Protection Act
ASA (I&E)	Army for Installations & Environment
ASIC	Armament System Integration Center
ATFP	Anti-Terrorism Force Protection
BRAC	Base Realignment and Closure
CFR	Code of Federal Regulation
CLS	Common Levels of Support/Service
CRM	Cultural Resource Manager
DENIX	Defense Environmental Network & Information eXchange
DNE	Determined Not Eligible

DNR	Designation Rescinded
DPW	Directorate of Public Works
DoD	Department of Defense
DoDI	Department of Defense (Instruction)
EA	Environmental Assessment
EAD	Environmental Affairs Division
ECAS	Environmental Compliance Assessment System
EIS	Environmental Impact Statements
ELPA	Eligible for the purposes of a Program Alternative
EO	Executive Order
EPAS	Environmental Performance Assessment System
EPR	Environmental Program Requirement
ERDC	Engineer Research and Development Center
EUL	Enhanced Use Lease
FR	Federal Register
FY	Fiscal Year
GC	Garrison Commander
GIS	Geographical Information System
HABS	Historic American Buildings Survey
HAER	Historic American Engineering Record
HALS	Historic American Landscapes Survey
IAW	in accordance with
ICRMP	Integrated Cultural Resource Management Plan

ICST	initial costs
IFS	Integrated Facilities System
IJO	Individual Job Orders
IMCOM	U.S. Army Installation Management Command
ISR	Installation Status Report
LCC	Life Cycle Cost Analysis
LEA	Layaway Economic Analysis
MCA	Military Construction, U.S. Army
MOA	Memorandum of Agreement
NAGPRA	Native American Graves Protection and Repatriation Act
NARTS	Naval Air Rocket Test Station
NCE	Non-Contributing Element of NHL, NRL, NRE District
NEPA	National Environmental Policy Act
NEV	Not yet Evaluated
NHLC	Contributing Element of a NHL District
NHLI	Individual National Historic Landmark
NHPA	National Historic Preservation Act
NJ DEP	New Jersey Department of Environmental Protection
NJ HPO	New Jersey State Historic Preservation Office
NJSA	New Jersey Statutes Annotated
NJSM	New Jersey State Museum
NPS	National Park Service
NRB	National Register Bulletin

NRHP	National Register of Historic Places
NREC	Contributing Element of a NRE District
NREI	Individual National Register Eligible
NRLI	Individual National Register Listed
PA	Potential Archaeological Site
PAO	Public Affairs Officer
PEO	Program Executive Officers
PCI	Panamerican Consultants, Inc.
PL	Public Law
PM	Project Managers
QAE	Quality Assurance Evaluator
RCI	Residential Communities Initiative
RDECOM	Research, Development and Engineering Command
REC	Record of Environmental Consent
RP	Real Property
SHPO	State Historic Preservation Officer
SIR	savings-investment ratio
SOP	Standard Operating Procedures
TECUP	Toxic Environmental Clean-Up Program
THPO	Tribal Historic Preservation Officer
USACE	U.S. Army Corps of Engineers
USACERL	U.S. Army Corps of Engineers Construction Engineering Research Laboratory
UXO	Unexploded Ordnance

WES Waterway Experiment Station

Appendix B: Glossary

The following is a list of definitions of historic preservation and cultural resource management terms, and regulatory info:

Advisory Council on Historic Preservation (ACHP) - established by the National Historic Preservation Act (NHPA) to advise the President and Congress, to encourage private and public interest in historic preservation, and to comment on Federal agency action under Section 106.

Archaeological Artifacts - an object, a component of an object, a fragment of an object that was made or used by humans; a soil, botanical or other sample of archaeological interest.

Archaeological Records - notes, drawings, photographs, plans, computer databases, reports and any other audio-visual records related to the archaeological investigation of a site.

Archaeological Resource - any material of human life or activities that is at least 100 years of age, and is of archaeological interest (32 CFR 229.3[a]).

Area of Potential Effects (APE) - geographical area within which the undertaking may cause changes in the character of or use of unidentified and/or known historic properties. This area always includes the actual site of the undertaking, and may also include other areas where the undertaking will cause changes in land use, or other aspects that could affect historic properties.

Categorical Exclusion – under the National Environmental Policy (NEPA) Act, categorical exclusions apply to actions that have no foreseeable environmental consequences to resources other than cultural resources and are not likely to be highly controversial. A Record of Environmental Consideration is used to explain how the exclusion designation is determined for a particular project or that identifies an existing NEPA document directly relevant to a project. A list of approved Army categorical exclusions can be found in AR 200-2 and screening criteria for their application.

Cultural Items - as defined by the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990, human remains and associated funerary objects, unassociated funerary objects (at one time associated with human remains as part of a death rite or ceremony, but no longer in possession or control of the federal agency or museum), sacred objects (ceremonial objects needed by traditional Native American religious leaders for practicing traditional Native American religions), or objects of cultural patrimony (having ongoing historical, traditional, or cultural importance central to a Native American tribe or group, rather than property owned by an individual Native American, and which, therefore, cannot be alienated, appropriated, or conveyed by any individual of the tribe or group).

Cultural Resources - historic properties as defined by the NHPA; cultural items as defined by NAGPRA, archaeological resources as defined by Archaeological Resource Protection Act, sites and sacred objects to which access is afforded under American Indian Religious Freedom Act and collections and associated records as defined in 36 CFR 79.

Curation of Federally Owned and Administered Archaeological Collections (36 CFR 79) - the practices associated with the storage, preservation and retrieval for subsequent study of archaeological records and artifacts.

Environmental Assessment (EA) - prepared under NEPA for actions that the project proponent does not anticipate will have a significant effect on the environment or if it is not known if the impact will be significant. An EA results in a Finding of No Significant Impact (FONSI) or a Notice of Intent (NOI).

Environmental Compliance Assessment System (ECAS) - an Army program achieving, maintaining, and monitoring environmental compliance with Federal, State, and local environmental regulations. ECAS identifies environmental compliance deficiencies and develops corrective actions and cost estimates to address these deficiencies.

Environmental Impact Statement (EIS) - prepared under NEPA and is required when cultural resources may be damaged or “significantly adversely affected.”

Historic Property - any real or personal property, record, or lifeway. Includes: historic real property such as archaeological and architectural places, monuments, designed landscapes, works of engineering or other property that may meet the criteria for inclusion in the National Register of Historic Places; historic personal property such as any artifact or relic; historic records to include any historical, oral-historical, ethnographic, architectural, or other document that provides a record of the past; and community resources/lifeways to include any resource that a community or interested group ascribes cultural value (references to historic real or personal property such as natural landscapes and cemeteries; references to real property such as vistas or viewsheets; or references to the nonmaterial such as certain aspects of folklife, cultural or religious practices, languages or traditions).

Indian Tribe - any tribe, band nations, or other organized Indian group or community of Indians, including any Alaska Native village or corporation as defined in or established by the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.) that is recognized as eligible for special programs and services provided by the United States to Indians because of their status as Indians. Such acknowledged or “federally recognized” Indian tribes exist as unique political entities in a government to government relationship with the United States. The Bureau of Indian Affairs maintains the listing of federally recognized Indian tribes.

Integrated Cultural Resource Management Plan (ICRMP) - a 5-year plan developed and implemented by an installation commander to provide for the management of cultural resources in a way that maximizes beneficial effects on such resources and minimizes adverse effects and impacts without impeding the mission of the installation and its tenants.

Memorandum of Agreement (MOA) - formal written agreement containing the result of discussions among the Federal agency, the SHPO, the ACHP and interested public. The MOA documents mutual agreements upon statements of facts, intentions, procedures and parameters for future actions and matter of coordination. It shows how the needs of the Federal agency, the needs and desires of the public and the scientific/historical significance of the property have all been protected.

National Environmental Policy Act of 1969 (NEPA; P.L.91-90; 42 U.S.C. 4321-4347) - Federal policy to preserve important historic, cultural and natural aspects of our national heritage and requires consideration of environmental concerns during project planning and execution. This Act requires Federal agencies to prepare an Environmental Impact Statement (EIS) for every major Federal action that affects the quality of the human environment, including both natural and cultural resources. It is implemented by regulation issued by the Council on Environmental Quality (40 CFR 1500-08), that are incorporated into AR 200-2, Environmental Effects of Army Actions.

National Historic Preservation Act (NHPA) of 1966 [as amended (P.L. 89-665; 16 U.S.C. 470-470w-6)] - national policy that defines the protection, rehabilitation, restoration and reconstruction of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology, or engineering. Amendments of 1980 establish guidelines for nationally significant properties, curation of artifacts, and data documentation of historic properties and preservation of federally-owned historic sites. Section 106 of the National Historic Preservation Act provides direction for Federal agencies on undertakings that affect properties listed, or those eligible for listing on the National Register and is implemented by regulations (36 CFR 800), issued by the ACHP. Section 110 requires Federal agencies to locate, inventory and nominate all properties that may qualify for the National Register. Applicable regulations are 36 CFR 60, National Register of Historic Places; 36 CFR 63, Determination for Eligibility for Inclusion in the National Register of Historic Places; and 36 CFR 800, Protection of Historic Properties. Section 111 addresses leases and exchanges of historic properties. It allows the proceeds of any lease to be retained by the agency for use in defraying the costs of administration, maintenance, repair and related expenses of historic properties. Section 402 of the NHPA describes the Federal agency responsibilities for historic properties in other nations and requires the head of the Federal agency to take into account the effect of an undertaking on property which is on the World Heritage List or on the applicable country's equivalent of the National Register to avoid or mitigate any adverse effect. Designates a State Historic Preservation Officer (SHPO) to administer the State Historic Preservation Program, including identifying and nominating eligible properties to the National Register and otherwise administering applications for listing historic properties in the National Register.

National Park Service (NPS) - an agency of the Department of the Interior to which the Secretary has delegated the authority and responsibility for administering the national historic preservation program.

National Register of Historic Places (NRHP) - nationwide listings of districts, sites, buildings, structures and objects of national, state or local significance in American history, architecture, archaeology, or culture that is maintained by the Secretary of the Interior. National Register listings must meet the criteria found in 36 CFR 60.4.

Programmatic Agreement - formal agreement between agencies to modify and/or replace the Section 106 process for numerous undertakings in a program in accordance with 36 CFR 800.13.

State Historic Preservation Officer (SHPO) - under the NHPA, the SHPO has been designated in each State to administer the State historic preservation program, including identifying and nominating eligible properties to the State and NRHP.

Survey or Assessment - scientific sampling of the extent and nature of archaeological and/or architectural resources within a specific area and/or APE.

Undertaking - any project, activity, or program that can result in changes in the character or use of historic properties; under the direct or indirect jurisdiction of the installation commander, including those projects, activities, or programs carried out or on behalf of the agency; carried out with Federal financial assistance; requiring a Federal permit, license, or approval; and subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency.

Appendix C: Regulations, Full Text Version

The following are full text description versions of the applicable Cultural Resource Management laws, regulations, and guidance discussed throughout this document.

AR-200-1
DoD Draft 4715.uu (DRAFT)
NHPA/36 CFR 800
Historic Sites Act
ARPA/32 CFR 229
Antiquities Act
36 CFR 79
Archaeological and Historic Preservation Act
American Indian Religious Freedom Act (AIRFA)
Native American Graves Protection and Repatriation Act (NAGPRA)

White House Memorandum of 29 April 1994: Government-to-Government Relations with
Native American Tribal Governments

Executive Order 13007 Indian Sacred Sites
Executive Order 11593
Executive Order 13287
National Environmental Policy Act
Executive Order 13327

**Army Regulation 200-1
Environmental Quality**

Environmental Protection and Enhancement

**Headquarters
Department of the Army
Washington, DC
13 December 2007**

UNCLASSIFIED

Chapter 1
Introduction
Section I
General
1-1. Purpose

a. This regulation implements Federal, State, and local environmental laws and DOD policies for preserving, protecting, conserving, and restoring the quality of the environment. This regulation should be used in conjunction with 32 Code of Federal Regulations (CFR) Part 651 (32 CFR 651), which provides Army policy on National Environmental Policy Act (NEPA, 42 USC 4321–4347) requirements, and supplemental program guidance, which the proponent of this regulation may issue as needed to assure that programs remain current. Environmental stewardship includes, but is not limited to—

- (1) Environmental components of installation sustainability.
- (2) Environmental support to the Army training and testing mission.
- (3) Environmental support during deployments and contingency operations on and off the installation, and operations at Army facilities that are not officially designated as installations.
- (4) Compliance-related Cleanup (CC) Program.
- (5) Army Defense Environmental Restoration Program (DERP).
- (6) Formerly used defense sites (FUDS).
- (7) Defense and State Memoranda of Agreement/Cooperative Agreement (DSMOA/CA) Program.
- (8) Pollution prevention.
- (9) Compliance with environmental legal mandates.
- (10) Natural resources.
- (11) Cultural resources.
- (12) Environmental protection aspects of pest management.
- (13) Environmental training for military and civilian personnel.
- (14) Base realignment and closure (BRAC) environmental program.
- (15) NEPA requirements.
- (16) Operational noise.
- (17) Environmental quality technology (EQT).
- (18) Environmental Legislative/Regulatory Analysis and Monitoring Program (EL/RAMP).
- (19) Environmental reporting and information management.
- (20) Environmental considerations in real estate and materiel acquisition programs.

b. This regulation defines the framework for the Army Environmental Management System (EMS). All appropriate facilities were to have implemented a mission focused EMS by the end of calendar year (CY) 05, and must attain International Organization for Standardization standard 14001 (ISO 14001) conformance by the end of FY09. The Army EMS Commanders Guide, Army EMS Implementer’s Guide, and Army EMS Aspects and Impact Methodology for Army Training Ranges provide detailed implementation guidance.

c. The chapters of this regulation reflect inclusion of the five interconnected EMS areas of policy, planning, implementation and operation, checking and corrective action, and management review.

- (1) *Policy.* The Army Environmental Policy Statement reflects the Army’s commitment to environmental protection and enhancement, pollution prevention, and continual improvement (chap 2).
- (2) *Planning and implementation.* The Army will identify how its operations impact the environment. It will set objectives and targets for reducing impacts. It will identify and track applicable legal and other requirements, and will support operational effectiveness and improve program management (chap 3).
- (3) *Program management and operation.* The Army will assign roles and responsibilities for environmental management (section II of this chap), provide required environmental training, establish procedures for communication within and outside the organization, document environmental procedures, and provide for emergency preparedness and response (chap 15).
- (4) *Checking and corrective action.* The Army will monitor and measure its progress in achieving stated goals, objectives, and targets, and will identify and implement corrective actions (chap 16).
- (5) *Management review.* The Army will periodically review program performance and management system implementation and ensure continual improvement (chap 17).

1-2. References

Required and related publications and prescribed and referenced forms are listed in appendix A.

1-3. Explanation of Abbreviations and Terms

Abbreviations and special terms used in this regulation are explained in the glossary.

Section II

Responsibilities

1-4. The Secretary of the Army

The Secretary of the Army (SA) serves as trustee for the natural and cultural resources managed by the Army. The SA is responsible for protecting and sustaining the quality of the air, land, and water resources entrusted to the Army. The SA signs the Army Environmental Policy Statement and certifies that the Army Environmental Program Objective Memorandum (POM) for the Army Environmental Restoration Program (ERP) meets all legal requirements and agreements.

1-5. The Assistant Secretary of the Army (Installations and Environment)

The Assistant Secretary of the Army (Installations and Environment) (ASA(I&E)) has primary responsibility for the Army's military environmental programs (that is, other than civil works (CW) functions of the U.S. Army Corps of Engineers (USACE)). Those responsibilities are carried out through the Deputy Assistant Secretary of the Army (Environment, Safety, and Occupational Health) (DASA(ESOH)) who will—

- a.* Provide overall policy, advocacy, program direction, and oversight across installations, logistics, acquisition, and operations. This includes, but is not necessarily limited to, military operations and activities (including training, deployments, and contingency operations) on and off the installation and operations at Army facilities that are not officially designated as installations or sites.
- b.* Establish long-term strategy and annual AEP goals, objectives, and metrics.
- c.* Serve as the Army's top management representative for the Army EMS.
- d.* Provide policy and oversight for EMS responsibilities per ISO 14001 and this regulation.
- e.* Serve as the Army's senior policy level official for historic preservation in accordance with Executive Order (EO) 13287, Preserve America, and as the Federal Preservation Officer for oversight and coordination of Army activities under the National Historic Preservation Act (NHPA), including approving and signing Army National Register of Historic Places (NRHP) nominations for Federally-owned and -controlled historic properties.
- f.* Serve as the primary point of contact with the Office of the Secretary of Defense (OSD), Congress, other Federal and State agencies, and other components for environmental matters.
- g.* On behalf of the SA, carry out DOD executive agent (EA) responsibilities for the following OSD programs: Environmental Information Technology Management (EITM), FUDS, DSMOA, Low - Level Radioactive Waste (LLRW), Defense Occupational Health Program (DOHP), National Defense Center for Environmental Excellence (NDCEE), DOD regional environmental coordinators (RECs), DOD Forestry Reserve Account, and environmental related annexes to Master Data Exchange Agreements.
- h.* Provide policy, advocacy, program direction, and oversight for Formerly Used Defense Sites (FUDS), Base Realignment and Closure (BRAC), and the Army's Defense Environmental Restoration Program.
- i.* Approve selection of Army representative(s) for inter-service and interagency environmental committees.
- j.* Provide oversight and coordination of strategic outreach and communication.
- k.* Provide policy, advocacy, program direction, and oversight of the Army EQT Program.
- l.* Serve as a permanent co-chair of the Environmental Technology Technical Committee (ETTC); consolidate and prioritize Army environmental technology needs and ensure the cost-effective allocation of available resources, consistent with the Army Program Guidance Memorandum (APGM).
- m.* Provide policy, advocacy, program direction, and oversight of environmental support to the Army acquisition process.
 - (1) In conjunction with the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) (ASA (ALT)), annually review Army environmental quality research, development, test, and evaluation (RDT&E) efforts.
 - (2) Provide representation on the Overarching Integration Product Teams (OIPT) supporting Army Systems Acquisition Review Councils (ASARC) to ensure Army material in all acquisition categories meet requisite environmental criteria prior to milestone reviews.
 - (3) Provide recommendations to the Milestone Decision Authority regarding program environmental quality requirements.
- n.* Review all Army weapons system acquisition programs for potential or real impacts to environmental quality and/

or Army installations.

- o.* Review Army weapons system acquisition program environmental quality costs by participating on the Army Cost Review Boards (CRB) and providing representation on weapons system cost working group Integrated Product Teams (IPTs).
- p.* Develop and approve funding policies for environmental programs in coordination with the Assistant Secretary of the Army (Financial Management & Comptroller) (ASA (FM&C)), and with the ASA (ALT) for RDT&E efforts.
- q.* Approve Army environmental input to Program Objective Memorandum (POM) direction, priorities, and guidance.
- r.* Approve AEP POM and budget submissions, resource allocations, unfinanced requirements (UFRs), and budget adjustments recommended by the ACSIM in coordination with the DCS, G-8 and the ASA (FM&C).
- s.* Ensure that the Army's trust responsibility and government-to-government relationship with Federally-recognized Indian Tribes are fulfilled.
- t.* Approve NHPA compliance agreements, as required.
- u.* Approve and integrate the Army Environmental Policy Institute (AEPI) and U.S. Army Environmental Command (USAEC) annual work plans.
- v.* Provide supervision and program direction for the AEPI, to include POM, budget, and UFR approvals.
- w.* Consult with the ACSIM on selection of the Director of Environmental Programs (DEP).
- x.* Serve as the intermediate rater for the DEP and Commander, USAEC, and provide input into their performance objectives.
- y.* Act as co-chair with the ACSIM for the HQDA Environmental Quality Control Committee (EQCC).
- z.* Provide direction and delegate specific actions to the Army DOD RECs.
 - aa.* Manage the operation of the regional environmental offices (REOs).
 - ab.* Serve a permanent co-chair of the DOD Operational and Environmental Executive Steering Committee on Munitions (OEESCM).
 - ac.* Report annually to the SA/CSA on AEP execution.
 - ad.* Serve as point of contact for external audits of the AEP.
 - ae.* Provide Congressional testimony and reports to Congress.
 - af.* Provide programmatic environmental scoping and planning to include National Environmental Policy Act (NEPA) and Strategic Environmental Assessment (SEA).
 - ag.* Oversee AEP support to natural and built environments, to include ranges.
 - ah.* Ensure the AEP addresses overseas installations and activities.
 - ai.* Integrate energy, pollution prevention, and EMS.
 - aj.* Integrate ESOH programs and activities with force protection and national security.
 - ak.* Execute the EL/RAMP.

1-6. The Assistant Secretary of the Army (Financial Management and Comptroller)

The Assistant Secretary of the Army (Financial Management and Comptroller) (ASA (FM&C)) will—

- a.* Issue planning, programming, budgeting, and execution (PPBE) system policy, Funding Authorization Document (FAD) footnotes for the Conservation Reimbursable Forestry and Agricultural/Grazing Outlease Programs, guidance for environmental programs, and Fish and Wildlife Conservation Fund (21X5095) apportionments, in coordination with the ASA (I&E).
- b.* Develop an independent cost estimate (ICE) that includes an environmental quality life cycle cost estimate (EQLCCE) for each weapons system. Reconciles differences in the EQLCCE, and the program office estimate (POE) in developing the Army cost position (ACP).
- c.* Collect and report environmental liabilities for the Army's Financial Statement.

1-7. The Assistant Secretary of the Army (Acquisition, Logistics, and Technology)

The Assistant Secretary of the Army (Acquisition, Logistics, and Technology) (ASA (ALT)) will—

- a.* Provide policy, guidance, oversight, and technical assistance to acquisition program managers and program executive offices as required to ensure integration of environmental quality considerations in all aspects of acquisition programs.
- b.* Plan, program, budget, and execute the Army's Environmental Quality Technology Program (for EQT Budget Activity 1, 2, and 3 Program initiatives) in coordination with the ASA (I&E) to maximize the ability of the Army to achieve its environmental strategy.
- c.* Develop policy to ensure procurement of materiel designed to minimize environmental impacts throughout its life cycle, while ensuring operational effectiveness.

- d.* Develop policy in coordination with the ASA (I&E) on acquisition of hazardous material.
- e.* Develop and oversee initiatives to reduce the volume and toxicity of hazardous materials and ozone depleting substances (ODS) used in Army materiel.
- f.* Review annually Army environmental quality technology program RDT&E efforts in conjunction with the ASA (I&E).
- g.* Designate the Director, Research and Laboratory Management, OASA(ALT), a permanent co-chair of the Environmental Technology Technical Committee (ETTC), who in conjunction with the ACSIM, consolidates and prioritizes Army environmental technology needs and ensures the cost-effective allocation of available resources, consistent with the APGM.
- h.* Integrate environmental considerations/awareness into acquisition programs and training in accordance with DODD 5000.1.
- i.* Ensure that environmental quality life cycle costs are clearly identified in the Program Office Estimate.
- j.* Serve as the proponent for the Army Green Procurement Program (GPP) to facilitate compliance with Affirmative Procurement requirements (for recovered materials and biobased items) and encourage the acquisition and use of environmentally preferable products and services.
- k.* Ensure all requests for proposal (RFP), contracts, and contract modifications include a requirement that bidders providing goods and services to installations certify (in the Representations and Certifications component of their proposal) that operations of their team (including subcontractors) will be consistent with the installation's and the Army's EMS.
- l.* Incorporate environmental and EMS requirements into appropriate acquisition regulations, policies, and procedures, and appoint a single point of contact for coordinating this action with the ACSIM/DEP.
- m.* Provide direct support to the Army Acquisition Community, Program Executive Officers, and Program/Product/Project Managers regarding environmental and affirmative procurement initiatives, issues and concerns by—
 - (1) Providing recommendations to the Army Acquisition Executive (AAE) or other decision authority about environmental issues associated with materiel and ASA (ALT) mission functions.
 - (2) Designating a single point of contact for coordinating environmental issues related to materiel development, logistics, and technology for Headquarters, Department of the Army (HQDA) component organizations in coordination with the Office of the ASA (I&E).
 - (3) Ensuring execution of environmental policy by acquisition managers.

1–8. The Chief of Public Affairs

The Chief of Public Affairs (CPA) will—

- a.* Provide policy, guidance, and oversight for public affairs support to the Army's environmental programs.
- b.* Provide advice and recommendations on handling the public affairs aspects of Section 552, Title 5, United States Code (5 USC 552) requests related to the environmental program.

1–9. The Deputy Chief of Staff, G–3/5/7

The Deputy Chief of Staff, G–3/5/7 (DCS, G–3/5/7) is responsible for developing and coordinating policy, programs, and initiatives to achieve directed levels of training readiness for the Army and serves as the overall integrator of Army Transformation. The DCS, G–3/5/7 will—

- a.* Serve as the focal point for spectrum activities encompassing force development, combat development, training development, resource management, and prioritization.
- b.* Establish priorities and requirements for Army ranges and training lands.
- c.* Exercise overall supervision, direction, and management oversight for the Sustainable Range Program (SRP). Specific responsibility for the SRP resides with the Chief, Training Support Systems Division (DAMO–TRS), who will—
 - (1) Serve as the HQDA functional proponent for the SRP and its core programs.
 - (2) Formulate policies and issue administrative programmatic guidance and instructions for implementing and sustaining the core programs within Army Commands (ACOMs), Army Service Component Commands (ASCCs), and Direct Reporting Units (DRUs), the Army National Guard (ARNG), and Headquarters, Installation Management Command (HQ IMCOM).
 - (3) Formulate policies for planning, programming, operating, and managing ranges and training lands that specify how the Army will—
 - (a)* Resource range operations and modernization through the Range and Training Land Program, and land management and maintenance through the Integrated Training Area Management (ITAM) Program.

- (b)* Integrate range requirements into the overall Army infrastructure investment strategy in conjunction with the Office of the Assistant Chief of Staff for Installation Management (OACSIM).
 - (c)* Centrally fund unexploded ordnance (UXO) clearance for range modernization projects.
 - (d)* Centrally fund the preparation of NEPA documentation for range modernization projects and major training land acquisitions.
 - (e)* Coordinate and synchronize range and training land policy to preclude conflicts between range operations and military training, natural and cultural resources management, environmental management, facilities management, and master planning activities.
- (4) Serve as the co-chair of the Army Range Sustainment Integration Council (ARSIC).

1-10. The Deputy Chief of Staff, G-4

The Deputy Chief of Staff, G-4 (DCS, G-4) will—

- a.* Identify, program, and secure funds to address the environmental aspects of the functions for which the DCS, G-4 is responsible.
- b.* Incorporate environmental considerations and requirements into all aspects of the DCS, G-4 mission, to include materiel management, integrated logistics support, supply, transportation, maintenance management, and logistics training.
- c.* Serve as the staff proponent for policy development pertaining to hazardous materials minimization and management, to include inventory management per AR 710-2.
- d.* Ensure that timely hazardous material (HM) handling, packaging, and transportation training is provided to Army personnel within the continental United States (CONUS) and overseas as required.
- e.* Serve as the proponent for implementation of the Military Munitions Rule.
- f.* Execute quarantine responsibilities for transport and logistics.

1-11. The Deputy Chief of Staff, G-8

The Deputy Chief of Staff, G-8 (DCS, G-8) will—

- a.* Provide Army cross-PEG (Program Evaluation Group) funding process guidance to assure cost effective compliance with environmental legal mandates while optimizing benefits to the Army missions and operations.
- b.* Assure priority is given to resource allocation that cost effectively resolves environmental aspects that impact missions and operations needed to equip, sustain and train our combat forces.
- c.* Review plans and requirements of Senior Mission Commanders, Army Command/Army Service Component Command/Direct Reporting (ACOM/ASCC/DRU) commanders, acquisition program managers and garrison commanders that address compliance with legal environmental mandates and resolve environmental aspects impacting missions and operations.
- d.* Review plans and requirements for the Army Environmental Program in coordination with the Assistant Chief of Staff for Installation Management (ACSIM).
- e.* Conduct annual review of resources allocated to sustaining Army environmental compliance to overhead investments in the most cost effective manner.

1-12. Commander, U.S. Army Corps of Engineers

The Commander, U.S. Army Corps of Engineers (USACE) will—

- a.* Administer the Clean Water Act (CWA) Section 404 permit program pertaining to the discharge of dredged/fill material into waters/wetlands of the United States.
- b.* Provide additional environmental support to the Army and other DOD elements as requested.
- c.* Provide environmental support to other Federal, State, and local agencies when tasked.
- d.* Provide Army DERP execution support on a reimbursable basis to installations through Districts and the Centers of Expertise for hazardous, toxic, and radioactive waste (HTRW) and for munitions and explosives of concern (MEC).
- e.* Administer the DSMOA/CA Program for the Assistant Deputy Undersecretary of Defense (Environment, Safety, and Occupational Health) (ADUSD (ESOH)).
- f.* Serve as executing agency for the FUDS program, consistent with the FUDS Charter. Establish FUDS requirements and policy guidance for program management, planning, reporting, execution, data access, quality control, and performance measurement.
- g.* Provide technical support by implementing sustainable design and development (SDD) practices, including incorporating SDD/sustainable project rating tool (SPiRiT) and environmental criteria into the Army's project design and construction process. (NOTE: Beginning in FY08, SPiRiT will be replaced by Leadership in Energy and

Environmental Design (LEED); all new construction must meet the LEED Silver standard.)

h. Incorporate environmental requirements into appropriate USACE activities, and appoint a single point of contact for coordinating this action with the ACSIM/DEP.

i. Approve and integrate the USACE Engineer Research and Development Center (ERDC) EQT program and provide overall policy direction for the ERDC.

1–13. The Assistant Chief of Staff for Installation Management

The Assistant Chief of Staff for Installation Management (ACSIM) will—

a. Serve as the HQDA proponent for the AEP.

b. Establish priorities, guidance, and procedures for installation operations, real property management, and environmental stewardship for all activities and functions within Army garrisons.

c. Promote environmental stewardship and sustainability in support of the ASA (I&E).

d. Incorporate environmental requirements into appropriate regulations, guidance documents, and procedures to support environmental stewardship.

e. Co-chair the HQDA annual Review and Analysis with the ASA (I&E).

f. Issue appropriate programming and funding guidance to ACOMs, ASCCs, DRUs, NGB–ARNG, HQ IMCOM, and special installations to support development of the environmental programs component of the Program Objective Memorandum (POM).

g. Develop and direct the planning, programming, and budget execution of the environmental components of the Installations Program Evaluation Group (II PEG) programs needed to sustain readiness and comply with appropriate Federal, State, and local laws, Executive Orders, DOD Directives overseas Final Governing Standards, international treaties and Status of Forces Agreements (SOFAs) in accordance with General Order #3 and APGM. This specifically includes base operations support (BOS) service activities addressed by the following Management Decision Packages (MDEPs):

(1) VENC (Environmental Compliance).

(2) VENN (Environmental Conservation).

(3) VEMR (Environmental Support to Ranges and Munitions).

(4) VEPP (Pollution Prevention).

(5) VEQT (Environmental Technology).

(6) ENVR (Environmental Restoration).

h. Direct execution of the environmental components of the Installations Program Evaluation Group (II PEG) programs.

i. Serve as proponent of the Army Compatible Use Buffer (ACUB) program.

j. Perform the EA duties for the DOD Forestry Reserve Account in coordination with the DASA (ESOH).

k. Provide representation for environmental and installation concerns on the Army Requirements Oversight Council (AROC).

l. Provide guidance on incorporating BRAC oversight and responsibilities on environmental and Military Munitions Response Program (MMRP) through the ACSIM BRAC Division (DAIM–BD).

m. As the Army’s combat developer (CBTDEV) for installations, generate, validate, and prioritize environmental quality RDT&E requirements.

n. Serve as a member of the Environmental Technology Technical Council (ETTC).

o. Serve as proponent for Army SDD facility policies that are incorporated into the process of planning, designing, constructing, operating, maintaining, renovating, and disposing installation facilities.

p. Serve as the technical advisor to ASA (I&E) for all environmental matters impacting installation sustainment and materiel operation and support.

q. Promote and integrate installation sustainability across all functional areas (for example, logistics, environment, training, and engineering).

r. Maintain an organization within the OACSIM that will—

(1) Provide to the ASA (I&E), and others as directed, an Environmental Quality Impact Analysis (EQIA) for major weapons systems acquisition program decision reviews.

(2) Provide technical support to the ASA(FM&C) for environmental quality life cycle cost estimates as part of the Army Cost Review process as required.

(3) Upon request, assist program managers in integrating environmental quality considerations into all aspects of the acquisition program.

s. Issue implementing guidance to eliminate ODS use on Army installations.

t. Issue implementing guidance with respect to endangered species critical habitat designation.

- u.* Provide annual authorities for the forestry, agricultural /grazing , and hunting and fishing fee reimbursable programs.
- v.* Serve as initial denial authority and acts on FOIA requests for records pertaining to environmental activities, other than litigation.
- w.* Manage the Environmental Restoration, Army (ER, A) account.
- x.* Manage environmental program responsibilities for base operations support (BOS) through the Office of the Director of Environmental Programs (ODEP). The ODEP will—
 - (1) Serve as the HQDA functional proponent for the Army Environmental Program (AEP).
 - (2) Provide HQDA oversight of the AEP that reflects overall Army compliance, stewardship, sustainability, and readiness priorities.
 - (3) Formulate and issue Army guidance and instructions for implementing and sustaining the AEP.
 - (4) Coordinate AEP requirements with all appropriate organizations to preclude conflicts, and to synchronize activities, among operations and training, real property management, and master planning.
 - (5) Identify, plan, program, budget, support, and defend military resource requirements for the AEP.
 - (6) Exercise primary Army staff (ARSTAF) responsibility to oversee, manage, and coordinate Army military environmental programs as described in paragraphs 1–1a(1)-1–1a(20), including resource utilization and progress toward goals and objectives for II PEG funded programs.
 - (7) Serve as the proponent for the Army Environmental Awards Program.
 - (8) Establish the Configuration Control Management Board (CCMB) to advise the DEP on Army Environmental Reporting matters.
 - (9) Develop guidance for implementation, utilization, and coordination of geospatial information and services within the environmental program.
 - (10) Exercise primary ARSTAF responsibility to collect, coordinate, and integrate user requirements for the Army EQT Program through the Army Environmental Requirements and Technology Assessment (AERTA) process.
 - (11) Participate in the EQT Teams to ensure the Army’s EQT user needs are effectively addressed.
 - (12) Provide guidance and recommendations on all issues directed to the ACSIM concerning policies and PPBE for the CC Program, Army DERP (including Installation Restoration Program (IRP) and MMRP), BRAC cleanup, and FUDS.
 - (13) Provide general oversight, resource requirements verification, and guidance for the execution of the FUDS Program to ensure program execution consistent with the FUDS Charter.
 - (14) Provide oversight of the Environmental Performance Assessment System (EPAS).
 - (15) Serve as the Executive Secretary to the DOD Operational and Environmental Executive Steering Committee for Munitions (OEESCM) and the HQDA EQCC.
 - (16) Serve as the chairman of the DOD Hazardous Waste Management Subcommittee.
 - (17) Serve as co-chair of the ARSIC.
 - (18) Execute EMS responsibilities per ISO 14001 and this regulation.
 - (19) Monitor the execution of the AEP to conform to EMS.
 - (20) Establish implementing guidance for Army environmental reporting systems.
 - (21) Provide upward reporting on progress in meeting AEP goals and objectives to HQDA leadership, OSD, and Congress.
 - (22) Develop appropriate Army-wide standards and metrics for the AEP.
 - (23) Designate two ACSIM representatives as voting members on the Armed Forces Pest Management Board (AFPMB). Designate Army senior consultant (ASC) and DOD certification officials for Army civilian personnel per DOD policies and procedures.
 - (24) Maintain an efficient and well-trained workforce.
 - (25) Coordinate AEP strategic outreach.
 - (26) Centrally manage the Conservation Reimbursable Forestry, Agricultural/Grazing Outlease, and Fish and Wildlife Conservation Programs; set installation specific Automatic Reimbursable Authority for forestry and agricultural/grazing at installations.

1–14. Commander, Installation Management Command

The Commander, Installation Management Command (IMCOM) will—

- a.* Execute sustainable base operations support for all installations under its purview in compliance with applicable laws and regulations (to include Final Governing Standards (FGS), and international agreements overseas) to support the Army training and testing mission.
- b.* Integrate program guidance, goals, and issue across installation functional areas (for example, logistics,

- environment, training, engineering, and planning).
- c. Oversee management of installation environmental programs.
 - d. Provide program management reviews for the ACSIM and DASA (ESOH).
 - e. Monitor and track environmental performance of Regional Offices and the US Army Reserve.
 - f. Assist installations in the execution of the Army CC program.
 - g. Develop an annual program management plan (PMP), consistent with the Army Cleanup Strategy and Strategic Plan, for the CC Program.
 - h. Coordinate IMCOM issues that affect mission among senior mission commanders (SMCs), ACOMs, ASCCs, DRUs, and garrisons.
 - i. Coordinate the execution of the EPAS Program for the active Army through USAEC.
 - j. Participate in environmental awards activities as appropriate.
 - k. Review, analyze, perform quality assurance/quality control (QA/QC), and approve environmental requirements and data reported by installations.
 - l. Maintain an efficient and well-trained workforce.
 - m. Coordinate with the DCS, G-3/5/7, ACOMs, ASCCs, DRUs, and Directorate of Plans, Training, Mobilization, and Security (DPTMS) to ensure ITAM Program requirements are implemented in accordance with DAMO-TRS resource allocations and guidance.
 - n. Report progress in meeting AEP goals and objectives to HQDA leadership.
 - o. Provide guidance and assistance to garrisons and monitor the execution of IMCOM's portion of the AEP in accordance with EMS.
 - p. Assist IMCOM installations in negotiations with regulatory agencies to preclude adverse mission impacts or the inadvertent establishment of Army policy that may conflict with regulatory requirements.
 - q. Provide AEP technical implementation support through the Commander, USAEC, who will—
 - (1) Provide environmental technical products and services in support of Army training, operations, acquisition, and sound stewardship.
 - (2) Manage assigned elements of the Army Cleanup Program in accordance with ACSIM direction and guidance. Develop and execute an annual program management plan (PMP), consistent with the Army Cleanup Strategy and Strategic Plan, for the Army DERP.
 - (3) Provide technical support for pest management.
 - (4) Program for and coordinate execution of EPAS for the active Army.
 - (5) Provide program management for the Army DERP at active installations.
 - (6) Execute policy and guidance for Army environmental reporting systems.
 - (7) Provide technical support to the Chief, Training Support Systems Division, Office of the DCS, G-3/5/7 in support of the SRP core programs.
 - (8) Provide technical support and day-to-day operational oversight for Conservation Reimbursable Forestry, Agricultural/Grazing Outlease and Fee Collection Programs.
 - (9) Provide technical support to DASA (ESOH) in support of the ASARC and CRB.
 - (10) Provide technical support to the Army's EQT Program as it relates to installation issues.
 - (11) Provide outreach support to the AEP.
 - (12) Provide public affairs support to the AEP.
 - (13) Maintain an efficient and well-trained workforce.
 - (14) Provide Hazardous Material Management Program (HMMP) operational oversight to the DCS, G-4 for environmental hazardous material management.
 - (15) Perform data collection and analyses of HMMP environmental information to measure program success.

1-15. The Chief, Army Reserve

The Chief, Army Reserve (CAR) will—

- a. Ensure environmentally sustainable operations.
- b. Serve as the primary ARSTAF adviser for all Army Reserve mission-related environmental issues.
- c. Ensure that Army environmental policy is implemented within the Army Reserve.
- d. Ensure that environmental stewardship is incorporated into all aspects of the Army Reserve mission.
- e. Coordinate with IMCOM on matters of mutual interest or concern.

1-16. National Guard Bureau - Director, Army National Guard

The National Guard Bureau – Director, Army National Guard (NGB-DARNG) will—

- a. Execute environmentally sustainable base operations support in compliance with applicable laws and regulations

to support the Army training and testing mission.

b. Ensure the NGB–DARNG acquires, manages and distributes resources; develops and administers policies and programs.

c. Serve as the "Channel of Communication" between the Army and the National Guard of the States, Territories and the District of Columbia.

d. Serve as the primary ARSTAF advisor for all ARNG environmental issues, and sign or appoint a designated representative to sign all ARNG Federal compliance agreements, consent orders, and environmental assessments, findings of no significant impact, and other pertinent Federal environmental documentation.

e. Coordinate with HQDA, State ARNGs, and other organizations to fulfill the NGB–ARNG's ARSTAF role as an Army component, the NGB–ARNGs role as the installation management organization for the State ARNGs, and the NGB–ARNG's role in performing ACOM, ASCC, or DRU functions.

f. Specific day-to-day responsibility for the environmental management program resides with the NGB–ARNG Chief of Environmental Programs (CEP). To carry out this responsibility, the NGB–ARNG CEP will—

(1) Ensure environmentally sustainable operations and planning.

(2) Ensure that Army environmental policy is implemented within the ARNG.

(3) Ensure that environmental stewardship is incorporated into all aspects of the ARNG mission.

(4) Integrate program guidance, goals, and issues across installation functional areas (for example, logistics, environment, training, and engineering) and planning areas.

(5) Submit environmental base support requirements to the OACSIM. Budget and execute environmental resources consistent with program needs.

(6) Develop an annual program management plan (PMP), consistent with the Army Cleanup Strategy and Strategic Plan, for the Army CC Program; and provide program management reviews for the ACSIM and DASA (ESOH).

(7) Provide supplemental implementing guidance and instructions consistent with HQDA guidance for environmental reporting to the states.

(8) Report progress in meeting AEP goals and objectives to HQDA leadership.

(9) Provide State ARNGs guidance and assistance, and monitor the execution of the NGB–ARNG's portion of the AEP in accordance with EMS.

(10) Schedule and conduct all aspects of EPAS audits.

(11) Review, analyze, perform QA/QC, and approve environmental reporting data submitted by NGB–ARNG installations.

(12) Assist NGB–ARNG installations in negotiations with regulatory agencies to prevent adverse mission impacts due to Federal natural and cultural resources requirements.

(13) Support environmental awards activities.

(14) Maintain an efficient and well-trained workforce.

(15) At Federally-owned or leased NGB–ARNG installations, facilities, activities and properties—

(a) Provide oversight and facilitate coordination in the remediation process.

(b) Assist in the management and execution of ER, A-funded NGB–ARNG remediation sites.

(16) At Non-Federally-owned, Federally-supported NGB–ARNG installations, facilities, activities, and properties, provide guidance, planning, oversight, execution, monitoring, and reporting for NGB–ARNG cleanup sites.

1–17. The Judge Advocate General

The Judge Advocate General (TJAG) will provide legal advice to the Army on all environmental law matters, except those arising out of civil works (CW) and FUDS activities. The Chief, Environmental Law Division (ELD), will exercise those authorities on behalf of TJAG, and will specifically—

a. Serve as legal advisor to the ACSIM and DEP with regard to all environmental matters.

b. Advise the Army Secretariat in coordination with the General Counsel.

c. Provide technical channel supervision, coordination, and advice to all Army lawyers involved in Army environmental matters.

d. Monitor and provide advice regarding environmental legislation and regulatory developments that affect the Army.

e. Review and render legal opinions on all draft environmental orders, consent agreements, and settlements with Federal, State, or local regulatory officials (except those arising from FUDS) before signature.

f. Provide assistance to ACOMs, ASCCs, DRUs, IMCOM, NGB–ARNG, and installations in drafting or negotiating interagency agreements or orders on consent with Federal, State, and local regulators.

g. Be responsible for representing the Army in Federal and State litigation and for communicating the Army's position in litigation and settlement with the Department of Justice subject to the general oversight of the General

Counsel.

h. Serve as agency counsel for the Army in appropriate administrative cases, hearings, and enforcement actions (ENFs).

i. Serve as initial denial authority and act on FOIA requests for records pertaining to environmental activities when the records relate to litigation in which the United States has an interest.

1–18. The Surgeon General

The Surgeon General (TSG) will—

a. Approve human health risk assessments and review environmental hazards and ecological risk assessments.

b. Provide policy on the human health aspects of Army installation activities and operations, to include those aspects associated with environmental contamination.

c. Integrate environmental awareness and technical information into the training programs sponsored by the Army Medical Department (AMEDD).

d. Serve as the Lead Agent for the DOD and as the Army representative in negotiating services with the Agency for Toxic Substances and Disease Registry (ATSDR).

e. Develop toxicological profiles concerning chemicals and hazardous substances commonly found on military installations. Develop and propose human health and safety environmental standards for chemical agents and explosive compounds, and other unregulated compounds when such standards do not exist.

f. Identify pollution-related health and ecological effects topics requiring research and development; and initiate needed research in areas where AMEDD has responsibility and provides toxicological and exposure data when required to support human health risk assessments.

g. Advise on human health aspects of environmental issues, including the “known and imminent substantial endangerment” (KISE) determination for environmental response actions overseas.

h. Provide technical assistance relating to health and, as requested, on environmental aspects of programs and initiatives.

i. Coordinate on the human and ecological health risk assessment portions of active installations, BRAC, and FUDS decision documents (DDs).

j. Promulgate policy for the disposition of dental, veterinary, medical, and pharmaceutical waste.

k. Provide two representatives as voting members on the AFPMB and designate personnel to serve as DOD pest management certification officials for Army uniformed personnel per DOD policies and procedures.

l. Coordinate with OACSIM for surveillance, prevention, and control of medically important pests and disease vectors and occupational health exposures from pest management operations.

m. Provide health and environmental risk communication support to all Army assets, to include training, consultation, conflict management, and facilitation.

n. Develop policy on occupational and public health issues related to Army environmental actions.

o. Through the U.S. Army Medical Command (MEDCOM) and the U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) will—

(1) Plan, organize, budget, and execute medical support to the Army environmental program.

(2) Serve as the decision authority for determinations of public health threat arising from Army environmental activities.

(3) Provide a broad range of expertise and services in environmental health, occupational health, and preventive medicine to evaluate the health aspects of the Army’s environmental program.

(4) Provide environmental health support in all environmental media to Army and other DOD elements, as requested.

(5) Assist in the maintenance of the Military Item Disposal Instructions (MIDI) for the DOD.

(6) Provide preventive medicine leadership and services to anticipate, identify, assess and counter environmental and occupational health threats.

(7) Provide environmental health and occupational health expertise, products and services in support of training, operations, acquisition, research and development to assess the health risks associated with Army environmental programs and activities.

(8) Support USAEC with coordination and execution of the EPAS Program.

1–19. Army Command, Army Service Component Command, and Direct Reporting Unit commanders

The ACOM, ASCC, and DRU commanders, including those outside the continental United States (OCONUS), as used in this regulation, include the Director, NGB–ARNG when performing an ACOM, ASCC, or DRU role relative to State ARNGs, the State Adjutants General when performing an ACOM, ASCC, or DRU role relative to State

ARNGs, and major subordinate commands (MSC). The ACOM, ASCC, and DRU commanders will—

- a.* Consistent with HQDA policy, provide oversight, policy, guidance, and resources to subordinate commands and activities to execute mission-related aspects of the Army's environmental program, to include: training and deployments; industrial operations; research, technology, and testing activities; operations other than war; and other operations and activities not falling under the direct control of supporting Garrison/Installation commanders.
- b.* Ensure that subordinate units comply with the policies and standards of the installations on which they are tenants.
- c.* Ensure that all subordinate units comply with all applicable laws, regulations, internal directives and goals, EOs, and overseas FGS.
- d.* Fully integrate environmental considerations into ACOM, ASCC, and DRU mission requirements.
- e.* Participate in and fully support all installation internal and external assessments and audits, and implement corrective actions.
- f.* Support environmental awards activities.
- g.* Ensure that assigned environmental staff is efficient and well-trained.
- h.* ACOM, ASCC, and DRU commanders that exercise command and control of installations will execute the same responsibilities listed under paragraph 1–13, Commander, IMCOM, with the following exceptions:
 - (1) Environmental requirements must be submitted through the ACOM, ASCC, DRU, and NGB–ARNG chain of command unless otherwise specified in the ISSA.
 - (2) ACOM, ASCC, and DRU commanders must monitor and track environmental performance at subordinate installations.
- i.* Additionally, the Commander, U.S. Army North (USARNORTH) will—
 - (1) Provide, upon request, personnel/resources support to the National Response Team (NRT) or Regional Response Team (RRT) responding to an environmental emergency. The requester will reimburse the cost of the support.
 - (2) Serve as the lead for all phases of mobilization, deployment/redeployment operations, and environmental support activities related to national emergencies.

1–20. The Commanding General, U.S. Army Forces Command

The Commanding General (CG), and U.S. Army Forces Command (FORSCOM) will—

- a.* Incorporate environmental planning requirements in mobilization guidance as appropriate.
- b.* Coordinate with IMCOM and DCS, G–3/5/7 on environmental support for mission activities, to include training exercises, range operations, and mission MILCON projects.
- c.* Provide explosive ordnance disposal (EOD) units for emergency response activities.

1–21. The Commanding General, U.S. Army Materiel Command

The Commanding General, U.S. Army Materiel Command (CG, AMC) will—

- a.* Provide technical assistance to acquisition program managers and program executive offices as required to ensure integration of environmental quality considerations in all aspects of acquisition programs and weapons system's life cycle, such as acquisition, maintenance, disposal, and demilitarization.
- b.* Conduct environmental research, development, testing, and evaluation and technical investigations in support of its missions and activities.
- c.* Support ASA (ALT) efforts to develop an integrated Army Environmental Quality Science and Technology program, and manage the portion of that program that supports acquisition, logistics, and industrial base user needs.
- d.* Coordinate acquisition, logistics, and industrial base user needs with the USACE and the ACSIM in areas impacting installation EQT.
- e.* Execute low-level radioactive waste (LLRW) management, including disposal.
- f.* Ensure that contracts include provisions for operations at government-owned, contractor-operated (GOCO) facilities to meet and remain compliant with environmental legal mandates and protect the Army from liability and/or fines assessed due to contractor operations.
- g.* Review and revise military specifications, standards, and drawings, when appropriate, to eliminate and/or reduce the use of extremely hazardous substances and toxic chemicals. Coordinate this effort with other program offices as required.
- h.* Conduct ACOM responsibilities for installations under its purview (see para 1–19).

1–22. The Commanding General, U.S. Army Training and Doctrine Command

The Commanding General, U.S. Army Training and Doctrine Command (CG, TRADOC) will—

- a.* Ensure the development and implementation of environmental training and doctrine programs and products that

support military training and readiness operations are consistent with regulatory requirements and Army environmental policies.

b. Ensure that the U.S. Army Engineer School solicits and prepares environmental training packages as required for Soldiers and makes them available on-line through Army Knowledge Online (AKO) and/or other appropriate websites.

c. Ensure requirements documents incorporate environmental resources sustainment and lessons learned into all appropriate Army and Joint doctrinal publications and references.

d. Ensure all training procedures, training manuals, training doctrine, and requirements documents include sound environmental practices and procedures.

e. Coordinate with the OACSIM regarding establishment of staffing or training standards for all modified tables of organization and equipment (MTOE) and tables of distribution and allowances (TDA) unit designated environmental officers. Ensure environmental officer responsibilities are consistent with regulatory requirements and Army environmental policies.

f. Ensure organizations/units are designed with equipment and personnel to meet established environmental requirements.

1–23. Senior mission commanders

Senior mission commanders (SMC) will—

a. Comply with installation policies, applicable Federal, State, and local environmental laws, regulations, EOs, and overseas FGS and signed agreements.

b. Participate in the installation’s planning, sustainability efforts, and EMS.

c. Designate a representative to the Environmental Quality Control Committee (EQCC).

d. Ensure personnel receive appropriate environmental training.

e. Coordinate testing and fielding of technology with the garrison commander (GC).

f. Participate in and fully support all installation internal and external assessments and audits, and implement corrective actions.

g. Fund environmental requirements not covered in the standard installation services or the ISSA (this does not apply to military units).

h. Appoint trained environmental officer(s) to ensure operational compliance and coordination with installation environmental staff.

i. Immediately report spills or releases of petroleum, hazardous substances, or hazardous waste (HW) to the GC.

j. Participate in the development of integrated natural and cultural resources management plans to ensure they are compatible with and support the mission.

k. In conjunction with the GC, ensure environmental requirements that impact ranges and training land are incorporated into the installation range complex master plan.

l. Where appropriate, coordinate with JALS–EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them.

1–24. Garrison commanders

Garrison commanders (GC) as used in this regulation include commanders of USAR Regional Readiness Support Commands (RRSCs), State Adjutants General relative to the concept of the State as an installation, OCONUS U.S. Army Garrisons, and GCs as appropriate as determined by the IMCOM, Headquarters NGB–ARNG, and State Adjutants General. The GC will—

a. Ensure that Base Support activities support military training and readiness operations, enhance mission accomplishment, and are conducted in a manner conducive to environmental stewardship (see para 1–1a).

b. Comply with applicable Federal, State, and local environmental laws, regulations, internal directives and goals, EOs, and overseas FGS.

c. Investigate regulatory enforcement actions, complaints, and spills/releases, and correct systemic problems. Document investigation, negotiation, and resolution of enforcement actions and submit through the respective chain of command to ODEP, and through technical legal channels to JALS–EL.

d. Ensure environmental requirements that impact ranges and training land are identified and incorporated into the installation range complex master plan. Ensure the affected SMC is made aware of these impacts.

e. Ensure installation activities incorporate applicable environmental requirements into all procurement actions.

f. Apply for, sign, arrange funding, and maintain all applicable Federal, State and local environmental permits. Incorporate potential mission surge conditions when applying for environmental permits.

- g.* Maintain appropriate environmental records as required by law.
- h.* Record enforcement actions within 48 hours via the Army Environmental Reporting Online (AERO).
- i.* Coordinate with JALS–EL early on all environmental agreements, including but not limited to, fine and penalty settlement agreements, prior to signing them. GCs may not delegate approval or signature authority.
- j.* Ensure that compliance agreements and consent orders that are attributable to a tenant’s mission and/or operations are coordinated through applicable legal and command channels to determine the appropriate funding activity.
- k.* Assess the long-term resource impacts of all environmental agreements. Coordinate resource implications for agreements through command channels to IMCOM, NGB–ARNG, ACOMs, ASCCs, or DRUs as appropriate prior to approval.
- l.* Ensure that non-DOD HM (that is, HM owned and/or used by non-DOD entities) is not stored, treated, or disposed of on the installation unless approved by the ASA (I&E), his or her designee, or higher authority.
- m.* Ensure that the installation strategic planning office (or equivalent) incorporates sustainability principles into strategic and other installation management plans; coordinate installation strategic plans with the SMC prior to finalization.
- n.* Implement an installation-wide Hazardous Materials Management Program (HMMP).
- o.* Promote recycling/reuse programs and Green Procurement policies.
- p.* Organize and chair the installation EQCC.
- q.* Organize and chair the installation Technical Review Committee/Restoration Advisory Board (TRC/RAB), as required.
- r.* Implement and maintain a mission-focused EMS in accordance with the ISO 14001 standard. Third party registration to the standard is not required, and environmental funds will not be used for this purpose. However, GCs may pursue third party registration when it provides clear and documented mission benefits.
- s.* Champion the installation EMS and designate an EMS representative in the appropriate organizational planning cell; ensure all planning incorporates the requirements of the EMS.
- t.* Participate fully in EPAS, conduct annual internal environmental compliance assessments, and coordinate assessments with all tenants.
- u.* Prepare and execute the installation corrective action plan (ICAP); coordinate and monitor completion of installation-wide corrective actions.
- v.* Ensure all environmental program plans are completed and implemented per guidance in chapter 3.
- w.* Designate personnel who are responsible and accountable for executing major program requirements as prescribed in chapters 4 through 14.
- x.* Deposit all proceeds from Conservation Reimbursable Programs as outlined in Section 2665, Title 10, United States Code (10 USC 2665); Section 2667, Title 10, United States Code (10 USC 2667); and Sections 670a and 670b, Title 16, United States Code (16 USC 670a and 670b, Sikes Act).
- y.* Serve as the Federal Agency Official with responsibility for installation compliance with the Native American Graves Protection and Repatriation Act (NAGPRA).
- z.* Establish government-to-government relations with Federally recognized Indian Tribes and Native Alaskans.
 - aa.* Maintain a public affairs program that encourages public involvement.
 - ab.* Ensure that the installation master plan incorporates environmental considerations.
 - ac.* Identify environmental requirements, forward through command channels, and maintain auditable records.
 - ad.* Execute the environmental budget to meet critical requirements.
 - ae.* Maintain an efficient and well-trained environmental staff.
 - af.* Ensure that Army law enforcement personnel are trained in conservation law enforcement where appropriate.
 - ag.* Ensure that sufficient numbers of professionally trained natural resource management personnel and natural resources law enforcement personnel are available and assigned the responsibility to perform tasks necessary to comply with Section 670e, Title 16, United States Code (16 USC 670e).
 - ah.* Approve record of decision (ROD)/decision documents (DDs) for environmental response actions within delegated approval authority.
 - ai.* Approve integrated natural resource management plans (INRMPs).
 - aj.* Hold tenant units accountable for complying with the policies and standards of the installation.
 - ak.* Approve annual reports of availability (ROA) for timber sales after review by higher headquarters and USAEC.
 - al.* Designate an installation wildland fire program manager and approve the integrated wildland fire management plan.

1–25. Medical Department Activity/Medical Center/Health Service Support Area commanders

The Medical Department Activity/Medical Center/Health Service Support Area (MEDDAC/MEDCEN/HSSA)

commanders will—

- a.* Comply with applicable Federal, State, and local environmental laws, regulations, EOs, and overseas FGS.
- b.* Manage and dispose of non-*Resource Conservation and Recovery Act* (RCRA) Subtitle C medical, dental, veterinary, pharmaceutical and regulated medical wastes in accordance with AR 40-5 and applicable regulations.
- c.* Verify disposal requirements via the MIDI system updated and maintained by USACHPPM.
- d.* Ensure that regulated medical waste manifests are only signed by those individuals who have been appropriately trained and are authorized in writing by the activity commander or supervisor.
- e.* Appoint a trained environmental officer to ensure operational compliance and coordination with installation environmental staff, to include the coordination of medical waste management plans.
- f.* Advise on health aspects of the installation environmental program, and provide technical consultation and support services.
- g.* Identify environmental requirements, forward through command channels, and maintain auditable records.

1-26. Tenants

A tenant is an authorized activity located on an installation that is not part of the garrison organization. This includes, but is not limited to, military units, the Army and Air Force Exchange Service (AAFES), and the Defense Commissary Agency (DeCA). Tenants will—

- a.* Comply with installation policies, applicable Federal, State, and local environmental laws, regulations, EOs, and overseas FGS.
- b.* Establish an ISSA with the GC that addresses environmental oversight, to include funding responsibilities and facility access (this does not apply to military units).
- c.* Participate in the installation's planning, sustainability, and EMS (note, however, that installations should evaluate their liabilities concerning non-governmental tenants to determine whether any of them can be exempted from the installation EMS).
- d.* Designate a representative to the EQCC.
- e.* Ensure personnel receive required environmental training.
- f.* Participate in all installation internal and external assessments and audits, to include programming for corrective actions.
- g.* Fund environmental requirements not covered in the standard installation services or the ISSA (this does not apply to military units).
- h.* Identify and submit environmental requirements to the supporting ACOM, ASCC, DRU/higher headquarters (this does not apply to military units).
- i.* Identify and coordinate non mission-specific environmental requirements with the GC.
- j.* Pay environmental fines and penalties resulting from their mission activities.
- k.* Immediately report spills or releases of hazardous substances to the on-scene coordinator (OSC). Pay or reimburse costs associated with cleanup and spill response if not covered in the standard installations services or the ISSA.
- l.* Report all instances of non-compliance and notification of enforcement actions to the GC immediately.
- m.* Ensure that non-DOD hazardous material is not stored, treated, or disposed of on the installation unless approved by the OASA (I&E), his or her designee, or higher authority.

1-27. Commanders of Government-Owned, Contractor-Operated facilities

The Commanders of Government-Owned, Contractor-Operated (GOCO) facilities will—

- a.* In coordination with the contracting officer, ensure that contracts include provisions for operations at GOCO facilities to meet and remain compliant with environmental legal mandates to protect the Army from liability and/or fines assessed due to contractor operations.
- b.* Comply with installation policies, applicable Federal, State, and local environmental laws, regulations, and EOs.
- c.* Ensure that contractors assume responsibility for management and disposal of contractor-generated solid and HW.
- d.* Ensure that non-DOD hazardous material is not stored, treated, or disposed of on the installation unless approved by the OASA (I&E), his or her designee, or higher authority.
- e.* Deposit all proceeds from Conservation Reimbursable Programs as outlined in 10 USC 2665, 10 USC 2667, and 16 USC 670b.
- f.* Execute EMS responsibilities in accordance with contract provisions.
- g.* Assess the long-term resource impacts of all environmental agreements in coordination with the acquisition community. Coordinate resource implications for agreements through command channels as appropriate prior to approval.

h. Ensure that all contractor personnel receive appropriate levels of training on environmental awareness, hazardous material/waste management, and the installation EMS.

1–28. Unit commanders

The unit commanders will—

- a.* Instill an environmental ethic in soldiers and civilians under their command.
- b.* Ensure personnel receive required environmental training.
- c.* Comply with installation policies, applicable Federal, State, and local environmental laws, regulations, EOs, and overseas FGS.
- d.* Report noncompliance and spills through appropriate channels to the GC.
- e.* Incorporate environmental responsibilities and environmental risk management into unit SOPs and operation orders (OPORDs) as appropriate; integrate environmental considerations into the planning and execution processes in accordance with FM 3–100.4.
- f.* Appoint and train environmental officers at appropriate organizational levels to ensure compliance actions take place (see FM 3–34.500 for environmental officer responsibilities).
- g.* Support the installation-wide EMS.

Chapter 6

Cultural Resources

6–1. Policy

Ensure that installations make informed decisions regarding the cultural resources under their control in compliance with public laws, in support of the military mission, and consistent with sound principles of cultural resources management.

6–2. Legal and other requirements

Statutes, laws, regulations, and other guidance applicable to the Army Cultural Resources Management Program include:

- a.* Section 470, Title 16, United States Code (16 USC 470).
- b.* Section 1996, Title 42, United States Code (42 USC 1996) and Executive Order (EO) 13007.
- c.* Section 3001, Title 25, United States Code (25 USC 3001).
- d.* Section 470aa-470mm, Title 16, United States Code (16 USC 470); Sections 431–433, Title 16, United States Code (16 USC 431–433); and Section 469, Title 16, United States Code (16 USC 469).
- e.* Part 79, Title 36, Code of Federal Regulations (36 CFR 79).
- f.* Part 800, Title 36, Code of Federal Regulations (36 CFR 800).
- g.* Part 229, Title 32, Code of Federal Regulations (32 CFR 229).
- h.* Part 10, Title 43, Code of Federal Regulations (43 CFR 10).
- i.* DOD American Indian and Alaska Native Policy Memorandum, 20 October 1998.
- j.* Presidential Memorandum for Heads of Executive Departments and Agencies, Government-to-Government Relations with Native American Tribal Governments, 29 April 1994.
- k.* EO 13175.
- l.* EO 13287.
- m.* For overseas installations, the country-specific FGS requirements.

6–3. Major program goal

Develop and implement procedures to protect against encumbrances to mission by ensuring that Army installations effectively manage cultural resources.

6–4. Program requirements

a. General program management.

- (1) Develop integrated cultural resources management plans (ICRMPs) for use as a planning tool.
- (2) Develop NHPA programmatic agreements (PAs) and memorandums of agreement (MOAs), Army alternate procedures (AAP) historic property component (HPC) plans, NAGPRA Comprehensive Agreements (CAs) and Plans of Action (POA), Cooperative Agreements, and other compliance documents as needed.
- (3) Appoint a government (that is, Federal or State Army National Guard (ARNG)) employee as the installation cultural resources manager (CRM).
- (4) Establish a government-to-government relationship with Federally recognized Indian Tribes, as needed. Initial

formal government-to-government consultation with Federally recognized Indian Tribes will occur only between the garrison commander (GC) or the Adjutant General (TAG) of an ARNG and the heads of tribal governments. Follow-on activities may be accomplished by staff.

(5) Establish a process that effects early coordination between the CRM and all staff elements, tenants, proponents of projects and actions, and other affected stakeholders to allow for proper identification, planning, and programming for cultural resource requirements.

b. National Historic Preservation Act compliance.

(1) Ensure that the GC functions as the agency official with responsibility for installation compliance with the National Historic Preservation Act (NHPA).

(2) Establish a historic preservation program, to include the identification, evaluation, and treatment of historic properties in consultation with the Advisory Council on Historic Preservation (ACHP), State Historic Preservation Officer (SHPO), local governments, Federally recognized Indian Tribes, Native Hawaiian organizations, and the public as appropriate. Document historic properties that will be substantially altered or destroyed as a result of Army actions. (LD: Section 110, NHPA; 36 CFR 800)

(3) Identify, evaluate, take into account, and treat the effects of all undertakings on historic properties. If an Army undertaking may affect properties of traditional religious or cultural significance to a Federally-recognized Indian Tribe, initiate consultation on a government-to-government basis. (LD: Section 106, NHPA; 36 CFR 800)

(4) Prepare and implement, as required, an NHPA Section 106 MOA, PA, or HPC, to address NHPA compliance for undertakings. Coordinate all NHPA compliance documents (for example, MOAs, PAs, HPCs) through the chain of command to obtain HQDA technical and legal review prior to execution. (LD: 36 CFR 800)

(5) Ensure that efforts to identify, evaluate, and treat historic properties consider the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation, and are conducted under the supervision of personnel who meet applicable professional qualifications for undertaking such work. (LD: 36 CFR 61; Section 112, NHPA)

(6) Maintain an up-to-date listing of all historic properties, and where applicable, maintain historic status in conjunction with real property inventory and reporting guidelines. (LD: EO 13287)

(7) Withhold from public disclosure information about the location, character, or ownership of a historic property when the GC determines that disclosure may cause risk of harm to the historic property or may impede the use of a traditional religious site by practitioners. (LD: Section 304, NHPA)

(8) Consider alternatives for historic properties, including adaptive reuse, that are not needed for current or projected installation mission requirements. (LD: Section 111, NHPA)

(9) Nominate to the National Register of Historic Places (NRHP) only those properties that the Army plans to transfer out of Federal management through privatization efforts. Nominate other properties only when justified by exceptional circumstances. Avoid adversely affecting properties that are 50-years old or older that have not been evaluated for eligibility against NHPA criteria. Treat (assume) that all historic sites are eligible (that is, off-limits) until the SHPO concurs with the federal finding of non-eligible.

(10) Where disagreement occurs with the SHPO regarding the eligibility of a historic property for the NRHP, where applicable obtain a "Determination of Eligibility" from the Keeper of the National Register, National Park Service (NPS). (LD 36 CFR 800, 36 CFR 63)

(11) Undertake such planning and actions as may be necessary to minimize harm to any National Historic Landmark that may be directly and adversely affected as a result of Army actions. (LD: 36 CFR 800)

c. AIRFA, Executive Order 13007 and Executive Order 13175 compliance.

(1) Consult with Federally recognized Indian Tribes to provide access to sacred sites on Army installations.

Consistent with appropriate health, safety mission constraints provide access to allow the practice of traditional religions, rights and ceremonies. The GC will maintain the appropriate confidentiality of sacred site locations. The GC may impose reasonable restrictions and conditions on access to sacred sites on Army installations for the protection of health and safety, or for reasons of national security. (LD: EO 13007)

(2) Avoid adversely affecting the physical integrity of sacred sites. Ensure reasonable notice is provided to Federally-recognized Indian Tribes when proposed actions may adversely affect or restrict access to the ceremonial use of, or the physical integrity of, sacred sites. (LD: EO 13007)

(3) Consult with tribal governments before taking actions that affect Federally recognized Indian Tribes. Assess the impact of Army 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. (LD: EO 13175)

d. Native American Graves Protection and Repatriation Act compliance.

(1) Designate the GC as the Federal agency official with responsibility for installation compliance with Native

American Graves Protection and Repatriation Act (NAGPRA). (LD: 43 CFR 10)

(2) Prepare CAs and POAs in coordination with Federally recognized Indian Tribes and Native Hawaiian organizations. Coordinate all NAGPRA CAs through the chain of command to obtain HQDA technical and legal review prior to execution. (LD: 43 CFR 10)

(3) Absent a CA, take reasonable steps to determine whether a planned activity (including MILCON) may result in the intentional excavation or inadvertent discovery of cultural items from Federally-owned or controlled Army lands. When cultural items may be encountered, the GC will implement consultation procedures and planning requirements of Section 3 and Section 5 of NAGPRA prior to issuing approval to proceed with the activity. (LD: 43 CFR 10.3 and 43 CFR 10.5)

(4) Establish initial communication with Federally recognized Indian Tribes via written correspondence between the GC and heads of tribal governments. Formally document all resulting agreements. (LD: 43 CFR 10)

(5) Inventory, summarize, and repatriate cultural items that are in existing collections under Army possession or control. Where there is a dispute as to the affiliation of cultural items, safeguard the cultural items until the dispute is resolved. (LD: 43 CFR 5, 6, 7, and 10)

e. ARPA and AHPA Compliance.

(1) Ensure the GC serves as the Federal land manager with responsibility for installation compliance with ARPA. (LD: 32 CFR 229)

(2) Ensure the GC serves as the Federal agency official with management authority over archeological collections and associated records. (LD: 36 CFR 79)

(3) Establish and include installation policy for management of, and for limitation of collection and removal of, paleontological resources in ICRMPs. Address known paleontological resources in any NEPA documentation prepared for actions that may impact or cause irreparable loss or destruction of such resources.

(4) Prohibit searching for or collection of historic properties (including archaeological resources) on Army installations except when authorized by the GC and pursuant to a permit issued under ARPA.

(5) Minimize the amount of archeological material remains permanently curated by reserving such treatment for diagnostic artifacts and other significant and environmentally sensitive material that will add important information to site interpretation.

(6) Curation of archeological materials from Army lands will occur only in 36 CFR 79-compliant repositories. Maximize use of off-installation facilities that are better able to provide for adequate long-term curatorial services.

(7) Do not disclose to the public information concerning the nature and location of any archaeological resource for which the excavation or removal requires a permit or other permission under ARPA or under any other provision of Federal law. (LD: Section 9a, ARPA 1979).



Department of Defense

INSTRUCTION

NUMBER 4715.uu

USD(AT&L)

SUBJECT: Cultural Resources Management

- References:
- (a) DoD Directive 5134.01, "Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L))," December 9, 2005
 - (b) DoD Directive 4715.1E, "Environment, Safety, and Occupational Health (ESOH)," March 19, 2005
 - (c) DoD Instruction 4715.5, "Management of Environmental Compliance at Overseas Installations," April 22, 1996
 - (d) DoD 4715.05-G, "Overseas Environmental Baseline Guidance Document," May 1, 2007
 - (e) through (x), see Enclosure 1

1. PURPOSE

This Instruction implements DoD policy and assigns responsibilities in accordance with References (a) and (b) for achieving compliance with applicable Federal statutory and regulatory requirements, Executive Orders, and Presidential memorandums for the integrated management of cultural resources on DoD-managed lands.

2. APPLICABILITY AND SCOPE

This Instruction applies to:

2.1. The Office of the Secretary of Defense, the Military Departments (including their Reserve components and the Civil Works function of the Department of the Army), the Chairman of the Joint Chiefs of Staff, the Combatant Commands, the Office of Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as the "DoD Components").

2.2. All DoD operations, activities, and real property in the United States, including public lands withdrawn from all forms of appropriation under public land laws and reserved for use by the Department of Defense. Overseas operations and activities will follow the policy and guidance set forth in References (c) and (d).

3. DEFINITIONS

Terms used in this Instruction are defined in Enclosure 2.

4. POLICY

It is DoD policy to:

4.1. Manage and maintain cultural resources under DoD control through a comprehensive program that considers the preservation of historic, archaeological, architectural, and cultural values; is mission supporting; and results in sound and responsible stewardship. The Department of Defense will promote and interpret the cultural resources under its care to inspire our personnel and to encourage and maintain U.S. public support for its military.

4.1.1. Ensure that readiness, sustainability, and cost-effectiveness policies and the military mission are facilitated through the maximum continued and adaptive use of cultural resources.

4.1.2. Be an international and national leader in the stewardship of cultural resources in our trust.

4.1.3. Integrate the DoD cultural resources program with mission activities, including environmental and planning programs.

4.1.4. Maintain a program to preserve the fabric, systems, and historic character and function of real property assets under DoD jurisdiction in a sustainable manner that supports the military mission and promotes the quality of life and work of the occupants and employees.

4.1.5. Use Integrated Cultural Resource Management Plans as the DoD instrument for compliance with the statutory management requirements of the applicable references of this Instruction.

4.1.6. Maintain complete, current information on known cultural resources.

4.2. Consult in good faith with internal and external stakeholders and promote partnerships.

4.2.1. Manage and maintain cultural resources by developing and fostering positive partnerships with Federal, tribal, State, and local government agencies; professional and advocacy organizations; and the general public.

4.2.2. Build stable and enduring relationships with Federally-recognized Indian tribes, Alaska Native entities, and Native Hawaiian organizations related to undertakings that may have the potential to affect cultural resources of interest to these groups. It is understood that some natural resources, such as certain types of plants and animals, may be included as cultural resources of interest to these groups.

4.2.3. Promote partnerships with communities to increase opportunities for public benefit from, and access to, DoD cultural resources, taking into account mission activities, sustainability, safety and security issues, and fiscal soundness.

4.2.4. Adopt innovative approaches to allow access to information as a means to create heritage tourism opportunities.

5. RESPONSIBILITIES

5.1. The Deputy Under Secretary of Defense for Installations and Environment (DUSD(I&E)), under the Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L)), shall:

5.1.1. Establish additional cultural resources policy and guidance, where necessary, in accordance with Reference (b).

5.1.2. Designate responsibilities and provide procedures for implementing the DoD cultural resources program.

5.1.3. Ensure that readiness, sustainability, and cost-effectiveness policies and the military mission are facilitated through the maximum continued and adaptive use of cultural resources.

5.1.4. Support DoD Component cultural resources budget requirements.

5.1.5. In coordination with the DoD Components, establish goals and objectives for the DoD cultural resources program.

5.1.6. Monitor implementation of this Instruction, including adherence to funding priorities for cultural resources (Enclosure 3), the use of appropriate measures of merit (Enclosure 4), and the annual review of the DoD Component cultural resources programs.

5.1.7. Identify opportunities for improved efficiency through increased interagency and DoD Component cooperation, information sharing, technology demonstration and transfer, and public communication.

5.1.8. Review all relevant DoD Directives and Instructions and identify appropriate linkages between cultural resources issues and other DoD programs.

5.1.9. Integrate the DoD cultural resources program with other installations and environment programs, including business enterprise integration, environmental management, safety, occupational health, facilities, installations requirements, and project planning programs.

5.1.10. Coordinate with other Federal agencies on cultural resources matters of national or regional scope.

5.1.11. Consult with DoD Components to obtain technical expertise on cultural resources issues of agency-wide scope.

5.1.12. Coordinate cultural resources issues and policies of general DoD interest with the Installation Capability Council.

5.1.13. Designate a Federal Preservation Officer (FPO) and Deputy Federal Preservation Officer (DFPO) in accordance with section 470h-2(c) of title 16, United States Code (U.S.C.) (Reference (e)) to oversee implementation and compliance with this Instruction.

5.1.14. Serve as the designated Senior Policy Official as defined by Executive Order (E.O.) 13287 (Reference (f)), with oversight responsibility for the DoD historic preservation program.

5.1.15. Work with Under Secretary of Defense (Comptroller) to develop and implement a process to accurately account for cultural resources included in DoD Financial Management Regulations.

5.1.16. Work with DDR&E to develop and implement an integrated and coordinated science and technology program to address cultural resources program requirements.

5.2. The Under Secretary of Defense for Personnel and Readiness shall:

5.2.1. Incorporate cultural resources values into DoD education and training.

5.2.2. Ensure that sufficient qualified personnel are available to carry out the requirements of this Instruction.

5.2.3. Identify opportunities for efficiencies in providing cultural resources training through increased interagency and DoD Component cooperation.

5.3. The Under Secretary of Defense (Comptroller) shall:

5.3.1. Establish objectives, guidance, requirements, and procedures requiring identification of cultural resources management costs across all functional areas.

5.3.2. Establish cultural resources management programming and budgeting policy incorporating statutory and regulatory drivers, mission priorities, and funding responsibility aligned with management authority for mission

activities entailing cultural resources risks.

5.3.3. Develop economic analysis guidance to incorporate appropriate cultural resources considerations and accurate life-cycle costs for utilizing, rehabilitating, or reusing historic structures.

5.3.4. Work with DUSD(I&E) to develop and implement a process to accurately account for cultural resources included in DoD Financial Management Regulations.

5.4. The Director, Defense Research and Engineering, under the USD(AT&L), shall:

5.4.1. Develop and implement an integrated and coordinated science and technology program to address the cultural resources program requirements identified by the DUSD(I&E).

5.4.2. Ensure that critical cultural resources technologies emerging from the technology base are demonstrated, validated, and certified for DoD use.

5.4.3. Ensure all matters that affect cultural resources management policies are coordinated with the DUSD(I&E).

5.5. The Heads of the DoD Components, to include the Assistant Secretary of the Army for Civil Works shall, for civil works programs on their owned or managed land:

5.5.1. Ensure compliance with this Instruction, including compliance by tenant activities. Develop and implement programs to monitor, achieve, and maintain compliance with applicable Federal statutory requirements as required by applicable references of this issuance.

5.5.2. Plan, program, budget, and execute adequate resources consistent with Enclosure 3 of this Instruction, other DoD guidance and fiscal policies, installation planning, and future deadlines.

5.5.4. Develop and implement a process to fully integrate cultural resources planning processes with broader planning activities in accordance with DoD Instruction (DoDI) 4715.9 (Reference (g)). Integrate cultural resources management with other facilities management systems and processes so as to provide the greatest overall program effectiveness and business efficiency.

5.5.5. Ensure that installations prepare, maintain, and implement provisions of their Integrated Cultural Resource Management Plan (ICRMP) in accordance with Enclosure 5 of this Instruction, and in consultation with State and tribal historic preservation officers and other appropriate consulting parties. Ensure that these plans are fully coordinated with appropriate installation offices responsible for preparing and maintaining training plans and master plans (including but not limited to: training and test range management plans, master plans, integrated pest management plans, endangered species recovery plans, recreational and golf course management plans, grounds maintenance plans, facilities construction site approvals, and other land use activities). Ensure that each plan is reviewed annually, updated as mission or environmental changes warrant, and revised and approved by appropriate command levels at least every 5 years.

5.5.6. Ensure that current information on known cultural resources is collected, interpreted, and disseminated to commanders and their staffs to support informed decisions about the management of cultural resources. The Department of Defense will ensure that this information is also available (subject to the appropriate confidentiality and security considerations) to consulting parties, as well as residents, visitors, scholars, and the general public.

5.5.7. Establish a systematic process to identify and evaluate cultural resources, including the use of archeological models. Use historic contexts to determine historic significance, as appropriate.

5.5.8. Consider creative and alternative strategies to avoid, minimize, or mitigate adverse effects to cultural resources.

5.5.9. Develop and implement a process to evaluate and approve nominations of DoD-managed cultural resources to the National Register of Historic Places.

5.5.10. Employ innovative technical and design practices to facilitate mission use of historic buildings and structures with the minimum loss of historic integrity.

5.5.11. Maximize reuse of historic buildings and structures, where justified by an objective analysis of life-cycle benefits and costs, before disposal, new construction, or leasing in accordance with DoD Directive 4165.6 and DoDI 4165.70 (References (h) and (i)).

5.5.12. Consider systematic deconstruction and architectural salvage of historic building fabric when replacement or demolition is necessary, especially where historic fabric may be reused to preserve other similar properties in the inventory.

5.5.13. Use non-invasive techniques, where technologically and economically appropriate, to make determinations of eligibility or significance, to protect the site and to minimize curation needs.

5.5.14. Provide for long-term curation for archaeological collections and associated records in repositories that provide professional, systematic, and accountable curation services that are cost-effective and provide for current and future research needs in accordance with part 79 of title 36, Code of Federal Regulations (CFR) (Reference (j)).

5.5.15. Provide Federally-recognized Indian tribes, Alaska Native entities, and Native Hawaiian organizations with access to and use of sacred sites that are of religious or cultural importance on DoD-managed lands, consistent with the military mission, and subject to safety and security considerations.

5.5.16. Maintain complete and current information on cultural items under DoD possession and control as defined in section 3001 of title 25, U.S.C. (Reference (k)), including those uncovered through inadvertent discovery or intentional excavation, and provide for final disposition in accordance with the processes outlined in part 10 of title 43, CFR (Reference (l)).

5.5.17. Establish appropriate partnerships with government, public, and private organizations to promote local economic development and vitality through the use of historic properties in a manner that contributes to the long-term preservation and productive use of those properties.

5.5.18. Ensure cultural resources personnel are properly qualified and trained appropriate to their responsibilities in accordance with DoDI 4715.10 and Volume 48 of the Federal Register (References (m) and (n)), and that their cultural resources responsibilities are proportionately represented in their performance evaluations.

5.5.19. Designate an FPO and DFPO to oversee compliance with this Instruction.

5.5.20. Through the DoD FPO, advise and consult on cultural resources issues and policies of general DoD interest to DUSD(I&E).

5.5.21. Promptly notify the DUSD(I&E), through the DoD FPO, of significant cultural resources issues.

5.6. The Assistant Secretary of the Army for Civil Works shall, where permitting activities regulated by the Federal Water Pollution Control Act (sections 1251-1387 of title 33, U.S.C. (Reference (o))) apply:

5.6.1. Ensure that all activities involving interactions with Federally-recognized Indian tribes, Alaska Native entities, and Native Hawaiian organizations are consistent with DoDI 4710.02 (Reference (p)) and paragraphs 4.8 through 4.10 of this Instruction.

5.6.2. Ensure that any civil works activities that have the potential to affect cultural resources comply with all requirements of Reference (e).

5.6.3. Promote programs within the Civil Works organization to improve the efficiency of regulations intended to replace the requirements of section 106 of Reference (e).

6. PROCEDURES

6.1. Cultural resources management is a dynamic process. Each DoD installation or activity will use a cultural resources management approach that includes:

- 6.1.1. Assessment of the military mission.
- 6.1.2. Preparation of detailed inventories of cultural resources.
- 6.1.3. Analysis and assessment of risk to the cultural resources.
- 6.1.4. Preparation of management plans.
- 6.1.5. Implementation of management plans.
- 6.1.6. Monitoring and assessment of results.
- 6.1.7. Completion of needs assessments survey.
- 6.1.8. Maintaining currency of inventories.
- 6.1.9. Reanalysis and reassessment of risk to cultural resources.
- 6.1.10. Adjustments to the overall program, as necessary.

6.2. Detailed inventories of cultural resources are essential in managing an installation's cultural resources:

6.2.1. The cultural resources survey of historic buildings should include, at a minimum, the identification and preliminary evaluation of all National Register-eligible historic buildings and structures performed by a professional meeting Reference (n) standards. Objects, Traditional Cultural Properties, districts, and landscapes covered by section 470 *et seq.* of Reference (e) should also be included. Resources that have not yet reached 50 years of age may be identified and evaluated for significance, especially where in context with neighboring or adjoining resources over 50 that share a similar mission use or originally-designed function.

6.2.2. The cultural resources survey for archaeological resources should include, at a minimum, a systematic analysis, by a professional meeting Reference (n) standards, in sufficient detail to make generalizations about the type and distribution of archaeological properties that may be present. A cultural resources survey will usually include archival research, and may include predictive modeling, remote sensing, surface inspection and subsurface testing to allow categorization of archaeological potential or determine presence or absence of archaeological properties. In all areas that might be adversely affected by military activities, such surveys should be followed by a systematic detailed examination designed to gather information about historic properties sufficient to evaluate them against predetermined criteria of significance, within specific historic contexts, to determine eligibility for listing on the National Register.

6.3. When an installation determines that the disclosure of information on the location or character of cultural resources may create a substantial risk of harm, theft, or destruction of such resources, invasion of privacy, trespass on Government property, interference with the military mission, and/or interference with the rights guaranteed to tribal groups under section 1996 of title 42, U.S.C. (Reference (q)), the installation shall ensure that documents and other data provided to the public do not disclose such information. Information may be provided to other agencies and parties in accordance with the confidentiality provisions of section 470w-3 of Reference (e) and part 229 of title 32, CFR (Reference (r)).

6.4. Early in the planning for any undertaking, the DoD proponent shall start consultation to explain the undertaking, its area of potential effects, an identification of known cultural resources within that area of potential effect, and a preliminary determination on whether or not the resources will be affected. Consultation shall be undertaken, as appropriate, with the following:

6.4.1. External stakeholders may include: the Advisory Council on Historic Preservation, State and tribal historic preservation officers, Federally-recognized Indian tribes, Alaska Native entities, Native Hawaiian organizations, and other interested organizations and individuals as defined in References (q) and (e) and part 800 of Reference (j).

6.4.2. Internal stakeholders include, but are not limited to: master planning offices, public works divisions, range management activities, facility managers, and other environmental management functions.

6.5. An economic analysis shall be conducted on all National Register (eligible or listed) historic properties that are being considered for demolition and replacement. The economic analysis of the historic property shall consider the life-cycle cost of the property, incorporating as required life-cycle costs for historic elements that are significantly different from life cycle costs for the equivalent new or replacement elements. The economic analysis of the proposed replacement property shall consider the total cost of the replacement project by whatever source funded, including (but not limited to) as appropriate: demolition and disposal of debris; new land acquisition; and site remediation and preparation. If the economic analysis demonstrates that the renovation and life-cycle cost of the historic property will exceed the total replacement project cost and the life-cycle cost of the new construction, replacement construction may be used. However, this threshold may be exceeded where the significance of a particular historic structure warrants special attention.

6.6. Consultation with Federally-recognized Indian tribes, Alaska Native entities and Native Hawaiian organizations is required by law regarding the disposition of cultural items, as defined in Reference (l), or when a site of religious or cultural importance to tribes is found on DoD property. If such items are encountered, the requirements of Reference (l) must be met. The installation should consult with the tribe(s) in accordance with Reference (p) at the earliest point in the planning process, and should take into account the interests of the potentially affected tribe(s) when carrying out the action.

7. EFFECTIVE DATE

This Instruction is effective immediately.

John J. Young, Jr.
Acting Under Secretary of Defense for
Acquisition, Technology, and Logistics

Enclosures - 5

- E1. References, continued
- E2. Definitions
- E3. Programming and Budgeting Priorities for Cultural Resources Programs
- E4. Cultural Resources Management Measures of Merit
- E5. ICRMP Contents

E1. ENCLOSURE 1

REFERENCES, continued

- (e) Sections 431-433, 470 et seq., and 670 et seq., of title 16, United States Code
- (f) Executive Order 13287, "Preserve America," March 3, 2003
- (g) DoD Instruction 4715.9, "Environmental Planning and Analysis," May 3, 1996
- (h) DoD Directive 4165.6, "Real Property," October 13, 2004
- (i) DoD Instruction 4165.70, "Real Property Management," April 6, 2005
- (j) Parts 60, 79, 800, 1220, and 1228 of title 36, Code of Federal Regulations
- (k) Section 3001 of title 25, United States Code
- (l) Part 10 of title 43, Code of Federal Regulations
- (m) DoD Instruction 4715.10, "Environmental Education, Training and Career Development," April 24, 1996
- (n) Federal Register, Volume 48, Page 44716, "Secretary of the Interior's Professional Qualification Standards," September 29, 1983¹
- (o) Sections 1251-1387 of title 33, United States Code
- (p) DoD Instruction 4710.02, "DoD Interactions with Federally-Recognized Tribes," September 14, 2006
- (q) Section 1996 of title 42, United States Code
- (r) Part and 229 of title 32, Code of Federal Regulations
- (s) Part 334 of title 33, Code of Federal Regulations
- (t) Executive Order 13007, "Indian Sacred Sites," May 24, 1996
- (u) DoD 4245.8-H, "Value Engineering," March 17, 1986
- (v) Federal Real Property Council, Guidance for Real Property Inventory Reporting (Issued Annually)²
- (w) DoD Instruction 4165.14, "Real Property Inventory and Forecasting," March 31, 2006
- (x) Executive Order 13327, "Federal Real Property Asset Management," February 6, 2004

¹ Available from http://www.nps.gov/history/local-law/Prof_Qual_83.htm

² Available from <http://www.gsa.gov/Portal/gsa/ep/channelView.do?pageTypeId=8203&channelId=-16603>

E2. ENCLOSURE 2

DEFINITIONS

E2.1. alternative or creative mitigation. Alternatives to archaeological data recovery. These approaches can be implemented as the only treatment option, or can be part of a package where different historic properties are subject to different kinds and levels of mitigation

E2.2. archaeological survey. An examination of all or part of an area accomplished in sufficient detail to make generalizations about the types and distributions of archaeological properties that may be present.

E2.3. available for archaeological survey. All DoD-managed lands, excluding impact areas; lands under water that are always at least 5 feet deep on a year-round basis; and danger zones as defined in part 334 of title 33, CFR (Reference (s)).

E2.4. cultural resources. “Historic properties” (buildings, districts, objects, sites, or structures as defined in part 60 of Reference (j) that meet eligibility criteria for the National Register of Historic Places, whether or not they have been formally registered, identified, or acknowledged as “eligible”), including artifacts, records, and material remains related to such a property or resource; “cultural items” as defined in Reference (k); American Indian, Eskimo, Aleut, or Native Hawaiian “sacred sites” as defined by E.O. 13007 (Reference (t)); “archaeological resources” as defined by section 470 aa-mm of Reference (e); and “archaeological artifact collections and associated records” defined under part 79 of Reference (j).

E2.5. facility physical quality code. A code used to depict the capability of existing facilities as measured by a condition index as defined in Enclosure 4 of DoD 4245.8-H (Reference (u)):

E2.5.1. Q1: The sum of all necessary restoration and modernization costs is not greater than 10 percent of the replacement value of the facility (PRV).

E2.5.2. Q2: The sum of all necessary restoration and modernization costs is greater than 10 percent but not greater than 20 percent of the PRV.

E2.5.3. Q3: The sum of all necessary restoration and modernization costs is greater than 20 percent but not greater than 40 percent of the PRV.

E2.5.4. Q4: The sum of all necessary restoration and modernization costs is greater than 40 percent of the PRV.

E2.6. Federal preservation officer. A qualified official as defined by section 470h-2(c) of Reference (e). Designation of Federal agency preservation officers is outlined in Reference (e).

E2.7. historic property. A building, district, object, site, or structure as defined in part 60 of Reference (j) that meets eligibility criteria for the National Register of Historic Places, whether or not it has been formally registered, identified, or acknowledged as “eligible.” This may include properties of traditional religious and cultural importance to Federally-recognized Indian tribes, Alaska Native entities, and Native Hawaiian organizations.

E2.8. Integrated Cultural Resources Management Plan. A plan that defines the process for the management of cultural resources on DoD installations.

E2.9. mission dependency. The value an asset brings to the performance of the mission as determined by the governing agency in accordance with “Guidance for Real Property Inventory Reporting” (Reference (v)) in one of the following categories:

E2.9.1. Mission Critical (MC) – without constructed asset or parcel of land, mission is compromised.

E2.9.2. Mission Dependent, Not Critical (MDNC) – does not fit into MC or Not Mission Dependent categories.

E2.9.3. Not Mission Dependent – mission unaffected.

E2.9.4. Not Rated – DoD or base realignment and closure (BRAC) properties only.

E2.10. mitigation. Lessening the adverse effects an undertaking may cause relative to cultural resources. Mitigation can include limiting the magnitude of the action; repairing, rehabilitating, restoring, or documenting the affected resource; avoiding the effect altogether; reducing or eliminating the effect over time by preservation and maintenance operations during the life of the action; and/or compensating for the effect by providing or preserving substitute resources or environments.

E2.11. National Register of Historic Places. The official Federal list of sites, districts, buildings, structures, and objects worthy of preservation consideration because of significance in American history, architecture, archaeology, engineering, or culture. Significance may be local, State, or national in scope. National Register eligibility criteria are published in part 60 of Reference (j).

E2.12. needs assessment survey. An inventory of an installation's inventories, management plans, personnel, training, supplies, equipment, and other management tools to identify future actions and resources needed for the installation to comply with the requirements of this Instruction.

E2.14. plant replacement value. See Enclosure 4 of DoDI 4165.14 (Reference (w)).

E2.15. stewardship. The management of resources entrusted to one's care in a way that preserves and enhances the resources and their benefits for present and future generations.

E2.16. tribe. See Reference (p).

E2.17. undertaking. Any Federal, Federally-assisted, or Federally-licensed action, activity, or program, new or continuing, as per section 470 et seq. of Reference (e) and part 800 of Reference (j).

E2.18. qualified cultural resources professional. An individual who meets the standards described in Reference (n).

E3. ENCLOSURE 3

PROGRAMMING AND BUDGETING PRIORITIES FOR CULTURAL RESOURCES PROGRAMS

E3.1. RECURRING CULTURAL RESOURCES MANAGEMENT REQUIREMENTS

Includes activities needed to cover the recurring administrative, personnel, and other costs associated with managing DoD cultural resource programs. This includes activities that are necessary in achieving compliance with applicable DoD policies, Presidential memorandums, Executive orders, and Federal statutory and regulatory requirements for the integrated management of cultural resources or that are in direct support of mission. These activities include day-to-day costs of sustaining an effective cultural resources management program as well as annual requirements (those requirements that occur once per year, every year).

E3.2. NON -RECURRING CULTURAL RESOURCES MANAGEMENT REQUIREMENTS

E3.2.1. Includes projects and activities needed to manage and maintain cultural resources under DoD control through a comprehensive program that considers the preservation of historic, archaeological, architectural, and cultural values that is mission supporting and results in sound and responsible stewardship.

E3.2.2. Those activities include, but are not limited to:

E3.2.2.1. Preserving the fabric, systems, and historic character and function of the DoD-built environment in a sustainable manner that supports the military mission and promotes the quality of life and work of the occupants and employees.

E3.2.2.2. Maintaining readiness while protecting U.S. heritage by incorporating cultural resources planning into installation planning at the earliest possible time.

E3.2.2.3. Supporting informed decisions about the management of cultural resources.

E3.2.2.4. Consulting in good faith with internal and external stakeholders, including Federal, State, and local government agencies; professional and advocacy organizations; and the general public by developing and fostering positive partnerships to manage and maintain cultural resources.

E4. ENCLOSURE 4

CULTURAL RESOURCES METRICS

E4.1. HEALTH OF THE INVENTORY OF CULTURAL RESOURCES

E4.1.1. Historic Buildings and Structures – Built Infrastructure

E4.1.1.1. Goal – Historic buildings and structures are maintained in good condition and used to support mission needs. Utilization (Performance Measure #1), Condition Index (Performance Measure #2), and Mission Dependency (Performance Measure #3) are three of the OMB performance measures in accordance with E.O. 13327 (Reference (x)) and as defined in the current edition of Reference (v). For full analysis, compare to non-historic buildings and structures.

E4.1.1.2. Activities That Must Report. United States – All installations with real property assets.

E4.1.1.3. Potential Data Sources

E4.1.1.3.1. Federal Real Property Inventory

E4.1.1.3.2. OSD Facilities Analysis Database

E4.1.1.4. What to Report

E4.1.1.4.1. Baseline Data: Number of buildings or structures that are historic properties.

E4.1.1.4.2. Any buildings or structures in the DoD Real Property Inventory with historical status data element (as defined in Reference (u)) of National Historic Landmark (NHLI or NHLC), National Register Listed (NRLI or NRLC), or National Register Eligible (NREI or NREC).

E4.1.1.4.3. UNIT – Each

E4.1.1.4.3.1. Number of NHLI Assets

E4.1.1.4.3.2. Number of NHLC Assets

E4.1.1.4.3.3. Number of NRLI Assets

E4.1.1.4.3.4. Number of NRLC Assets

E4.1.1.4.3.5. Number of NREI Assets

E4.1.1.4.3.6. Number of NREC Assets

E4.1.1.4.4. Metric: Percent of historic properties that are utilized or over-utilized.

E4.1.1.4.4.1. Of the NHLI, NHLC, NRLI, NRLC, NREI, or NREC buildings or structures in the Federal Real Property Inventory, report the number that have a category of “Utilized” or “Over-Utilized.”

E4.1.1.4.4.2. UNIT – Each. (Note: There are four options in the Federal Real Property Inventory for utilization – “Over-Utilized,” “Utilized,” “Under-Utilized,” and “Not Utilized.” See Reference (v) for more information.)

E4.1.1.4.4.2.1. Number of Over-Utilized (NHLI) Assets

- E4.1.1.4.4.2.2. Number of Utilized (NHLI) Assets
- E4.1.1.4.4.2.3. Number of Over-Utilized (NHLC) Assets
- E4.1.1.4.4.2.4. Number of Utilized (NHLC) Assets
- E4.1.1.4.4.2.5. Number of Over-Utilized (NRLI) Assets
- E4.1.1.4.4.2.6. Number of Utilized (NRLI) Assets
- E4.1.1.4.4.2.7. Number of Over-Utilized (NRLC) Assets
- E4.1.1.4.4.2.8. Number of Utilized (NRLC) Assets
- E4.1.1.4.4.2.9. Number of Over-Utilized (NREI) Assets
- E4.1.1.4.4.2.10. Number of Utilized (NREI) Assets
- E4.1.1.4.4.2.11. Number of Over-Utilized (NREC) Assets
- E4.1.1.4.4.2.12. Number of Utilized (NREC) Assets

E4.1.1.4.5. Metric – Percent of historic properties that have a high facility physical quality code (based on Condition Index as noted in paragraph E4.1.1.).

E4.1.1.4.5.1. Of the NHLI, NHLC, NRLI, NRLC, NREI, or NREC buildings or structures in the DoD Real Property Inventory, the number that have a facility physical quality code of Q2 or above.

E4.1.1.4.5.2. UNIT – Each

- E4.1.1.4.5.2.1. Number of NHLI Assets at Q1
- E4.1.1.4.5.2.2. Number of NHLI Assets at Q2
- E4.1.1.4.5.2.3. Number of NHLC Assets at Q1
- E4.1.1.4.5.2.4. Number of NHLC Assets at Q2
- E4.1.1.4.5.2.5. Number of NRLI Assets at Q1
- E4.1.1.4.5.2.6. Number of NRLI Assets at Q2
- E4.1.1.4.5.2.7. Number of NREI Assets at Q1
- E4.1.1.4.5.2.8. Number of NREI Assets at Q2
- E4.1.1.4.5.2.9. Number of NREC Assets at Q1
- E4.1.1.4.5.2.10. Number of NREC Assets at Q2

E4.1.1.4.6. Metric – Percent of historic buildings or structures used to support mission needs. Number of buildings or structures that are historic properties that are “Utilized” or “Over-Utilized.”

E4.1.1.4.6.1. Of the NHLI, NHLC, NRLI, NRLC, NREI, or NREC buildings or structures in the DoD Real Property Inventory, the number that are MC or MDNC.

E4.1.1.4.6.1. UNIT – Each

E4.1.1.4.6.1.1. Number of MC NHLI Assets

E4.1.1.4.6.1.2. Number of MDNC NHLI Assets

E4.1.1.4.6.1.3. Number of MC NHLC Assets

E4.1.1.4.6.1.4. Number of MDNC NHLC Assets

E4.1.1.4.6.1.5. Number of MC NRLI Assets

E4.1.1.4.6.1.6. Number of MDNC NRLI Assets

E4.1.1.4.6.1.7. Number of MC NRLC Assets

E4.1.1.4.6.1.8. Number of MDNC NRLC Assets

E4.1.1.4.6.1.9. Number of MC NREI Assets

E4.1.1.4.6.1.10. Number of MDNC NREI Assets

E4.1.1.4.6.1.11. Number of MC NREC Assets

E4.1.1.4.6.1.12. Number of MDNC NREC Assets

E4.1.1.4.7. Metric – Demolition of historic buildings or structures.

E4.1.1.4.7.1. Number of buildings or structures that are historic properties that were demolished in the previous Fiscal Year (FY). Of the NHLI, NHLC, NRLI, NRLC, NREI, or NREC buildings or structures in the DoD Real Property Inventory, the number that were demolished during the previous FY.

E4.1.1.4.7.2. UNIT – Each

E4.1.1.4.7.2.1. Number of NHLI buildings demolished in the previous FY

E4.1.1.4.7.2.2. Number of NHLC buildings demolished in the previous FY

E4.1.1.4.7.2.3. Number of NRLI buildings demolished in the previous FY

E4.1.1.4.7.2.4. Number of NRLC buildings demolished in the previous FY

E4.1.1.4.7.2.5. Number of NREI buildings demolished in the previous FY

E4.1.1.4.7.2.6. Number of NREC buildings demolished in the previous FY

E4.1.2. Curation of Archaeological Collections and Associated Records

E4.1.2.1. Goal: Archaeological collections and associated records are curated in accordance with part 79 of Reference (j).

E4.1.2.2. Activities That Must Report. United States – All installations with archaeological collections and associated records.

E4.1.2.3. Potential Data Sources

E4.1.2.3.1. Component submissions to the Secretary of the Interior's Report to Congress on the Federal Archaeology Program

E4.1.2.3.2. Heritage Assets Report

E4.1.2.4. What to Report

E4.1.2.4.1. Metric – Compliant curation of archaeological collections and associated records.

E4.1.2.4.2. Total volume less volume curated should be less than or equal to the volume acquired during the previous FY.

E4.1.2.4.3. UNIT – Cubic Feet

E4.1.2.4.3.1. Volume of collections requiring curation

E4.1.2.4.3.2. Volume of collections curated to 36 CFR 79

E4.1.2.4.3.3. Volume of collections acquired during the previous FY

E4.1.2.4.4. UNIT – Linear Feet

E4.1.2.4.4.1. Associated records requiring curation

E4.1.2.4.4.2. Associated records curated to 36 CFR 79

E4.1.2.4.4.3. Associated records acquired during the previous FY

E4.2. HEALTH OF THE CULTURAL RESOURCES PROGRAM

E4.2.1. Inventory and Evaluation of Historic Properties (Real Property Assets)

E4.2.1.1. Goal – All real property inventory records will accurately identify historic properties (real property assets).

E4.2.1.2. Activities That Must Report. United States – All installations with historic properties (real property assets).

E4.2.1.3. Potential Data Sources

E4.2.1.3.1. Federal Real Property Report

E4.2.1.3.2. OSD Facilities Analysis Database

E4.2.1.4. What to Report

E4.2.1.4.1. Metric – Percent of real property assets with the appropriate Historical Status Data Element Code, compared to “Not Yet Evaluated” (NEV).

E4.2.1.4.2. UNIT – Each. Note: To calculate percentage, compare first nine categories to NEV. Trend should be reduction of assets identified as NEV.

E4.2.1.4.2.1. Number of NHLI Assets

E4.2.1.4.2.2. Number of NHLC Assets

E4.2.1.4.2.3. Number of NRLI Assets

E4.2.1.4.2.4. Number of NRLC Assets

E4.2.1.4.2.5. Number of NREI Assets

E4.2.1.4.2.6. Number of NREC Assets

E4.2.1.4.2.7. Number of Eligible for the Purposes of a Program Alternative (ELPA) Assets

E4.2.1.4.2.8. Number of Non-contributing Element (NCE) Assets

E4.2.1.4.2.9. Number of Evaluated, Not Historic (DNE) Assets

E4.2.1.4.2.10. Number of NEV Assets

E4.2.2. Inventory of Historic Properties (Archaeological Sites)

E4.2.2.1. Goal – All DoD-managed lands that are available for survey are surveyed for archaeological assets and have the information readily available to support the process directed by Section 470 et seq. of Reference (e).

E4.2.2.2. Activities That Must Report

E4.2.2.2.1. United States – All installations with historic properties (archaeological sites).

E4.2.2.3. Potential Data Sources

E4.2.2.3.1. Component submissions to the Secretary of the Interior’s Report to Congress on the Federal Archaeology Program

E4.2.2.3.2. National Environmental Policy Act (NEPA) Documents

E4.2.2.4. What to Report

E4.2.2.4.1. Metric – Percent of DoD-managed lands (available for survey) surveyed for archaeological sites.

E4.2.2.4.2. UNIT –Acres

E4.2.2.4.2.1. Number of total DoD-managed acres, by Service

E4.2.2.4.2.2. Number of DoD-managed acres, by Service, available for survey

E4.2.2.4.2.3. Number of DoD-managed acres, by Service, available for survey and/or surveyed for archaeological sites

E4.2.3. Evaluation of Historic Properties (Archaeological Sites)

E4.2.3.1. Goal – All installations will have fully identified and evaluated archaeological sites within the area of potential effects (APE) and have the information available for installation planners prior to the initiation of military construction (MILCON)-related ground disturbing activities or construction.

E4.2.3.2. Activities That Must Report. United States – All installations with historic properties (archaeological sites)

E4.2.3.3. Potential Data Sources

E4.2.3.3.1. Component submissions to the Secretary of the Interior's Report to Congress on the Federal Archaeology Program

E4.2.3.3.2. NEPA Documents

E4.2.3.4. What to Report

E4.2.3.4.1. Metric – Percent of prior year MILCON-related ground disturbing activities for which archaeological sites were fully identified and evaluated prior to initiation of the MILCON activity

E4.2.3.4.2. UNIT – Number

E4.2.3.4.2.1. Number of prior year MILCON activities that were listed in a current ICRMP and reflected in an installation master plan

E4.2.3.4.2.2. Number of prior year MILCON activities that identified archaeological sites within the planned project APE prior to the completion of DD Form 1391, "FY__ Military Construction Project Data"

E4.2.3.4.2.3. Number of prior year MILCON activities that identified and evaluated archaeological sites prior to the completion of DD Form 1391, "FY__ Military Construction Project Data" and the notice to proceed for the MILCON project

E4.3. ADDITIONAL INFORMATION

E4.3.1. Geographic Information System (GIS)

E4.3.1.1. Goal – All installations with cultural resources will have information available in a GIS.

E4.3.1.2. Activities That Must Report. United States – All installations with cultural resources.

E4.3.1.3. What to Report

E4.3.1.3.1. Metric – Archaeological site information reflected in a GIS.

E4.3.1.3.2. UNIT – Number of Acres.

E4.3.1.3.2.1. Number of DoD-managed acres, by DoD Component, with archaeological sites.

E4.3.1.3.2.2. Number of DoD-managed acres, by DoD Component, available for survey and surveyed for archaeological sites for which information is available through a GIS.

E4.3.1.3.3. Metric – Percent of installations Historic Real Property Asset information reflected in a GIS.

E4.3.1.3.4. UNIT – Number.

E4.3.1.3.4.1. Number of installations that have cultural resources.

E4.3.1.3.4.2. Number of installations that have historic properties (real property assets) for which information is available through a GIS.

E4.3.2. Integrated Cultural Resource Management Plans

E4.3.2.1. Goal – All installations with cultural resources will complete and update ICRMPs as per this policy. In addition, all ICRMPs will be current and implemented, in consultation and partnership with State and tribal historic preservation officers, and other appropriate consulting parties.

E4.3.2.2. Activities That Must Report. United States – All installations with cultural resources.

E4.3.2.3. What to Report

E4.3.2.3.1. Metric – Percent of total ICRMPs, by DoD Component, complete; and percent of total ICRMPs, by DoD Component, developed in consultation and partnership.

E4.3.2.3.2. UNIT – Number

E4.3.2.3.2.1. Number of installations that have cultural resources and, therefore, are required to have an ICRMP.

E4.3.2.3.2.2. Number of installations that have cultural resources that have completed ICRMPs.

E4.3.2.3.2.3. Number of installations that have cultural resources that have completed ICRMPs that have been developed in consultation and partnership with State and tribal historic preservation officers, and other appropriate consulting parties.

E4.3.2.3.2.4. Number of installations that have completed inventories and have been granted a waiver, in consultation and partnership with State and tribal historic preservation officers, and other appropriate consulting parties, to prepare an ICRMP.

E4.3.3. Public Access to Cultural Resource Information

E4.3.3.1. Goal – All installations with cultural resources will have a public outreach program (in accordance with the implementation of Reference (f)).

E4.3.3.2. Activities That Must Report. United States – All installations with cultural resources.

E4.3.3.3. What to Report

E4.3.3.3.1. Metric – Percent of installations with cultural resources that have public web sites and/or tour programs.

E4.3.3.3.2. UNIT – Each

E4.3.3.3.2.1. Number of installations with cultural resources.

E4.3.3.3.2.2. Number of installations with cultural resources that have a cultural resources public web page or a cultural resources area on an installation's main web page.

E4.3.3.3.2.3. Number of installations with cultural resources that have regularly scheduled public tours of cultural resources.

E4.3.3.3.2.4. Number installations with cultural resources that include cultural resource information in a welcome package for new residents and/or employees and visitors.

E5. ENCLOSURE 5

ICRMP CONTENTS

E5.1. GENERAL CONTENTS

An ICRMP shall:

E5.1.1. Include a summary of general information about the installation's mission and history, as well as specific management information necessary for managing the installation's cultural resources.

E5.1.2. Provide cultural resources context information pertinent to the full range of cultural resources within the installation's jurisdiction.

E5.1.3. Identify all legal requirements pertinent to cultural resources management.

E5.1.4. Identify the installation's cultural resources, including areas characterized as to potential for cultural resources and a prioritized list for further identification or survey.

E5.1.5. Recommend procedures for managing the installation's cultural resources in a manner that is compatible with the installation mission and satisfies legal requirements.

E5.1.6. Establish priorities for cultural resources management that ensure support of the mission, compliance with legal requirements, and ongoing stewardship responsibilities.

E5.1.7. Provide management procedures for the ongoing identification, maintenance, and enhancement of cultural resources.

E5.1.8. Promote the use of cultural resources in ways that are beneficial to the military mission, the resources, and other public interests.

E5.1.9. Be thoroughly integrated with other installation plans, including but not limited to the installation master plan, the facilities maintenance plan, training and range area management plans, natural resources management plans, mobilization and deployment plans, and information management systems.

E5.1.10. Establish requirements, goals, and targets that can be easily reflected in budget documents and decision-making processes and addressed in conservation self-assessments.

E5.1.11. Address cultural resources and areas of critical or special concern from both technical and policy standpoints.

E5.2. SPECIFIC CONTENTS OF AN ICRMP

An ICRMP shall include, as appropriate:

- E5.2.1. A summary of known cultural resources information and a list and brief description of properties listed or eligible for listing in the National Register of Historic Places.
- E5.2.2. Analysis of the sufficiency of the existing information on cultural resources and associated contexts to meet compliance requirements.
- E5.2.3. Information on areas that have not been surveyed and a plan for completion of the surveys.
- E5.2.4. Identification and prioritization of actions required to implement goals and objectives of the plan.
- E5.2.5. Identification of the type and location of actions that may affect cultural resources.
- E5.2.6. Procedures to ensure that actions of the installation and its tenants are planned and carried out in ways that protect and enhance its cultural resources.
- E5.2.7. Identification of unique cultural resource issues confronting the installation.
- E5.2.8. Preservation and mitigation strategies for threatened cultural resources.
- E5.2.9. Coordination processes between the installation, regulatory agencies (such as the Advisory Council on Historic Preservation and State and tribal historic preservation officers), stakeholders, and the public that help to ensure proper management of an installation's cultural resources.
- E5.2.10. Provisions for permanent storage of historic property records, as required by parts 1220 and 1228 of Reference (d) and other recordkeeping requirements.
- E5.2.11. Standard operating procedures for routine occurrences and where blanket statements can coordinate a process, such as inventories, repetitive maintenance and repair, unanticipated discoveries and reporting, and spill responses where cultural resources are involved and tailored for the particular conditions at the installation.
- E5.2.12. Procedures for the documentation of historic properties that will be altered or destroyed as a result of DoD action or assistance, in accordance with part 800 of Reference (d).
- E5.2.13. Procedures to respond to unanticipated discovery of a historic property or other cultural resource.
- E5.2.14. Procedures to ensure that all archaeological collections are properly processed, maintained, and preserved in accordance with part 79 of Reference (d).
- E5.2.15. Provisions for sharing appropriate cultural resources information with Federal and state agencies, nongovernmental organizations, researchers, stakeholders, and the general public.
- E5.2.16. Provisions for enforcement of cultural resource laws and regulations by professionally trained personnel.
- E5.2.17. Provisions for public access to cultural resources, as appropriate.
- E5.2.18. Explicit summary of the process for integrating the NHPA Section 106 planning process with the installation's production of environmental assessment documents in accordance with activities listed in Reference (n).

The National Historic Preservation Act of 1966, as amended

AN ACT to Establish a Program for the Preservation of Additional Historic Properties throughout the Nation, and for Other Purposes, Approved October 15, 1966 (Public Law 89665; 80 Stat. 915; 16 U.S.C. 470) as amended by (Public Law 91243, Public Law 93-54, Public Law 94422, Public Law 94458, Public Law 96199, Public Law 96244, Public Law 96515, Public Law 98483, Public Law 99514, Public Law 100127, and Public Law 102575).

Section 1 (*16 U.S.C. 470*)

(a) This Act may be cited as the "National Historic Preservation Act."

(b) The Congress finds and declares that

(1) the spirit and direction of the Nation are founded upon and reflected in its historic heritage;

(2) the historical and cultural foundations of the Nation should be preserved as a living part of our community life and development in order to give a sense of orientation to the American people;

(3) historic properties significant to the Nation's heritage are being lost or substantially altered, often inadvertently, with increasing frequency;

(4) the preservation of this irreplaceable heritage is in the public interest so that its vital legacy of cultural, educational, esthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans;

(5) in the face of ever increasing extensions of urban centers, highways, and residential, commercial, and industrial developments, the present governmental and nongovernmental historic preservation programs and activities are inadequate to ensure future generations a genuine opportunity to appreciate and enjoy the rich heritage of our Nation;

(6) the increased knowledge of our historic resources, the establishment of better means of identifying and administering them, and the encouragement of their preservation will improve the planning and execution of Federal and federally assisted projects and will assist economic growth and development; and

(7) although the major burdens of historic preservation have been borne and major efforts initiated by private agencies and individuals, and both should continue to play a vital role, it is nevertheless necessary and appropriate for the Federal Government to accelerate its historic preservation programs and activities, to give maximum encouragement to

agencies and individuals undertaking preservation by private means, and to assist State and local governments and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

Section 2 (16 U.S.C. 4701)

It shall be the policy of the Federal Government, in cooperation with other nations and in partnership with the States, local governments, Indian tribes, and private organization and individuals to

(1) use measures, including financial and technical assistance, to foster conditions under which our modern society and our prehistoric and historic resources can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations;

(2) provide leadership in the preservation of the prehistoric and historic resources of the United States and of the international community of nations and in the administration of the national preservation program in partnership with States, Indian tribes, Native Hawaiians, and local governments;

(3) administer federally owned, administered, or controlled prehistoric and historic resources in a spirit of stewardship for the inspiration and benefit of present and future generations;

(4) contribute to the preservation of non-federally owned prehistoric and historic resources and give maximum encouragement to organization and individuals undertaking preservation by private means;

(5) encourage the public and private preservation and utilization of all usable elements of the Nation's historic build environment; and

(6) assist State and local governments, Indian tribes and Native Hawaiian organizations and the National Trust for Historic Preservation in the United States to expand and accelerate their historic preservation programs and activities.

TITLE I

Section 101 (16 U.S.C. 470a)

(a)(1)(A) The Secretary of the Interior is authorized to expand and maintain a National Register of Historic Places composed of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, engineering, and culture.

National Historic Landmarks, designation

(B) Properties meeting the criteria for National Historic Landmarks established pursuant to paragraph (2) shall be designated as "National Historic Landmarks" and included on the National Register, subject to the requirements of paragraph (6). All historic properties included on the National Register on the date of enactment of the National Historic Preservation Act Amendments of 1980 shall be deemed to be included on the National Register as of their initial listing for purposes of this Act. All historic properties listed in the Federal Register of February 6, 1979, as "National Historic Landmarks" or thereafter prior to the effective date of this Act are declared by Congress to be National Historic Landmarks of national historic significance as of their initial listing as such in the Federal Register for purposes of this Act and the Act of August 21, 1935 (49 Stat. 666); except that in cases of National Historic Landmark districts for which no boundaries have been established, boundaries must first be published in the Federal Register and submitted to the Committee on Energy and Natural Resources of the United States Senate and to the Committee on Interior and Insular Affairs of the United States House of Representatives.

(2) The Secretary in consultation with national historical and archeological associations, shall establish or revise criteria for properties to be included on the National Register and criteria for National Historic Landmarks, and shall also promulgate or revise regulations as may be necessary for

(A) nominating properties for inclusion in, and removal from, the National Register and the recommendation of properties by certified local governments;

(B) designating properties as National Historic Landmarks and removing such designation;

(C) considering appeals from such recommendations, nomination, removals, and designations (or any failure or refusal by a nominating authority to nominate or designate);

(D) nominating historic properties for inclusion in the World Heritage List in accordance with the terms of the Convention concerning the Protection of the World Cultural and Natural Heritage;

(E) making determinations of eligibility of properties for inclusion on the National Register; and

(F) notifying the owner of a property, and any appropriate local governments, and the general public when the property is being considered for inclusion on the National Register, for designation as a National Historic Landmark or for nomination to the World Heritage List.

(3) Subject to the requirements of paragraph (6), any State which is carrying out a program approved under subsection (b), shall nominate to the Secretary properties which meet the criteria promulgated under subsection (a) for inclusion on the National Register. Subject to paragraph (6), any property nominated under this paragraph or under section

110(a)(2) shall be included on the National Register on the date fortyfive days after receipt by the Secretary of the nomination and the necessary documentation, unless the Secretary disapproves such nomination within such fortyfive day period or unless an appeal is filed under paragraph (5).

(4) Subject to the requirements of paragraph (6) the Secretary may accept a nomination directly from any person or local government for inclusion of a property on the National Register only if such property is located in a State where there is no program approved under subsection (b). The Secretary may include on the National Register any property for which such a nomination is made if he determines that such property is eligible in accordance with the regulations promulgated under paragraph (2). Such determinations shall be made within ninety days from the date of nomination unless the nomination is appealed under paragraph (5).

(5) Any person or local government may appeal to the Secretary a nomination of any historic property for inclusion on the National Register and may appeal to the Secretary the failure or refusal of a nominating authority to nominate a property in accordance with this subsection.

(6) The Secretary shall promulgate regulations requiring that before any property or district may be included on the National register or designated as a National Historic Landmark, the owner or owners of such property, or a majority of the owners of the properties within the district in the case of a historic district, shall be given the opportunity (including a reasonable period of time) to concur in, or object to, the nomination of the property or district for such inclusion or designation. If the owner or owners of any privately owned property, or a majority of the owners of such properties within the district in the case of a historic district, object to such inclusion or designation, such property shall not be included on the National Register or designated as a National Historic Landmark until such objection is withdrawn. The Secretary shall review the nomination of the property or district where any such objection has been made and shall determine whether or not the property or district is eligible for such inclusion or designation, and if the Secretary determines that such property or district is eligible for such inclusion or designation, he shall inform the Advisory Council on Historic Preservation, the appropriate State Historic Preservation Officer, the appropriate chief elected local official and the owner or owners of such property, of his determination. The regulations under this paragraph shall include provisions to carry out the purposes of this paragraph in the case of multiple ownership of a single property.

(7) The Secretary shall promulgate, or revise, regulations

Regulations for curation, documentation, and local government certification

(A) ensuring that significant prehistoric and historic artifacts, and associated records, subject to section 110 of this Act, the Act of June 27, 1960 (16 U.S.C. 469c), and the Archeological Resources Protection Act of 1979 (16 U.S.C. 470aa and following) are deposited in an institution with adequate longterm curatorial capabilities;

(B) establishing a uniform process and standards for documenting historic properties by public agencies and private parties for purposes of incorporation into, or complementing, the national historic architectural and engineering records within the Library of Congress; and

(C) certifying local governments, in accordance with subsection (c)(1) and for the allocation of funds pursuant to section 103(c) of this Act.

(8) The Secretary shall, at least once every 4 years, in consultation with the Council and with State Historic Preservation Officers, review significant threats to properties included in, or eligible for inclusion on, the National Register, in order to

(A) determine the kinds of properties that may be threatened;

(B) ascertain the causes of the threats; and

(C) develop and submit to the President and Congress recommendations for appropriate action.

State Historic Preservation Programs

(b)(1) The Secretary, in consultation with the National Conference of State Historic Preservation Officers and the National Trust for Historic Preservation, shall promulgate or revise regulations for State Historic Preservation Programs. Such regulations shall provide that a State program submitted to the Secretary under this section shall be approved by the Secretary if he determines that the program

(A) provides for the designation and appointment by the Governor of a "State Historic Preservation Officer" to administer such program in accordance with paragraph (3) and for the employment or appointment by such officer of such professionally qualified staff as may be necessary for such purposes;

(B) provides for an adequate and qualified State historic preservation review board designated by the State Historic Preservation Officer unless otherwise provided for by State law; and

(C) provides for adequate public participation in the State Historic Preservation Program, including the process of recommending properties for nomination to the National Register.

(2)(A) Periodically, but not less than every 4 years after the approval of any State program under this subsection, the Secretary, in consultation with the Council on the appropriate provisions of this Act, and in cooperation with the State Historic Preservation Officer, shall evaluate the program to determine whether it is consistent with this Act.

(B) If, at any time, the Secretary determines that a major aspect of a State program is not

consistent with this Act, the Secretary shall disapprove the program and suspend in whole or in part any contracts or cooperative agreements with the State and the State Historic Preservation Officer under this Act, until the program is consistent with this Act, unless the Secretary determines that the program will be made consistent with this Act within a reasonable period of time.

(C) The Secretary, in consultation with State Historic Preservation Officers, shall establish oversight methods to ensure State program consistency and quality without imposing undue review burdens on State Historic Preservation Officers.

(D) At the discretion of the Secretary, a State system of fiscal audit and management may be substituted for comparable Federal systems so long as the State system

(i) establishes and maintains substantially similar accountability standards; and

(ii) provides for independent professional peer review.

The Secretary may also conduct periodic fiscal audits of State programs approved under this section as needed and shall ensure that such programs meet applicable accountability standards.

(3) It shall be the responsibility of the State Historic Preservation Officer to administer the State Historic Preservation Program and to

(A) in cooperation with Federal and State agencies, local governments, and private organizations and individuals, direct and conduct a comprehensive statewide survey of historic properties and maintain inventories of such properties;

(B) identify and nominate eligible properties to the National Register and otherwise administer applications for listing historic properties on the National Register;

(C) prepare and implement a comprehensive statewide historic preservation plan;

(D) administer the State program of Federal assistance for historic preservation within the State;

(E) advise and assist, as appropriate, Federal and State agencies and local governments in carrying out their historic preservation responsibilities;

(F) cooperate with the Secretary, the Advisory Council on Historic Preservation, and other Federal and State agencies, local governments, and organizations and individuals to ensure that historic properties are taken into consideration at all levels of planning and development;

(G) provide public information, education and training, and technical assistance in historic preservation;

(H) cooperate with local governments in the development of local historic preservation programs and assist local governments in becoming certified pursuant to subsection (c);

(I) consult with the appropriate Federal agencies in accordance with this Act on

(i) Federal undertakings that may affect historical properties; and

(ii) the content and sufficiency of any plans developed to protect, manage, or to reduce or mitigate harm to such properties; and

(J) advise and assist in the evaluation of proposals for rehabilitation projects that may qualify for Federal assistance.

(4) Any State may carry out all or any part of its responsibilities under this subsection by contract or cooperative agreement with any qualified nonprofit organization or educational institution.

(5) Any State historic preservation program in effect under prior authority of law may be treated as an approved program for purposes of this subsection until the earlier of

(A) the date on which the Secretary approves a program submitted by the State under this subsection, or

(B) three years after the date of the enactment of the National Historic Preservation Act Amendments of 1992.

(6)(A) Subject to subparagraphs (c) and (d), the Secretary may enter into contracts or cooperative agreements with a State Historic Preservation Officer for any State authorizing such Officer to assist the Secretary in carrying out one or more of the following responsibilities within that State

(i) Identification and preservation of historic properties.

(ii) Determination of the eligibility of properties for listing on the National Register.

(iii) Preparation of nominations for inclusion on the National Register.

(iv) Maintenance of historical and archaeological data bases.

(v) Evaluation of eligibility for Federal preservation incentives.

Nothing in this paragraph shall be construed to provide that any State Historic Preservation Officer or any other person other than the Secretary shall have the authority to maintain the National Register for properties in any State.

(B) The Secretary may enter into a contract or cooperative agreement under subparagraph

(a) only if

(i) the State Historic Preservation Officer has requested the additional responsibility;

(ii) the Secretary has approved the State historic preservation program pursuant to section 101(b)(1) and (2);

(iii) the State Historic Preservation Officer agrees to carry out the additional responsibility in a timely and efficient manner acceptable to the Secretary and the Secretary determines that such Officer is fully capable of carrying out such responsibility in such manner;

(iv) the State Historic Preservation Officer agrees to permit the Secretary to review and revise, as appropriate in the discretion of the Secretary, decisions made by the Officer pursuant to such contract or cooperative agreement; and

(v) the Secretary and the State Historic Preservation Officer agree on the terms of additional financial assistance to the State, if there is to be any, for the costs of carrying out such responsibility.

(C) For each significant program area under the Secretary's authority, the Secretary shall establish specific conditions and criteria essential for the assumption by State Historic Preservation Officers of the Secretary's duties in each such program.

(D) Nothing in this subsection shall have the effect of diminishing the preservation programs and activities of the National Park Service.

(c)(1) Any State program approved under this section shall provide a mechanism for the certification by the State Historic Preservation Officer of local governments to carry out the purposes of this Act and provide for the transfer, in accordance with section 103(c), of a portion of the grants received by the States under this Act, to such local governments. Any local government shall be certified to participate under the provisions of this section if the applicable State Historic Preservation Officer, and the Secretary, certifies that the local government

(A) enforces appropriate State or local legislation for the designation and protection of historic properties;

(B) has established an adequate and qualified historic preservation review commission by State or local legislation;

(C) maintains a system for the survey and inventory of historic properties that furthers the purposes of subsection (b);

(D) provides for adequate public participation in the local historic preservation program, including the process of recommending properties for nomination to the National

Register; and

(E) satisfactorily performs the responsibilities delegated to it under this Act.

Where there is no approved State program, a local government may be certified by the Secretary if he determines that such local government meets the requirements of subparagraphs (a) through (e); and in any such case the Secretary may make grants in aid to the local government for purposes of this section.

(2)(A) Before a property within the jurisdiction of the certified local government may be considered by the State to be nominated to the Secretary for inclusion on the National Register, the State Historic Preservation Officer shall notify the owner, the applicable chief local elected official, and the local historic preservation commission. The commission, after reasonable opportunity for public comment, shall prepare a report as to whether or not such property, in its opinion, meets the criteria of the National Register. Within sixty days of notice from the State Historic Preservation Officer, the chief local elected official shall transmit the report of the commission and his recommendation to the State Historic Preservation Officer. Except as provided in subparagraph (B), after receipt of such report and recommendation, or if no such report and recommendation are received within sixty days, the State shall make the nomination pursuant to section 101(a). The State may expedite such process with the concurrence of the certified local government.

(B) If both the commission and the chief local elected official recommend that a property not be nominated to the National Register, the State Historic Preservation Officer shall take no further action, unless within thirty days of the receipt of such recommendation by the State Historic Preservation Officer an appeal is filed with the State. If such an appeal is filed, the State shall follow the procedures for making a nomination pursuant to section 101(a). Any report and recommendations made under this section shall be included with any nomination submitted by the State to the Secretary.

(3) Any local government certified under this section or which is making efforts to become so certified shall be eligible for funds under the provisions of section 103(c) of this Act, and shall carry out any responsibilities delegated to it in accordance with such terms and conditions as the Secretary deems necessary or advisable.

(4) For the purposes of this section the term

(A) "**designation**" means the identification and registration of properties for protection that meet criteria established by the State or the locality for significant historic and prehistoric resources within the jurisdiction of a local government; and

(B) "**protection**" means a local review process under State or local law for proposed demolition of, changes to, or other action that may affect historic properties designated pursuant to subsection (c).

(d)(1)(A) The Secretary shall establish a program and promulgate regulations to assist Indian tribes in preserving their particular historic properties. The Secretary shall foster communication and cooperation between Indian tribes and State Historic Preservation Officers in the administration of the national historic preservation program to ensure that all types of historic properties and all public interests in such properties are given due consideration, and to encourage coordination among Indian tribes, State Historic Preservation Officers, and Federal agencies in historic preservation planning and in the identification, evaluation, protection, and interpretation of historic properties.

(B) The program under subparagraph (a) shall be developed in such a manner as to ensure that tribal values are taken into account to the extent feasible. The Secretary may waive or modify requirements of this section to conform to the cultural setting of tribal heritage preservation goals and objectives. The tribal programs implemented by specific tribal organizations may vary in scope, as determined by each tribe's chief governing authority.

(C) The Secretary shall consult with Indian tribes, other Federal agencies, State Historic Preservation Officers, and other interested parties and initiate the program under subparagraph (a) by not later than October 1, 1994.

Tribal assumption of State Historic Preservation Officer functions

(2) A tribe may assume all or any part of the functions of a State Historic Preservation Officer in accordance with subsections (b)(2) and (b)(3), with respect to tribal lands, as such responsibilities may be modified for tribal programs through regulations issued by the Secretary if

(A) the tribe's chief governing authority so requests;

(B) the tribe designates a tribal preservation official to administer the tribal historic preservation program, through appointment by the tribe's chief governing authority or as a tribal ordinance may otherwise provide;

(C) the tribal preservation official provides the Secretary with a plan describing how the functions the tribal preservation official proposes to assume will be carried out;

(D) the Secretary determines, after consultation with the tribe, the appropriate State Historic Preservation Officer, the Council (if the tribe proposes to assume the functions of the State Historic Preservation Officer with respect to review of undertakings under section 106), and other tribes, if any, whose tribal or aboriginal lands may be affected by conduct of the tribal preservation program

(i) that the tribal preservation program is fully capable of carrying out the functions specified in the plan provided under subparagraph (c);

(ii) that the plan defines the remaining responsibilities of the Secretary and the State

Historic Preservation Officer;

(iii) that the plan provides, with respect to properties neither owned by a member of the tribe nor held in trust by the Secretary for the benefit of the tribe, at the request of the owner thereof, the State Historic Preservation Officer, in addition to the tribal preservation official, may exercise the historic preservation responsibilities in accordance with subsections (b)(2) and (b)(3); and

(E) based on satisfaction of the conditions stated in subparagraphs (a), (b), (c), and (d), the Secretary approves the plan.

(3) In consultation with interested Indian tribes, other Native American organizations and affected State Historic Preservation Officers, the Secretary shall establish and implement procedures for carrying out section 103(a) with respect to tribal programs that assume responsibilities under paragraph (2).

(4) At the request of a tribe whose preservation program has been approved to assume functions and responsibilities pursuant to paragraph (2), the Secretary shall enter into contracts or cooperative agreements with such tribe permitting the assumption by the tribe of any part of the responsibilities referred to in subsection (b)(6) on tribal land, if

(A) the Secretary and the tribe agree on additional financial assistance, if any, to the tribe for the costs of carrying out such authorities;

(B) the Secretary finds that the tribal historic preservation program has been demonstrated to be sufficient to carry out the contract or cooperative agreement and this Act; and

(C) the contract or cooperative agreement specifies the continuing responsibilities of the Secretary or of the appropriate State Historic Preservation Officers and provides for appropriate participation by

(i) the tribe's traditional cultural authorities;

(ii) representatives of other tribes whose traditional lands are under the jurisdiction of the tribe assuming responsibilities; and

(iii) the interested public.

Review of undertakings under tribal preservation regulations instead of section 106

(5) The Council may enter into an agreement with an Indian tribe to permit undertakings on tribal land to be reviewed under tribal historic preservation regulations in place of review under regulations promulgated by the Council to govern compliance with section 106, if the Council, after consultation with the tribe and appropriate State Historic Preservation Officers, determines that the tribal preservation regulations will afford

historic properties consideration equivalent to those afforded by the Council's regulations.

(6)(A) Properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined to be eligible for inclusion on the National Register.

Section 106 review and religious and cultural properties

(B) In carrying out its responsibilities under section 106, a Federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to properties described in subparagraph (A).

(C) In carrying out his or her responsibilities under subsection (b)(3), the State Historic Preservation Officer for the State of Hawaii shall

(i) consult with Native Hawaiian organizations in assessing the cultural significance of any property in determining whether to nominate such property to the National Register;

(ii) consult with Native Hawaiian organizations in developing the cultural component of a preservation program or plan for such property; and

(iii) enter into a memorandum of understanding or agreement with Native Hawaiian organizations for the assessment of the cultural significance of a property in determining whether to nominate such property to the National Register and to carry out the cultural component of such preservation program or plan.

(e)(1) The Secretary shall administer a program of matching grants to the States for the purposes of carrying out this Act.

Grants to the National Trust

(2) The Secretary shall administer a program of matching grants in aid to the National Trust for Historic Preservation in the United States, chartered by Act of Congress approved October 26, 1949 (63 Stat. 947), for the purposes of carrying out the responsibilities of the National Trust.

(3)(A) In addition to the programs under paragraphs (1) and (2), the Secretary shall administer a program of direct grants for the preservation of properties included on the National Register. Funds to support such program annually shall not exceed 10 per centum of the amount appropriated annually for the fund established under section 108. These grants may be made by the Secretary, in consultation with the appropriate State Historic Preservation Officer

(i) for the preservation of National Historic Landmarks which are threatened with demolition or impairment and for the preservation of historic properties of World Heritage significance;

(ii) for demonstration projects which will provide information concerning professional methods and techniques having application to historic properties;

(iii) for the training and development of skilled labor in trades and crafts, and in analysis and curation, relating to historic preservation; and,

(iv) to assist persons or small businesses within any historic district included in the National Register to remain within the district.

(B) The Secretary may also, in consultation with the appropriate State Historic Preservation Officer, make grants or loans or both under this section to Indian tribes and to nonprofit organizations representing ethnic or minority groups for the preservation of their cultural heritage.

(C) Grants may be made under subparagraph (a)(i) and (iv) only to the extent that the project cannot be carried out in as effective a manner through the use of an insured loan under section 104.

(4) Grants may be made under this subsection for the preservation, stabilization, restoration, or rehabilitation of religious properties listed in the National Register of Historic Places, provided that the purpose of the grant is secular, does not promote religion, and seeks to protect those qualities that are historically significant. Nothing in this paragraph shall be construed to authorize the use of any funds made available under this section for the acquisition of any property referred to in the preceding sentence.

(5) The Secretary shall administer a program of direct grants to Indian tribes and Native Hawaiian organizations for the purpose of carrying out this Act as it pertains to Indian tribes and Native Hawaiian organizations. Matching fund requirements may be modified. Federal funds available to a tribe or Native Hawaiian organization may be used as matching funds for the purposes of the tribe's or organization's conducting its responsibilities pursuant to this section.

(6)(A) As a part of the program of matching grant assistance from the Historic Preservation Fund to States, the Secretary shall administer a program of direct grants to the Federated States of Micronesia, the Republic of the Marshall Islands, the Trust Territory of the Pacific Islands, and upon termination of the Trusteeship Agreement for the Trust Territory of the Pacific Islands, the Republic of Palau (referred to as the Micronesian States) in furtherance of the Compact of Free Association between the United States and the Federated States of Micronesia and the Marshall Islands, approved by the Compact of Free Association Act of 1985 (48 U.S.C. 1681 note), the Trusteeship Agreement for the Trust Territory of the Pacific Islands, and the Compact of Free Association between the United States and Palau, approved by the Joint Resolution entitled 'Joint Resolution to approve the "Compact of Free Association" between the United States and Government of Palau, and for other purposes' (48 U.S.C. 1681 note). The goal of the program shall be to establish historic and cultural preservation programs that meet the unique needs of each Micronesian State so that at the termination of the

compacts the programs shall be firmly established. The Secretary may waive or modify the requirements of this section to conform to the cultural setting of those nations.

(B) The amounts to be made available to the Micronesian States shall be allocated by the Secretary on the basis of needs as determined by the Secretary. Matching funds may be waived or modified.

(f) No part of any grant made under this section may be used to compensate any person intervening in any proceeding under this Act.

(g) In consultation with the Advisory Council on Historic Preservation, the Secretary shall promulgate guidelines for Federal agency responsibilities under section 110 of this title.

(h) Within one year after the date of enactment of the National Historic Preservation Act Amendments of 1980, the Secretary shall establish, in consultation with the Secretaries of Agriculture and Defense, the Smithsonian Institution, and the Administrator of the General Services Administration, professional standards for the preservation of historic properties in Federal ownership or control.

(i) The Secretary shall develop and make available to Federal agencies, State and local governments, private organizations and individuals, and other nations and international organizations pursuant to the World Heritage Convention, training in, and information concerning professional methods and techniques for the preservation of historic properties and for the administration of the historic preservation program at the Federal, State, and local level. The Secretary shall also develop mechanisms to provide information concerning historic preservation to the general public including students.

(j)(1) The Secretary shall, in consultation with the Council and other appropriate Federal, tribal, Native Hawaiian, and nonFederal organizations, develop and implement a comprehensive preservation education and training program.

(2) The education and training program described in paragraph (1) shall include

(A) new standards and increased preservation training opportunities for Federal workers involved in preservation-related functions;

(B) increased preservation training opportunities for other Federal, State, tribal and local government workers, and students;

(C) technical or financial assistance, or both, to historically black colleges and universities, to tribal colleges, and to colleges with a high enrollment of Native Americans or Native Hawaiians, to establish preservation training and degree programs;

(D) coordination of the following activities, where appropriate, with the National Center for Preservation Technology and Training

- (i) distribution of information on preservation technologies;
- (ii) provision of training and skill development in trades, crafts, and disciplines related to historic preservation in Federal training and development programs; and
- (iii) support for research, analysis, conservation, curation, interpretation, and display related to preservation.

Section 102 (16 U.S.C. 470b)

(a) No grant may be made under this Act

(1) unless application therefore is submitted to the Secretary in accordance with regulations and procedures prescribed by him;

(2) unless the application is in accordance with the comprehensive statewide historic preservation plan which has been approved by the Secretary after considering its relationship to the comprehensive statewide outdoor recreation plan prepared pursuant to the Land and Water Conservation Fund Act of 1965 (78 Stat. 897);

(3) for more than 60 percent of the aggregate costs of carrying out projects and programs under the administrative control of the State Historic Preservation Officer as specified in section 101(b)(3) in any one fiscal year;

(4) unless the grantee has agreed to make such reports, in such form and containing such information as the Secretary may from time to time require;

(5) unless the grantee has agreed to assume, after completion of the project, the total cost of the continued maintenance, repair, and administration of the property in a manner satisfactory to the Secretary; and

(6) until the grantee has complied with such further terms and conditions as the Secretary may deem necessary or advisable.

Except as permitted by other law, the State share of the costs referred to in paragraph (3) shall be contributed by non-Federal sources. Notwithstanding any other provision of law, no grant made pursuant to this Act shall be treated as taxable income for purposes of the Internal Revenue Code 1954.

(b) The Secretary may in his discretion waive the requirements of subsection (a), paragraphs (2) and (5) of this section for any grant under this Act to the National Trust for Historic Preservation in the United States.

(c) No State shall be permitted to utilize the value of real property obtained before the date of approval of this Act in meeting the remaining cost of a project for which a grant is made under this Act.

(d) The Secretary shall make funding available to individual States and the National Trust for Historic Preservation as soon as practicable after execution of a grant agreement. For purposes of administration, grants to individual States and the National Trust each shall be considered to be one grant and shall be administered by the National Park Service as such.

(e) The total administrative costs, direct and indirect, charged for carrying out State projects and programs may not exceed 25 percent of the aggregate costs except in the case of grants under section 101(e)(6).

Section 103 (16 U.S.C. 470c)

(a) The amounts appropriated and made available for grants to the States for the purposes of this Act shall be apportioned among the States by the Secretary on the basis of needs as determined by him.

(b) The amounts appropriated and made available for grants to the States for projects and programs under this Act for each fiscal year shall be apportioned among the States as the Secretary determines to be appropriate. The Secretary shall notify each State of its apportionment under this subsection within thirty days following the date of enactment of legislation appropriating funds under this Act. Any amount of any apportionment that has not been paid or obligated by the Secretary during the fiscal year in which such notification is given and for two fiscal years thereafter, shall be reapportioned by the Secretary in accordance with this subsection. The Secretary shall analyze and revise as necessary the method of apportionment. Such method and any revision thereof shall be published by the Secretary in the Federal Register.

(c) A minimum of 10 per centum of the annual apportionment distributed by the Secretary to each State for the purposes of carrying out this Act shall be transferred by the State, pursuant to the requirements of this Act, to local governments which are certified under section 101(c) for historic preservation projects or programs of such local governments. In any year in which the total annual apportionment to the States exceeds \$65,000,000, one half of the excess shall also be transferred by the States to local governments certified pursuant to section 101(c).

(d) The Secretary shall establish guidelines for the use and distribution of funds under subsection (c) to ensure that no local government receives a disproportionate share of the funds available, and may include a maximum or minimum limitation on the amount of funds distributed to any single local government. The guidelines shall not limit the ability of any State to distribute more than 10 per centum of its annual apportionment under subsection (c), nor shall the Secretary require any State to exceed the 10 per centum minimum distribution to local governments.

Section 104 (16 U.S.C. 470d)

(a) The Secretary shall establish and maintain a program by which he may, upon

application of a private lender, insure loans (including loans made in accordance with a mortgage) made by such lender to finance any project for the preservation of a property included on the National Register.

(b) A loan may be insured under this section only if

(1) the loan is made by a private lender approved by the Secretary as financially sound and able to service the loan properly;

(2) the amount of the loan, and interest rate charged with respect to the loan, do not exceed such amount, and such a rate, as is established by the Secretary, by rule;

(3) the Secretary has consulted the appropriate State Historic Preservation Officer concerning the preservation of the historic property;

(4) the Secretary has determined that the loan is adequately secured and there is reasonable assurance of repayment

(5) the repayment period of the loan does not exceed the lesser of forty years or the expected life of the asset financed;

(6) the amount insured with respect to such loan does not exceed 90 per centum of the loss sustained by the lender with respect to the loan; and

(7) the loan, the borrower, and the historic property to be preserved meet other terms and conditions as may be prescribed by the Secretary, by rule, especially terms and conditions relating to the nature and quality of the preservation work.

The Secretary shall consult with the Secretary of the Treasury regarding the interest rate of loans insured under this section.

(c) The aggregate unpaid principal balance of loans insured under this section and outstanding at any one time may not exceed the amount which has been covered into the Historic Preservation Fund pursuant to section 108 and subsection (g) and (i) of this section, as in effect on the date of the enactment of the Act but which has not been appropriated for any purpose.

(d) Any contract of insurance executed by the Secretary under this section may be assignable, shall be an obligation supported by the full faith and credit of the United States, and shall be incontestable except for fraud or misrepresentation of which the holder had actual knowledge at the time it became a holder.

(e) The Secretary shall specify, by rule and in each contract entered into under this section, the conditions and method of payment to a private lender as a result of losses incurred by the lender on any loan insured under this section.

(f) In entering into any contract to insure a loan under this section, the Secretary shall take steps to assure adequate protection of the financial interests of the Federal Government.

The Secretary may

(1) in connection with any foreclosure proceeding, obtain, on behalf of the Federal Government, the property securing a loan insured under this title; and

(2) operate or lease such property for such period as may be necessary to protect the interest of the Federal Government and to carry out subsection (g).

(g)(1) In any case in which a historic property is obtained pursuant to subsection (f), the Secretary shall attempt to convey such property to any governmental or nongovernmental entity under such conditions as will ensure the property's continued preservation and use; except that if, after a reasonable time, the Secretary, in consultation with the Advisory Council on Historic Preservation, determines that there is no feasible and prudent means to convey such property and to ensure its continued preservation and use, then the Secretary may convey the property at the fair market value of its interest in such property to any entity without restriction.

(2) Any funds obtained by the Secretary in connection with the conveyance of any property pursuant to paragraph (1) shall be covered into the historic preservation fund, in addition to the amounts covered into such fund pursuant to section 108 and subsection (i) of this section, and shall remain available in such fund until appropriated by the Congress to carry out the purposes of this Act.

(h) The Secretary may assess appropriate and reasonable fees in connection with insuring loans under this section. Any such fees shall be covered into the Historic Preservation Fund, in addition to the amounts covered into such fund pursuant to section 108 and subsection (g) of this section, and shall remain available in such fund until appropriated by the Congress to carry out the purposes of this Act.

(i) Notwithstanding any other provision of law, any loan insured under this section shall be treated as non-federal funds for the purposes of satisfying any requirement of any other provision of law under which Federal funds to be used for any project or activity are conditioned upon the use of non-federal funds by the recipient for payment of any portion of the costs of such project or activity.

(j) Effective after the fiscal year 1981 there are authorized to be appropriated, such sums as may be necessary to cover payments incurred pursuant to subsection (e).

(k) No debt obligation which is made or committed to be made, or which is insured or committed to be insured, by the Secretary under this section shall be eligible for purchase by, or commitment to purchase by, or sale or issuance to, the Federal Financing Bank.

Section 105 (16 U.S.C. 470e)

The beneficiary of assistance under this Act shall keep such records as the Secretary shall prescribe, including records which fully disclose the disposition by the beneficiary of the proceeds of such assistance, the total cost of the project or undertaking in connection with which such assistance is given or used, and the amount and nature of that portion of the cost of the project or undertaking supplied by other sources, and such other records as will facilitate an effective audit.

Section 106 (16 U.S.C. 470f)

The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.

Section 107 (16 U.S.C. 470g)

Nothing in this Act shall be construed to be applicable to the White House and its grounds, the Supreme Court building and its grounds, or the United States Capitol and its related buildings and grounds.

Section 108 (16 U.S.C. 470h)

To carry out the provisions of this Act, there is hereby established the Historic Preservation Fund (hereafter referred to as the "fund") in the Treasury of the United States.

There shall be covered into such fund \$24,400,000 for fiscal year 1977, \$100,000,000 for fiscal year 1978, \$100,000,000 for fiscal year 1979, \$150,000,000 for fiscal year 1980, \$150,000,000 for fiscal year 1981, and \$150,000,000 for each of fiscal years 1982 through 1997, from revenues due and payable to the United States under the Outer Continental Shelf Lands Act (67 Stat. 462, 469) as amended (43 U.S.C. 338) and/or under the Act of June 4, 1920 (41 Stat. 813) as amended (30 U.S.C. 191), notwithstanding any provision of law that such proceeds shall be credited to miscellaneous receipts of the Treasury. Such moneys shall be used only to carry out the purposes of this Act and shall be available for expenditure only when appropriated by the Congress. Any moneys not appropriated shall remain available in the fund until appropriated for said purposes: Provided that appropriations made pursuant to this paragraph may be made without fiscal year limitation.

Section 109 (16 U.S.C. 470h1)

(a) In furtherance of the purposes of sections of this Act, the Secretary may accept the donation of funds which may be expended by him for projects to acquire, restore, preserve, or recover data from any district, building, structure, site, or object which is listed on the National Register of Historic Places established pursuant to section 101 of this Act, so long as the project is owned by a State, any unit of local government, or any nonprofit entity.

(b) In expending said funds, the Secretary shall give due consideration to the following factors: the national significance of the project; its historical value to the community; the imminence of its destruction or loss; and the expressed intentions of the donor. Funds expended under this subsection shall be made available without regard to the matching requirements established by section 102 of this Act, but the recipient of such funds shall be permitted to utilize them to match any grants from the Historic Preservation Fund established by section 108 of this Act.

(c) The Secretary is hereby authorized to transfer unobligated funds previously donated to the Secretary for purposes of the National Park Service, with the consent of the donor, and any funds so transferred shall be used or expended in accordance with the provisions of this Act.

Section 110 (16 U.S.C. 470h2)

(a)(1) The heads of all Federal agencies shall assume responsibility for the preservation of historic properties which are owned or controlled by such agency. Prior to acquiring, constructing, or leasing buildings for purposes of carrying out agency responsibilities, each Federal agency shall use, to the maximum extent feasible, historic properties available to the agency. Each agency shall undertake, consistent with the preservation of such properties and the mission of the agency and the professional standards established pursuant to section 101(g), any preservation, as may be necessary to carry out this section.

(2) Each Federal agency shall establish (unless exempted pursuant to section 214), in consultation with the Secretary, a preservation program for the identification, evaluation, and nomination to the National Register of Historic Places, and protection of historic properties. Such program shall ensure

(A) that historic properties under the jurisdiction or control of the agency, are identified, evaluated, and nominated to the National Register;

(B) that such properties under the jurisdiction or control of the agency as are listed in or may be eligible for the National Register are managed and maintained in a way that considers the preservation of their historic, archaeological, architectural, and cultural values in compliance with section 106 and gives special consideration to the preservation of such values in the case of properties designated as having National significance;

(C) that the preservation of properties not under the jurisdiction or control of the agency, but subject to be potentially affected by agency actions are given full consideration in planning;

(D) that the agency's preservation related activities are carried out in consultation with other Federal, State, and local agencies, Indian tribes, Native Hawaiian organizations carrying out historic preservation planning activities, and with the private sector; and

(E) that the agency's procedures for compliance with section 106

(i) are consistent with regulations issued by the Council pursuant to section 211;

(ii) provide a process for the identification and evaluation of historic properties for listing in the National Register and the development and implementation of agreements, in consultation with State Historic Preservation Officers, local governments, Indian tribes, Native Hawaiian organizations, and the interested public, as appropriate, regarding the means by which adverse effects on such properties will be considered; and

(iii) provide for the disposition of Native American cultural items from Federal or tribal land in a manner consistent with section 3(c) of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3002(c)).

(b) Each Federal agency shall initiate measures to assure that where, as a result of Federal action or assistance carried out by such agency, a historic property is to be substantially altered or demolished, timely steps are taken to make or have made appropriate records, and that such records then be deposited, in accordance with section 101(a), in the Library of Congress or with such other appropriate agency as may be designated by the Secretary, for future use and reference.

(c) The head of each Federal agency shall, unless exempted under section 214, designate a qualified official to be known as the agency's "preservation officer" who shall be responsible for coordinating that agency's activities under this Act. Each Preservation Officer may, in order to be considered qualified, satisfactorily complete an appropriate training program established by the Secretary under section 101(h).

(d) Consistent with the agency's mission and mandates, all Federal agencies shall carry out agency programs and projects (including those under which any Federal assistance is provided or any Federal license, permit, or other approval is required) in accordance with the purposes of this Act and, give consideration to programs and projects which will further the purposes of this Act.

(e) The Secretary shall review and approve the plans of transferees of surplus federally owned historic properties not later than ninety days after his receipt of such plans to ensure that the prehistorical, historical, architectural, or culturally significant values will be preserved or enhanced.

(f) Prior to the approval of any Federal undertaking which may directly and adversely affect any National Historic Landmark, the head of the responsible Federal agency shall, to the maximum extent possible, undertake such planning and actions as may be necessary to minimize harm to such landmark, and shall afford the Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking.

(g) Each Federal agency may include the costs of preservation activities of such agency under this Act as eligible project costs in all undertakings of such agency or assisted by such agency. The eligible project costs may also include amounts paid by a Federal agency to any State to be used in carrying out such preservation responsibilities of the Federal agency under this Act, and reasonable costs may be charged to Federal licensees and permittees as a ANNO condition to the issuance of such license or permit.

(h) The Secretary shall establish an annual preservation awards program under which he may make monetary awards in amounts not to exceed \$1,000 and provide citations for special achievement to officers and employees of Federal, State, and certified local governments in recognition of their outstanding contributions to the preservation of historic resources. Such program may include the issuance of annual awards by the president of the United States to any citizen of the United States recommended for such award by the Secretary.

(i) Nothing in this Act shall be construed to require the preparation of an environmental impact statement where such a statement would not otherwise be required under the National Environmental Policy Act of 1969, and nothing in this Act shall be construed to provide any exemption from any requirement respecting the preparation of such a statement under such Act.

(j) The Secretary shall promulgate regulations under which the requirements of this section may be waived in whole or in part in the event of a major natural disaster or an imminent threat to the national security.

(k) Each Federal agency shall ensure that the agency will not grant a loan, loan guarantee, permit, license, or other assistance to an applicant who, with intent to avoid the requirements of section 106, has intentionally significantly adversely affected a historic property to which the grant would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the agency, after consultation with the Council, determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.

(l) With respect to any undertaking subject to section 106 which adversely affects any property included in or eligible for inclusion in the National Register, and for which a Federal agency has not entered into an agreement with the Council, the head of such agency shall document any decision made pursuant to section 106. The head of such agency may not delegate his or her responsibilities pursuant to such section. Where a section 106 memorandum of agreement has been executed with respect to an undertaking, such memorandum shall govern the undertaking and all of its parts.

Section 111 (16 U.S.C. 470h3)

(a) Notwithstanding any other provision of law, any Federal agency, after consultation with the Council, shall, to the extent practicable, establish and implement alternatives for historic properties, including adaptive use, that are not needed for current or projected agency purposes, and may lease a historic property owned by the agency to any person or organization, or exchange any property owned by the agency with comparable historic property, if the agency head determines that the lease or exchange will adequately ensure the preservation of the historic property.

(b) The proceeds of any lease under subsection (a) may, notwithstanding any other provision of law, be retained by the agency entering into such lease and used to defray the costs of administration, maintenance, repair, and related expenses incurred by the agency with respect to such property or other properties which are on the National Register which are owned by, or are under the jurisdiction or control of, such agency. Any surplus proceeds from such leases shall be deposited into the Treasury of the United States at the end of the second fiscal year following the fiscal year in which such proceeds were received.

(c) The head of any Federal agency having responsibility for the management of any historic property may, after consultation with the Advisory Council on Historic Preservation, enter into contracts for the management of such property. Any such contract shall contain such terms and conditions as the head of such agency deems necessary or appropriate to protect the interests of the United States and insure adequate preservation of historic property.

Section 112

(a) **In general.** Each Federal agency that is responsible for the protection of historic resources, including archaeological resources pursuant to this Act or any other law shall ensure each of the following

(1)(A) All actions taken by employees or contractors of such agency shall meet professional standards under regulations developed by the Secretary in consultation with the Council, other affected agencies, and the appropriate professional societies of the disciplines involved, specifically archaeology, architecture, conservation, history, landscape architecture, and planning.

(B) Agency personnel or contractors responsible for historic resources shall meet qualification standards established by the Office of Personnel Management in consultation with the Secretary and appropriate professional societies of the disciplines involved. The Office of Personnel Management shall revise qualification standards within 2 years after the date of enactment of this Act for the disciplines involved, specifically archaeology, architecture, conservation, curation, history, landscape architecture, and planning. Such standards shall consider the particular skills and expertise needed for the preservation of historic resources and shall be equivalent

requirements for the disciplines involved.

(2) Records and other data, including data produced by historical research and archaeological surveys and excavations are permanently maintained in appropriate data bases and made available to potential users pursuant to such regulations as the Secretary shall promulgate.

(b) Guidelines. In order to promote the preservation of historic resources on properties eligible for listing in the National register, the Secretary shall, in consultation with the Council, promulgate guidelines to ensure that Federal, State, and tribal historic preservation programs subject to this Act include plans to

(1) provide information to the owners of properties containing historic (including architectural, curatorial, and archaeological) resources with demonstrated or likely research significance, about the need for protection of such resources, and the available means of protection;

(2) encourage owners to preserve such resources intact and in place and offer the owners of such resources information on the tax and grant assistance available for the donation of the resources or of a preservation easement of the resources;

(3) encourage the protection of Native American cultural items (within the meaning of section 2(3) and (9) of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001 (3) and (9)) and of properties of religious or cultural importance to Indian tribes, Native Hawaiians, or other Native American groups; and

(4) encourage owners who are undertaking archaeological excavations to

(A) conduct excavations and analyses that meet standards for federally sponsored excavations established by the Secretary;

(B) donate or lend artifacts of research significance to an appropriate research institution;

(C) allow access to artifacts for research purposes; and

(D) prior to excavating or disposing of a Native American cultural item in which an Indian tribe or Native Hawaiian organization may have an interest under section 3(a)(2)(B) or (C) of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3002(a)(2)(B) and (C)), given notice to and consult with such Indian tribe or Native Hawaiian organization.

Section 113

(a) Study. In order to help control illegal interstate and international traffic in antiquities, including archaeological, curatorial, and architectural objects, and historical documents of all kinds, the Secretary shall study and report on the suitability and feasibility of

alternatives for controlling illegal interstate and international traffic in antiquities.

(b) Consultation. In conducting the study described in subsection (a) the Secretary shall consult with the Council and other Federal agencies that conduct, cause to be conducted, or permit archaeological surveys or excavations or that have responsibilities for other kinds of antiquities and with State Historic Preservation Officers, archaeological, architectural, historical, conservation, and curatorial organizations, Indian tribes, Native Hawaiian organizations, and other Native American organizations, international organizations and other interested persons.

(c) Report. Not later than 18 months after the date of enactment of this section, the Secretary shall submit to Congress a report detailing the Secretary's findings and recommendations from the study described in subsection (a).

(d) Authorization. There are authorized to be appropriated not more than \$500,000 for the study described in subsection (a), such sums to remain available until expended.

TITLE II

Section 201 (*16 U.S.C. 470i*)

(a) There is established as an independent agency of the United States Government an Advisory Council on Historic Preservation which shall be composed of the following members:

- (1)** a Chairman appointed by the President selected from the general public;
- (2)** the Secretary of the Interior;
- (3)** the Architect of the Capitol;
- (4)** the Secretary of Agriculture and the heads of four other agencies of the United States (other than the Department of the Interior), the activities of which affect historic preservation, appointed by the President;
- (5)** one Governor appointed by the President;
- (6)** one mayor appointed by the President;
- (7)** the President of the National Conference of State Historic Preservation Officers;
- (8)** the Chairman of the National Trust for Historic Preservation;
- (9)** four experts in the field of historic preservation appointed by the President from the disciplines of architecture, history, archaeology, and other appropriate disciplines;

(10) three at large members from the general public, appointed by the President; and

(11) one member of an Indian tribe or Native Hawaiian organization who represents the interests of the tribe or organization of which he or she is a member, appointed by the President.

(b) Each member of the Council specified in paragraphs (2) through (8) (other than (5) and (6)) may designate another officer of his department, agency, or organization to serve on the Council in his stead, except that, in the case of paragraphs (2) and (4), no such officer other than an Assistant Secretary or an officer having major department wide or agency wide responsibilities may be so designated.

(c) Each member of the Council appointed under paragraph (1), and under paragraphs (9) and (10) of subsection (a) shall serve for a term of four years from the expiration of his predecessor's term; except that the members first appointed under that paragraph shall serve for terms of one to four years, as designated by the President at the time of appointment, in such manner as to ensure that the terms of not more than two of them will expire in any one year. The members appointed under paragraphs (5) and (6) shall serve for the term of their elected office but not in excess of four years. An appointed member whose term has expired shall serve until that member's successor has been appointed.

(d) A vacancy in the Council shall not affect its powers, but shall be filled not later than sixty days after such vacancy commences, in the same manner as the original appointment (and for the balance of any unexpired terms). The members of the Advisory Council on Historic Preservation appointed by the President under this Act as in effect on the day before the enactment of the National Historic Preservation Act Amendments of 1980 shall remain in office until all members of the Council, as specified in this section, have been appointed. The members first appointed under this section shall be appointed not later than one hundred and eighty days after the enactment of the National Historic Preservation Act Amendments of 1980.

(e) The President shall designate a Vice Chairman, from the members appointed under paragraphs (5), (6), (9), or (10). The Vice Chairman may act in place of the Chairman during the absence or disability of the Chairman or when the office is vacant.

(f) Nine members of the Council shall constitute a quorum.

Section 202 (16 U.S.C. 470j)

(a) The Council shall

(1) advise the President and the Congress on matters relating to historic preservation, recommend measures to coordinate activities of Federal, State, and local agencies and private institutions and individuals relating to historic preservation; and advise on the dissemination of information pertaining to such activities;

(2) encourage, in cooperation with the National Trust for Historic Preservation and appropriate private agencies, public interest and participation in historic preservation;

(3) recommend the conduct of studies in such areas as the adequacy of legislative and administrative statutes and regulations pertaining to historic preservation activities of State and local governments and the effects of tax policies at all levels of government on historic preservation;

(4) advise as to guidelines for the assistance of State and local governments in drafting legislation relating to historic preservation;

(5) encourage, in cooperation with appropriate public and private agencies and institutions, training and education in the field of historic preservation;

(6) review the policies and programs of Federal agencies and recommend to such agencies methods to improve the effectiveness, coordination, and consistency of those policies and programs with the policies and programs carried out under this Act; and,

(7) inform and educate Federal agencies, State and local governments, Indian tribes, other nations and international organizations and private groups and individuals as to the Council's authorized activities.

(b) The Council shall submit annually a comprehensive report of its activities and the results of its studies to the President and the Congress and shall from time to time submit such additional and special reports as it deems advisable. Each report shall propose such legislative enactments and other actions as, in the judgment of the Council, are necessary and appropriate to carry out its recommendations and shall provide the Council's assessment of current and emerging problems in the field of historic preservation and an evaluation of the effectiveness of the programs of Federal agencies, State and local governments, and the private sector in carrying out the purposes of this Act.

Section 203 (16 U.S.C. 470k)

The Council is authorized to secure directly from any department, bureau, agency, board, commission, office, independent establishment or instrumentality of the executive branch of the Federal Government information, suggestions, estimates, and statistics for the purpose of this title; and each such department or instrumentality is authorized to furnish such information, suggestions, estimates, and statistics to the extent permitted by law and within available funds.

Section 204 (16 U.S.C. 470l)

The members of the Council specified in paragraphs (2), (3), and (4) of section 201(a) shall serve without additional compensation. The other members of the Council shall receive \$100 per diem when engaged in the performances of the duties of the Council. All members of the Council shall receive reimbursement for necessary traveling and subsistence expenses incurred by them in the performance of the duties of the Council.

Section 205 (16 U.S.C. 470m)

(a) There shall be an Executive Director of the Council who shall be appointed in the competitive service by the Chairman with the concurrence of the Council. The Executive Director shall report directly to the Council and perform such functions and duties as the Council may prescribe.

(b) The Council shall have a General Counsel, who shall be appointed by the Executive Director. The General Counsel shall report directly to the Executive Director and serve as the Council's legal advisor. The Executive Director shall appoint such other attorneys as may be necessary to assist the General Counsel, represent the Council in courts of law whenever appropriate, including enforcement of agreements with Federal agencies to which the Council is a party, assist the Department of Justice in handling litigation concerning the Council in courts of law, and perform such other legal duties and functions as the Executive Director and the Council may direct.

(c) The Executive Director of the Council may appoint and fix the compensation of such officers and employees in the competitive service as are necessary to perform the functions of the Council at rates not to exceed that now or hereafter prescribed for the highest rate for grade 15 of the General Schedule under section 5332 of Title 5, United States Code: Provided, however, That the Executive Director, with the concurrence of the Chairman, may appoint and fix the compensation of not to exceed five employees in the competitive service at rates not to exceed that now or hereafter prescribed for the highest rate of grade 17 of the General Schedule under section 5332 of Title 5, United States Code.

(d) The Executive Director shall have power to appoint and fix the compensation of such additional personnel as may be necessary to carry out its duties, without regard to the provisions of the civil service laws and the Classification Act of 1949.

(e) The Executive Director of the Council is authorized to procure expert and consultant services in accordance with the provisions of section 3109 of Title 5, United States Code.

(f) Financial and administrative services (including those related to budgeting, accounting, financial reporting, personnel and procurement) shall be provided the Council by the Department of the Interior, for which payments shall be made in advance, or by reimbursement, from funds of the Council in such amounts as may be agreed upon the Chairman of the Council and the Secretary of the Interior; Provided, That the regulations of the Department of the Interior for the collection of indebtedness of personnel resulting from erroneous payments (5 U.S.C. 46(e)) shall apply to the

collection of erroneous payments made to or on behalf of a Council employee, and regulations of said Secretary for the administrative control of funds (31 U.S.C. 665(g)) shall apply to appropriations of the Council: And provided further, That the Council shall not be required to prescribe such regulations.

(g) The members of the Council specified in paragraphs (2) through (4) of Section 201(a) shall provide the Council, with or without reimbursement as may be agreed upon by the Chairman and the members, with such funds, personnel, facilities, and services under their jurisdiction and control as may be needed by the Council to carry out its duties, to the extent that such funds, personnel, facilities, and services are requested by the Council and are otherwise available for that purpose. To the extent of available appropriations, the Council may obtain, by purchase, rental, donation, or otherwise, such additional property, facilities, and services as may be needed to carry out its duties and may also receive donations of moneys for such purpose, and the Executive Director is authorized, in his discretion, to accept, hold, use, expend, and administer the same for the purposes of this Act.

Section 206 (16 U.S.C. 470n)

(a) The participation of the United States as a member of the International Centre for the Study of the Preservation and Restoration of Cultural Property is hereby authorized.

(b) The Council shall recommend to the Secretary of State, after consultation with the Smithsonian Institution and other public and private organizations concerned with the technical problems of preservation, the members of the official delegation which will participate in the activities of the Centre on behalf of the United States. The Secretary of State shall appoint the members of the official delegation from the persons recommended to him by the Council.

(c) For the purposes of this section there is authorized to be appropriated an amount equal to the assessment for United States membership in the Centre for fiscal years 1979, 1980, 1981, and 1982: Provided, that no appropriation is authorized and no payment shall be made to the Centre in excess of 25 per centum of the total annual assessment of such organization. Authorization for payment of such assessment shall begin in fiscal year 1981, but shall include earlier costs.

Section 207 (16 U.S.C. 470o)

So much of the personnel, property, records, and unexpended balances of appropriations, allocations, and other funds employed, held, used, programmed, or available or to be made available by the Department of the Interior in connection with the functions of the Council, as the Director of the Office of Management and Budget shall determine, shall be transferred from the Department to the Council within 60 days of the effective date of this Act.

Section 208 (16 U.S.C. 470p)

Any employee in the competitive service of the United States transferred to the Council under the provisions of this section shall retain all rights, benefits, and privileges pertaining thereto held prior to such transfer.

Section 209 (16 U.S.C. 470q)

The Council is exempt from the provisions of the Federal Advisory Committee Act (86 Stat. 770) , and the provisions of the Administrative Procedure Act (80 Stat. 381) shall govern the operations of the Council.

Section 210 (16 U.S.C. 470r)

No officer or agency of the United States shall have any authority to require the Council to submit its legislative recommendations, or testimony, or comments on legislation to any officer or agency of the United States for approval, comments, or review, prior to the submission of such recommendations, testimony, or comments to the Congress. In instances in which the Council voluntarily seeks to obtain the comments or review of any officer or agency of the United States, the Council shall include a description of such actions in its legislative recommendations, testimony, or comments on legislation which it transmits to the Congress.

Section 211 (16 U.S.C. 470s)

The Council is authorized to promulgate such rules and regulations as it deems necessary to govern the implementation of section 106 of this Act in its entirety. The Council shall, by regulation, establish such procedures as may be necessary to provide for participation by local governments in proceedings and other actions taken by the Council with respect to undertakings referred to in section 106 which affect such local governments.

Section 212 (16 U.S.C. 470t)

(a) The Council shall submit its budget annually as a related agency of the Department of the Interior. There are authorized to be appropriated for purposes of this title not to exceed \$5,000,000 for each of the fiscal years 1993 through 1996.

(b) Whenever the Council submits any budget estimate or request to the President or the Office of Management and Budget, it shall concurrently transmit copies of that estimate or request to the House and Senate Appropriations Committees and the House Committee on Interior and Insular Affairs and the Senate committee on Energy and Natural Resources.

Section 213 (16 U.S.C. 470u)

To assist the Council in discharging its responsibilities under this Act, the Secretary at the request of the Chairman, shall provide a report to the Council detailing the significance of any historic property, describing the effects of any proposed undertaking on the affected

property, and recommending measures to avoid, minimize, or mitigate adverse effects.

Section 214 (16 U.S.C. 470v)

The Council, with the concurrence of the Secretary, shall promulgate regulations or guidelines, as appropriate, under which Federal programs or undertakings may be exempted from any or all of the requirements of this Act when such exemption is determined to be consistent with the purposes of this Act, taking into consideration the magnitude of the exempted undertaking or program and the likelihood of impairment of historic properties.

TITLE III

Section 301 (16 U.S.C. 470w)

As used in this Act, the term

(1) "**Agency**" means agency as such term is defined in section 551 of Title 5, United States Code.

(2) "**State**" means any State of the United States, the District of Columbia, the commonwealth of Puerto Rico, Guam, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territory of the Pacific Islands, the Republic of the Marshall Islands, the Federated States of Micronesia, and, upon termination of the Trusteeship Agreement for the Trust Territory of the Pacific Islands, the Republic of Palau.

(3) "**Local government**" means a city, county, parish, township, municipality, or borough, or any other general purpose political subdivision of any State.

(4) "**Indian tribe**" or "**tribe**" means an Indian tribe, band, nation, or other organized group or community, including a Native village, Regional Corporation or Village Corporation, as those terms are defined in section 3 of the Alaska Native Claims Settlement Act (43 U.S.C. 1602) , which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

(5) "**Historic property**" or "**historic resource**" means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register, including artifacts, records, and material remains related to such a property or resource.

(6) "**National Register**" or "**Register**" means the National Register of Historic Places established under section 101.

(7) "**Undertaking**" means a project, activity, or program funded in whole or in part

under the direct or indirect jurisdiction of a Federal agency, including

(A) those carried out by or on behalf of the agency;

(B) those carried out with Federal financial assistance;

(C) those requiring a Federal permit, license, or approval; and

(D) those subject to State or local regulation administered pursuant to a delegation or approval by a Federal agency.

(8) "**Preservation**" or "**historic preservation**" includes identification, evaluation, recordation, documentation, curation, acquisition, protection, management, rehabilitation, restoration, stabilization, maintenance, research, interpretation, conservation, and education and training regarding the foregoing activities or any combination of the foregoing activities.

(9) "**Cultural park**" means a definable area which is distinguished by historic resources and land related to such resources and which constitutes an interpretive, educational, and recreational resource for the public at large.

(10) "**Historic conservation district**" means an area which contains

(A) historic properties,

(B) buildings having similar or related architectural characteristics,

(C) cultural cohesiveness, or

(D) any combination of the foregoing.

(11) "**Secretary**" means the Secretary of the Interior acting through the Director of the National Park Service except where otherwise specified.

(12) "**State Historic Preservation Review Board**" means a board, council, commission, or other similar collegial body established as provided in section 101(b)(1)(B)

(A) the members of which are appointed by the State Historic Preservation Officer (unless otherwise provided for by State law)

(B) a majority of the members of which are professionals qualified in the following and related disciplines: history, prehistoric and historic archeology, architectural history, architecture, folklore, cultural anthropology, curation, conservation, and landscape architecture; and

(C) which has the authority to

- (i) review National Register nominations and appeals from nominations;
- (ii) review appropriate documentation submitted in conjunction with the Historic Preservation Fund;
- (iii) provide general advice and guidance to the State Historic Preservation Officer, and
- (iv) perform such other duties as may be appropriate.

(13) "Historic preservation review commission" means a board, council, commission, or other similar collegial body which is established by State or local legislation as provided in section 101(c)(1)(B), and the members of which are appointed, unless otherwise provided by State or local legislation, by the chief elected official of the jurisdiction concerned from among

(A) professionals in the disciplines of architecture, history, architectural history, planning, prehistoric and historic archaeology, folklore, cultural anthropology, curation, conservation, and landscape architecture or related disciplines, to the extent such professionals are available in the community concerned, and

(B) such other persons as have demonstrated special interest, experience, or knowledge in history, architecture, or related disciplines and as will provide for an adequate and qualified commission.

(14) "Tribal lands" means

(A) all lands within the exterior boundaries of any Indian reservation; and

(B) all dependent Indian communities.

(15) "Certified local government" means a local government whose local historic preservation program has been certified pursuant to section 101(c).

(16) "Council" means the Advisory Council on Historic Preservation established by section 201.

(17) "Native Hawaiian" means any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaii.

(18) "Native Hawaiian organization" means any organization which

(A) serves and represents the interests of Native Hawaiians;

(B) has as a primary and stated purpose the provision of services to Native Hawaiians; and

(C) has demonstrated expertise in aspects of historic preservation that are culturally significant to Native Hawaiians.

The term includes, but is not limited to, the Office of Hawaiian Affairs of the State of Hawaii and Hui Malama I Na Kapuna O Hawai'i Nei, an organization incorporated under the laws of the State of Hawaii.

Section 302 (16 U.S.C. 470w1)

Where appropriate, each Federal agency is authorized to expend funds appropriated for its authorized programs for the purposes of activities carried out pursuant to this Act, except to the extent appropriations legislation expressly provides otherwise.

Section 303 (16 U.S.C. 470w2)

(a) The Secretary is authorized to accept donations and bequests of money and personal property for the purposes of this Act and shall hold, use, expend, and administer the same for such purposes.

(b) The Secretary is authorized to accept gifts or donations of less than fee interests in any historic property where the acceptance of such interests will facilitate the conservation or preservation of such properties. Nothing in this section or in any provision of this Act shall be construed to affect or impair any other authority of the Secretary under other provision of law to accept or acquire any property for conservation or preservation or for any other purpose.

Section 304 (16 U.S.C. 470w3)

(a) **Authority to withhold from disclosure.** The head of a Federal agency or other public official receiving grant assistance pursuant to this Act, after consultation with the Secretary, shall withhold from disclosure to the public, information about the location, character, or ownership of a historic resource if the Secretary and the agency determine that disclosure may

- (1) cause a significant invasion of privacy;
- (2) risk harm to the historic resource; or
- (3) impede the use of a traditional religious site by practitioners.

(b) **Access determination.** When the head of a Federal agency or other public official has determined that information should be withheld from the public pursuant to subsection (a), the Secretary, in consultation with such Federal agency head or official, shall determine who may have access to the information for the purpose of carrying out this Act.

(c) Consultation with Council. When the information in question has been developed in the course of an agency's compliance with Section 106 or 110(f), the Secretary shall consult with the Council in reaching determinations under subsections (a) and (b).

Section 305 (16 U.S.C. 470w4)

In any civil action brought in any United States district court by any interested person to enforce the provisions of this Act, if such person substantially prevails in such action, the court may award attorneys' fees, expert witness fees, and other costs of participating in such action, as the court deems reasonable.

Section 306 (16 U.S.C. 470w5)

(a) In order to provide a national center to commemorate and encourage the building arts and to preserve and maintain a nationally significant building which exemplifies the great achievements of the building arts in the United States, the Secretary and the Administrator of the General Services Administration are authorized and directed to enter into a cooperative agreement with the Committee for a National Museum of the Building Arts, Incorporated, a nonprofit corporation organized and existing under the laws of the District of Columbia, or its successor, for the operation of a National Museum for the Building Arts in the Federal Building located in the block bounded by Fourth Street, Fifth Street, F Street, and G Street, Northwest in Washington, District of Columbia. Such museum shall

(1) collect and disseminate information concerning the building arts, including the establishment of a national reference center for current and historic documents, publications, and research relating to the building arts;

(2) foster educational programs relating to the history, practice and contribution to society of the building arts, including promotion of imaginative educational approaches to enhance understanding and appreciation of all facets of the building arts;

(3) publicly display temporary and permanent exhibits illustrating, interpreting and demonstrating the building arts;

(4) sponsor or conduct research and study into the history of the building arts and their role in shaping our civilization; and

(5) encourage contributions to the building arts.

(b) The cooperative agreement referred to in subsection (a) shall include provisions which

(1) make the site available to the Committee referred to in subsection (a) without charge;

(2) provide, subject to available appropriations, such maintenance, security, information, janitorial and other services as may be necessary to assure the preservation and operation of the site; and

(3) prescribe reasonable terms and conditions by which the Committee can fulfill its responsibilities under this Act.

(c) The Secretary is authorized and directed to provide matching grants in aid to the Committee referred to in subsection (a) for its programs related to historic preservation. The Committee shall match such grants in aid in a manner and with such funds and services as shall be satisfactory to the Secretary, except that no more than \$500,000 may be provided to the Committee in any one fiscal year.

(d) The renovation of the site shall be carried out by the Administrator with the advice of the Secretary. Such renovation shall, as far as practicable

(1) be commenced immediately,

(2) preserve, enhance, and restore the distinctive and historically authentic architectural character of the site consistent with the needs of a national museum of the building arts and other compatible use, and

(3) retain the availability of the central court of the building, or portions thereof, for appropriate public activities.

(e) The Committee shall submit an annual report to the Secretary and the Administrator concerning its activities under this section and shall provide the Secretary and the Administrator with such other information as the Secretary may, from time to time, deem necessary or advisable.

(f) For purposes of this section, the term "building arts" includes, but shall not be limited to, all practical and scholarly aspects of prehistoric, historic, and contemporary architecture, archeology, construction, building technology and skills, landscape architecture, preservation and conservation, building and construction, engineering, urban and community design and renewal, city and regional planning, and related professions, skills, trades and crafts.

Section 307 (16 U.S.C. 470w6)

(a) At least thirty days prior to publishing in the Federal Register any proposed regulation required by this Act, the Secretary shall transmit a copy of the regulation to the Committee on Interior and Insular Affairs of the House of Representatives and the Committee on Energy and Natural Resources of the Senate. The Secretary also shall transmit to such committees a copy of any final regulation prior to its publication in the Federal Register. Except as provided in subsection (b) of this section, no final regulation of the Secretary shall become effective prior to the expiration of thirty calendar days after

it is published in the Federal Register during which either or both Houses of Congress are in session.

(b) In the case of an emergency, a final regulation of the Secretary may become effective without regard to the last sentence of subsection (a) if the Secretary notified in writing the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate setting forth the reasons why it is necessary to make the regulation effective prior to the expiration of the thirtyday period.

(c) Except as provided in subsection (b), the regulation shall not become effective if, within ninety calendar days of continuous session of Congress after the date of promulgation, both Houses of Congress adopt a concurrent resolution, the matter after the resolving clause of which is as follows: "That Congress disapproves the regulation promulgated by the Secretary dealing with the matter of_____, which regulation was transmitted to Congress on_____, " the blank spaces therein being appropriately filled.

(d) If at the end of sixty calendar days of continuous session of Congress after the date of promulgation of a regulation, no committee of either House of Congress has reported or been discharged from further consideration of a concurrent resolution disapproving the regulation, and neither House has adopted such a resolution, the regulation may go into effect immediately. If, within such sixty calendar days, such a committee has reported or been discharged from further consideration of such a resolution, the regulation may go into effect not sooner than ninety calendar days of continuous session of Congress after its promulgation unless disapproved as provided for.

(e) For the purposes of this section

(1) continuity of session is broken only by an adjournment sine die; and

(2) the days on which either House is not in session because of an adjournment of more than three days to a day certain are excluded in the computation of sixty and ninety calendar days of continuous session of Congress.

(f) Congressional inaction on or rejection of a resolution of disapproval shall not be deemed an expression of approval of such regulation.

TITLE IV

Section 401

The Congress finds and declares that, given the complexity of technical problems

encountered in preserving historic properties and the lack of adequate distribution of technical information to preserve such properties, a national initiative to coordinate and promote research, distribute information, and provide training about preservation skills and technologies would be beneficial.

Section 402

For the purposes of this title

(1) The term "Board" means the National Preservation Technology and Training Board established pursuant to section 404.

(2) The term "Center" means the National Center for Preservation Technology and Training established pursuant to section 403.

(3) The term "Secretary" means the Secretary of the Interior.

Section 403

(a) **Establishment.** There is hereby established within the Department of the Interior a National Center for Preservation Technology and Training. The Center shall be located at Northwestern State University of Louisiana in Natchitoches, Louisiana.

(b) **Purposes.** The purposes of the Center shall be to

(1) develop and distribute preservation and conservation skills and technologies for the identification, evaluation, conservation, and interpretation of prehistoric and historic resources;

(2) develop and facilitate training for Federal, State and local resource preservation professionals, cultural resource managers, maintenance personnel, and others working in the preservation field;

(3) take steps to apply preservation technology benefits from ongoing research by other agencies and institutions;

(4) facilitate the transfer of preservation technology among Federal agencies, State and local governments, universities, international organizations, and the private sector; and

(5) cooperate with related international organizations including, but not limited to the International Council on Monuments and Sites, the International center for the Study of Preservation and Restoration of Cultural Property, and the International Council on Museums.

(c) **Programs.** Such purposes shall be carried out through research, professional training, technical assistance, and programs for public awareness and through a program of grants

established under section 405.

(d) Executive Director. The Center shall be headed by an Executive Director with demonstrated expertise in historic preservation appointed by the Secretary with advice of the Board.

(e) Assistance from Secretary. The Secretary shall provide the Center assistance in obtaining such personnel, equipment, and facilities as may be needed by the Center to carry out its activities.

Section 404

(a) Establishment. There is established a Preservation Technology and Training Board.

(b) Duties. The Board shall

(1) provide leadership, policy advice, and professional oversight to the Center;

(2) advise the Secretary on priorities and the allocation of grants among the activities of the Center; and

(3) submit an annual report to the President and the Congress.

(c) Membership. The Board shall be comprised of

(1) The Secretary, or the Secretary's designee;

(2) 6 members appointed by the Secretary who shall represent appropriate Federal, State, and local agencies, State and local historic preservation commissions, and other public and international organizations, and

(3) 6 members appointed by the Secretary on the basis of outstanding professional qualifications who represent major organizations in the fields of archeology, architecture, conservation, curation, engineering, history, historic preservation, landscape architecture, planning, or preservation education.

Section 405

(a) In general. The Secretary, in consultation with the Board, shall provide preservation technology and training grants to eligible applicants with a demonstrated institutional capability and commitment to the purposes of the Center, in order to ensure an effective and efficient system of research, information distribution and skills training in all the related historic preservation fields.

(b) Grant requirements.

(1) Grants provided under this section shall be allocated in such a fashion to reflect the diversity of the historic preservation fields and shall be geographically distributed.

(2) No grant recipient may receive more than 10 percent of the grants allocated under this section within any year.

(3) The total administrative costs, direct and indirect, charged for carrying out grants under this section may not exceed 25 percent of the aggregate costs.

(c) **Eligible applicants.** Eligible applicants may include Federal and nonFederal laboratories, accredited museums, universities, nonprofit organizations; offices, units, and Cooperative Park Study Units of the National Park System, State Historic Preservation Offices, tribal preservation offices, and Native Hawaiian organizations.

(d) **Standards.** All such grants shall be awarded in accordance with accepted professional standards and methods, including peer review of projects.

(e) **Authorization of appropriations.** There is authorized to be appropriated to carry out this section such sums as may be necessary.

Section 406

(a) **Acceptance of grants and transfers.** The Center may accept

(1) grants and donations from private individuals, groups, organizations, corporations, foundations, and other entities; and (2) transfers of funds from other Federal agencies.

(b) **Contracts and cooperative agreements.** Subject to appropriations, the Center may enter into contracts and cooperative agreements with Federal, State, local, and tribal governments, Native Hawaiian organizations, educational institutions, and other public entities to carry out the Center's responsibilities under this title.

(c) **Authorization of appropriations.** There are authorized to be appropriated such sums as may be necessary for the establishment, operation, and maintenance of the Center. Funds for the Center shall be in addition to existing National Park Service programs, centers, and offices.

Section 407

In order to improve the use of existing National Park Service resources, the Secretary shall fully utilize and further develop the National Park Service preservation (including conservation) centers and regional offices. The Secretary shall improve the coordination of such centers and offices within the National Park Service, and shall, where appropriate, coordinate their activities with the Center and with other appropriate parties.

APPENDIX I

National Historic Preservation Act Amendments of 1980, Public Law 96515, December 12, 1980, 94 Stat. 3000

This appendix contains related legislative provisions enacted in the National Historic Preservation Act Amendments of 1980 but that are not part of the National Historic Preservation Act.

Section 208 (*16 U.S.C. 469c2*)

Notwithstanding section 7(a) of the Act of June 27, 1960 (16 U.S.C. 469c) or any other provision of law to the contrary

(1) identification, surveys, and evaluation carried out with respect to historic properties within project areas may be treated for purposes of any law or rule of law as planning costs of the project and not as costs of mitigation;

(2) reasonable costs for identification, surveys, evaluation, and data recovery carried out with respect to historic properties within project areas may be charged to Federal licensees and permittees as a condition to the issuance of such license or permit; and

(3) Federal agencies, with the concurrence of the Secretary and after notification of the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, are authorized to waive, in appropriate cases, the 1 per centum limitation contained in section 7(a) of such Act.

Section 401 (*16 U.S.C. 470a1*)

(a) The Secretary of the Interior shall direct and coordinate United States participation in the Convention Concerning the Protection of the World Cultural and Natural Heritage, approved by the Senate on October 26, 1973, in cooperation with the Secretary of State, the Smithsonian Institution, and the Advisory Council on Historic Preservation. Whenever possible, expenditures incurred in carrying out activities in cooperation with other nations and international organizations shall be paid for in such excess currency of the country or area where the expense is incurred as may be available to the United States.

(b) The Secretary of the Interior shall periodically nominate properties he determines are of international significance to the World Heritage Committee on behalf of the United States. No property may be so nominated unless it has previously been determined to be of national significance. Each such nomination shall include evidence of such legal protections as may be necessary to ensure preservation of the property and its environment (including restrictive covenants, easements, or other forms of protection). Before making any such nomination, the Secretary shall notify the Committee on Interior and Insular Affairs of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate.

(c) No non-federal property may be nominated by the Secretary of the Interior to the World Heritage Committee for inclusion on the World Heritage List unless the owner of the property concurs in writing to such nomination.

Section 402 (16 U.S.C. 470a2)

Prior to the approval of any Federal undertaking outside the United States which may directly and adversely affect a property which is on the World Heritage List or on the applicable country's equivalent of the National Register, the head of a Federal agency having direct or indirect jurisdiction over such undertaking shall take into account the effect of the undertaking on such property for purposes of avoiding or mitigating any adverse effects.

Section 502 (16 U.S.C. 470a note)

The Secretary, in cooperation with the American Folklife Center of the Library of Congress shall, within two years after the date of the enactment of this act, submit a report to the President and the Congress on preserving and conserving the intangible elements of our cultural heritage such as arts, skills, folklife, and folkways. The report shall take into account the view of other public and private organizations, as appropriate. This report shall include recommendations for legislative and administrative actions by the Federal Government in order to preserve, conserve, and encourage the continuation of the diverse traditional prehistoric, historic, ethnic, and folk cultural traditions that underlie and are a living expression of our American heritage.

Section 503 (16 U.S.C. 470j note)

Council's report to the President and Congress: tax laws

The Advisory Council on Historic Preservation, in cooperation with the Secretary and the Secretary of the Treasury, shall submit a report to the President and the Congress on Federal tax laws relating to historic preservation or affecting in any manner historic preservation. Such report shall include recommendations respecting amendments to such laws which would further the purposes of this Act. Such report shall be submitted within one year after the date of enactment of this Act.

Section 504 (16 U.S.C. 470h note)

The Secretary shall submit a report directly to the President and the Congress on or before June 1, 1986, reviewing the operation of the Historic Preservation Fund and the national historic preservation program since the enactment of this Act and recommending appropriate funding levels, the time period for the reauthorization for appropriations from the fund, and other appropriate legislative action to be undertaken upon the expiration of the current fund authorization.

Section 505 (40 U.S.C. 874 note)

The Pennsylvania Avenue Development Corporation shall review the development plan for those parts of the development area which are not under development or committed for development as of the date of the enactment of this Act, to identify means by which the historic values of such parts of the development area may be preserved and enhanced to the maximum extent feasible. The foregoing review shall not be limited by the applicable provisions of the development plan in effect at the time of the review; nor shall the review require any actions by the Corporation during the course of the review or during its consideration by the Congress. Within one year of the date of this act the Corporation shall submit to the appropriate committees of Congress a report containing the findings of the review required under this section, together with the Corporation's recommendations for any legislative measures or funding necessary to carry out the purposes of this section. The report shall also include a description of those activities which the Corporation proposes to undertake to carry out the purposes of this section and the financial implications of carrying out those activities.

Section 506 (*16 U.S.C. 470a note*)

The Secretary shall undertake a comprehensive study and formulate recommendations for a coordinated system of cultural parks and historic conservation districts that provide for the preservation, interpretation, development, and use by public and private entities of the prehistoric, historic, architectural, cultural, and recreational resources found in definable urban areas throughout the Nation. The study shall propose alternatives concerning the management and funding of such system by public and private entities and by various levels of government. The Secretary shall submit a report of his study and recommendations to the President and the Congress within two years after the enactment of this Act.

Section 507 (*16 U.S.C. 470a note*)

The Secretary, in cooperation with the Secretary of the Treasury, the Administrator of the United States Fire Administration, and the Administrator of the Federal Insurance Administration, shall submit a report to the President and the Congress on fire in historic properties. Such report shall include a review of Federal laws to determine any relationship between these laws and arson or fire by "suspicious origin", and to make recommendations respecting amendments to such laws should a correlation be found to exist. Such report shall include the feasibility and necessity of establishing or developing protective measures at the Federal, State, or local level for the prevention, detection, and control of arson or fire by "suspicious origin" in historic properties. Such report shall also include recommendations regarding the Federal role in assisting the States and local governments with protecting historic properties from damage by fire. Such report shall be submitted within eighteen months after the date of enactment of this Act.

APPENDIX II

National Historic Preservation Act Amendments of 1992, Public Law 102575, October 30, 1992, 106 Stat. 4753

This appendix contains related legislative provisions enacted in the National Historic Preservation Act Amendments of 1992 but that are not part of the National Historic Preservation Act.

Section 4021 (16 U.S.C. 470a note)

The Secretary of the Interior, in consultation with the Advisory Council, shall seek to ensure that historic properties preserved under the National Historic Preservation Act fully reflect the historical experience of this nation.

Section 4023 (16 U.S.C. 470a note)

Section 6 of the Act entitled "An Act to provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes" (16 U.S.C. 461467) is amended to read as follows:

"Sec. 6. Requirement for specific authorization for projects under the Historic Sites, Buildings, and Antiquities Act.

"(a) In general. Except as provided in subsection (b), notwithstanding any other provision of law, no funds appropriated or otherwise made available to the Secretary of the Interior to carry out section 2(e) or 2(f) may be obligated or expended after the date of enactment of this section

"(1) unless the appropriation of such funds has been specifically authorized by law enacted on or after the date of enactment of this section; or

"(2) in excess of the amount prescribed by law enacted on or after such date.

"(b) Savings provision. Nothing in this section shall prohibit or limit the expenditure of or obligation of any funds appropriated prior to January 1, 1993.

"(c) Authorization of appropriations. Except as provided by subsection (a), there is authorized to be appropriated for carrying out the purposes of this Act such sums as the Congress may from time to time determine."

Section 4025 (16 U.S.C. 470a note)

(a) Report. Not later than one year after the date of enactment of this Act, the Secretary of the Interior shall prepare and submit to the Congress a report on the manner in which properties are listed or determined to be eligible for listing on the National Register, including but not limited to, the appropriateness of the criteria used in determining such eligibility, and the effect, if any, of such listing or finding of eligibility.

(b) Preparation. In preparing the report, the Secretary shall consult with, and consider the views and comments of other Federal agencies, as well as interested individuals and public and private organizations, and shall include representative comments received as an appendix to the report.

ENDNOTES

¹The wording of the "National Historic Preservation Act Amendments of 1992" is as passed in Title XL of HR429. HR429 also contains an amendment to An Act to Establish the Martin Luther King, Jr. National Historic Site in the State of Georgia, Public Law 96-428; 94 Stat. 1839, which has not been reprinted.

Historic Sites Act of 1935

[PUBLIC— No . 292 – 74 TH CONGRESS]

[S. 2 0 7 3]

AN ACT

To provide for the preservation of historic American sites, buildings, objects, and antiquities of national significance, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That it is hereby declared that it is a national policy to preserve for public use historic sites, buildings and objects of national significance for the inspiration and benefit of the people of the United States.

SEC. 2. The Secretary or the Interior (hereinafter referred to as the Secretary), through the National Park Service, for the purposes of effectuating the policy expressed in section 1 here of, shall have the following powers and perform the following duties and functions:

- (a) Secure, collate, and preserve drawings, plans, photographs, and other data of historic and archaeological sites, buildings, and objects.
- (b) Make a survey of historic and archaeological sites, buildings, and objects for the purpose of determining which possess exceptional value as commemorating or illustrating the history of the United States.
- (c) Make necessary investigations and researches in the United States relating to particular sites, buildings, or objects to obtain in true and accurate historical and archaeological facts and information concerning the same.
- (d) For the purpose of this Act, acquire in the name of the United States by gift, purchase, or otherwise any property, personal or real, or any interest or estate therein, title to any real property to be satisfactory to the Secretary: *Provided*, That no such property which is owned by any religious or educational institution, or which is owned or administered for the benefit of the public may be so acquired without the consent of the owner: *Provided further*, That no such property shall be acquired or contract or agreement for the acquisition thereof made which will obligate the general fund of the Treasury for the payment of such property, unless or until Congress has appropriated money which is available for that purpose.
- (e) Contract and make cooperative agreements with States, municipal subdivisions, corporations, associations, or individuals, with proper bond where deemed advisable, to protect, preserve, maintain, or operate any historic or archaeological building, site, object, or property used in connection therewith for public use, regardless as to whether the title thereto is in the United States: *Provided*, That no contract or cooperative agreement shall be made or entered into which will obligate the general fund of the Treasury unless or until Congress has appropriated money for such purpose.
- (f) Restore, reconstruct, rehabilitate, preserve, and maintain historic or prehistoric sites, buildings, objects, and properties of national historical or archaeological significance and where deemed desirable establish and maintain museums in connection therewith.
- (g) Erect and maintain tablets to mark or commemorate historic or prehistoric places and events of national historical or archaeological significance.
- (h) Operate and manage historic and archaeological sites, buildings, and properties acquired under the provisions of this Act together with lands and subordinate buildings for the benefit of the public, such authority to include the power to charge reasonable visitation fees and grant concessions, leases, or permits for the use of land, building space, roads, or trails when necessary or desirable either to accommodate the public or to facilitate administration: *Provided*, That such concessions, leases, or permits, shall be let at competitive bidding, to the person making the highest and best bid.
- (i) When the Secretary determines that it would be administratively burdensome to restore

reconstruct, operate, or maintain any particular historic or archaeological site, building, or property donated to the United States through the National Park Service, he may cause the same to be done by organizing a corporation for that purpose under the laws of the District of Columbia or any State.

(j) develop an educational program and service for the purpose of making available to the public facts and information pertaining to American historic and archaeological sites, buildings, and properties of national significance. Reasonable charges may be made for the dissemination of any such facts or information.

(k) Perform any and all acts, and make such rules and regulations not inconsistent with this Act as may be necessary and proper to carry out the provisions thereof. Any person violating any of the regulations authorized by this Act shall be punished by a fine of not more than \$500 and be adjudged to pay all cost of the proceedings.

SEC. 3. A general advisory board to be known as the "Advisory Board on National Parks, Historic Sites, Buildings, and Monuments" is hereby established, to be composed of not to exceed eleven persons, citizens of the United States, to include representatives competent in the fields of history, archaeology, architecture, and human geography, who shall be appointed by the Secretary and serve at his pleasure. The members of such board shall receive no salary but may be paid expenses incidental to travel when engaged in their duties as such members.

It shall be the duty of such board to advise on any matters relating to national parks and to the administration of this Act submitted to it for consideration by the Secretary. It may also recommend policies to the Secretary from time to time pertaining to national parks and to the restoration, reconstruction, conservation, and general administration of historic and archaeological sites, buildings, and properties.

SEC. 4. The Secretary, in administering this Act, is authorized to cooperate with and may seek and accept the assistance of any Federal, State, or municipal department or agency, or any educational or scientific institution, or any patriotic association, or any individual.

(b) When deemed necessary, technical advisory committees may be established to act in an advisory capacity in connection with the restoration or reconstruction of any historic or prehistoric building or structure.

(c) Such professional and technical assistance may be employed without regard to the civil-service laws, and such service may be established as may be required to accomplish the purposes of this Act and for which money may be appropriated by Congress or made available by gifts for such purpose.

SEC. 5. Nothing in this Act shall be held to deprive any State, or political subdivision thereof, of its civil and criminal jurisdiction in and over lands acquired by the United States under this Act.

SEC. 6. There is authorized to be appropriated for carrying out the purposes of this Act such sums as the Congress may from time to time determine.

SEC. 7. The provisions of this Act shall control if any of them are in conflict with any other Act or Acts relating to the same subject matter.

Approved, August 21, 1935.

Archaeological Resources Protection Act of 1979

Archaeological Resources Protection Act of 1979

AN ACT To protect archaeological resources on public lands and Indian lands, and for other purposes.

Be it enacted of the Senate and the house of Representatives of the United States of America in Congress assembled,

SHORT TITLE

Section 1. This Act may be cited as the "Archaeological Resources Protection Act of 1979".

FINDINGS AND PURPOSE

SEC. 2. (a) The Congress finds that-

(1) archaeological resources on public lands and Indian lands are an accessible and irreplaceable part of the Nation's heritage;

(2) these resources are increasingly endangered because of their commercial attractiveness;

(3) existing Federal laws do not provide adequate protection to prevent the loss and destruction of these archaeological resources and sites resulting from uncontrolled excavations and pillage; and

(4) there is a wealth of archaeological information which has been legally obtained by private individuals for noncommercial purposes and which could voluntarily be made available to professional archaeologists and institutions.

(b) The purpose of this Act is to secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals having collections of archaeological resources and data which were obtained before the date of the enactment of this Act.

DEFINITIONS

SEC. 3. As used in this Act-

(1) The term "archaeological resource" means any material remains of past human life or activities which are of archaeological interest, as determined under the uniform regulations promulgated pursuant to this Act. Such regulations containing such determination shall include, but not be limited to: pottery, basketry, bottles, weapons, weapon projectiles, tools, structures or portions of structures, pit houses, rock paintings,

rock carvings, intaglios, graves, human skeletal materials, or any portion or piece of any of the foregoing items. Nonfossilized and fossilized paleontological specimens, or any portion or piece thereof, shall not be considered archaeological resources, under the regulations under this paragraph, unless found in an archaeological context. No item shall be treated as an archaeological resource under regulations under this paragraph unless such item is at least 100 years of age.

(2) The term "Federal land manager" means, with respect to any public lands, the Secretary of the department, or the head of any other agency or instrumentality of the United States, having primary management authority over such lands. In the case of any public lands or Indian lands with respect to which no department, agency, or instrumentality has primary management authority, such term means the Secretary of the Interior. If the Secretary of the Interior consents, the responsibilities (in whole or in part) under this Act of the Secretary of any department (other than the Department of the Interior) or the head of any other agency or instrumentality may be delegated to the Secretary of the Interior with respect to any land managed by such other Secretary or agency head, and in any such case, the term "Federal land manager" means the Secretary of the Interior.

(3) The term "public lands" means-

(A) lands which are owned and administered by the United States as part of -

(i) the national park system,

(ii) the national wildlife refuge system, or

(iii) the national forest system; and

(B) all other lands the fee title to which is held by the United States, other than lands on the Outer Continental Shelf and lands which are under the jurisdiction of the Smithsonian Institution;

(4) The term "Indian lands" means lands of Indian tribes, or Indian individuals, which are either held in trust by the United States or subject to a restriction against alienation imposed by the United States, except for any subsurface interest in lands not owned or controlled by an Indian tribe or an Indian individual.

(5) The term "Indian tribe" means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in, or established pursuant to, the Alaska Native Claims Settlement Act (85 Stat. 688).

(6) The term "person" means an individual, corporation, partnership, trust, institution, association, or any other private entity or any officer, employee, agent, department, or instrumentality of the United States, of any Indian tribe, or of any State or political subdivision thereof.

(7) The term "State" means any of the fifty States, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands.

EXCAVATION AND REMOVAL

SEC. 4. (a) Any person may apply to the Federal land manager for a permit to excavate or remove any archaeological resource located on public lands or Indian lands and to carry out activities associated with such excavation or removal. The application shall be required, under uniform regulations under this Act, to contain such information as the

Federal land manager deems necessary, including information concerning the time, scope, and location and specific purpose of the proposed work.

(b) A permit may be issued pursuant to an application under subsection (a) if the Federal land manager determines, pursuant to uniform regulations under this Act, that-

(1) the applicant is qualified, to carry out the permitted activity,

(2) the activity is undertaken for the purpose of furthering archaeological knowledge in the public interest,

(3) the archaeological resources which are excavated or removed from public lands will remain the property of the United States, and such resources and copies of associated archaeological records and data will be preserved by a suitable university, museum, or other scientific or educational institution, and

(4) the activity pursuant to such permit is not inconsistent with any management plan applicable to the public lands concerned.

(c) If a permit issued under this section may result in harm to, or destruction of, any religious or cultural site, as determined by the Federal land manager, before issuing such permit, the Federal land manager shall notify any Indian tribe which may consider the site as having religious or cultural importance. Such notice shall not be deemed a disclosure to the public for purposes of section 9.

(d) Any permit under this section shall contain terms and conditions, pursuant to uniform regulations promulgated under this Act, as the Federal land manager concerned deems necessary to carry out the purposes of this Act.

(e) Each permit under this section shall identify the individual who shall be responsible for carrying out the terms and conditions of the permit and for otherwise complying with this Act and other law applicable to the permitted activity.

(f) Any permit issued under this section may be suspended by the Federal land manager upon his determination that the permittee has violated any provision of subsection (a),

(b), or (c) of section 6. Any such permit may be revoked by such Federal land manager upon assessment of a civil penalty under section 7 against the permittee or upon the permittee's conviction under section 6.

(g)(1) No permit shall be required under this section or under the Act of June 8, 1906 (16 U.S.C. 431), for the excavation or removal by any Indian tribe or member thereof of any archaeological resource located on Indian lands of such Indian tribe, except that in the absence of tribal law regulating the excavation or removal of archaeological resources on Indian lands, an individual tribal member shall be required to obtain a permit under this section.

(2) In the case of any permits for the excavation or removal of any archaeological resources located on Indian lands, the permit may be granted only after obtaining the consent of the Indian or Indian tribe owning or having jurisdiction over such lands. The permit shall include such terms and conditions as may be requested by such Indian or Indian tribe.

(h)(1) No permit or other permission shall be required under the Act of June 8, 1906 (16 U.S.C. 431-433), for any activity for which a permit is issued under this section.

(2) Any permit issued under the Act of June 8, 1906, shall remain in effect according to its terms and conditions following the enactment of this Act. No permit shall be required to carry out any activity under a permit issued under the Act of June 8, 1906, before the date of the enactment of this Act which remains in effect as provided in this paragraph, and nothing in this Act shall modify or affect any such permit.

(i) Issuance of a permit in accordance with this section and applicable regulations shall not require compliance with section 106 of the Act of October 15, 1966 (80 Stat. 917, 16 U.S.C. 470f).

(j) Upon the written request of the Governor of any State, the Federal land manager shall issue a permit, subject to the provisions of subsections (b)(3), (b)(4), (c), (e), (f), (g), (h), and (i) of this section for the purpose of conducting archaeological research, excavation, removal, and curation, on behalf of the State or its educational institutions, to such Governor or to such designee as the Governor deems qualified to carry out the intent of this Act.

CUSTODY OF RESOURCES

Sec. 5. The Secretary of the Interior may promulgate regulations providing for-

(1) the exchange, where appropriate, between suitable universities, museums, or other scientific or educational institutions, of archaeological resources removed from public lands and Indian lands pursuant to this Act, and

(2) the ultimate disposition of such resources and other resources removed pursuant to the Act of June 27, 1960 (16 U.S.C. 469-469c) or the Act of June 8, 1906 (16 U.S.C. 431-433). Any exchange or ultimate disposition under such regulation of archaeological resources excavated or removed from Indian lands shall be subject to the consent of the Indian or Indian tribe which owns or has jurisdiction over such lands. Following promulgation of regulations, under this section, notwithstanding any other provision of law, such regulations shall govern the disposition of archaeological resources removed from public lands and Indian lands pursuant to this Act.

PROHIBITED ACTS AND CRIMINAL PENALTIES

Sec. 6. (a) No person may excavate, remove, damage, or otherwise alter or deface any archaeological resource located on public lands or Indian lands unless such activity is pursuant to a permit issued under section 4, a permit referred to in section 4(h)(2), or the exemption contained in section 4(g)(1).

(b) No person may sell, purchase, exchange, transport, receive, or offer to sell, purchase, or exchange any archaeological resource if such resource was excavated or removed from public lands or Indian lands in violation of-

(1) the prohibition contained in subsection (a), or

(2) any provision, rule, regulation, ordinance, or permit in effect under any other provision of Federal law.

(c) No person may sell, purchase, exchange, transport, receive, or offer to sell, purchase, or exchange, in interstate or foreign commerce, any archaeological resource excavated, removed, sold, purchased, exchanged, transported, or received in violation of any provision, rule, regulation, ordinance, or permit in effect under State or local law.

(d) Any person who knowingly violates, or counsels, procures, solicits, or employs any other person to violate, any prohibition contained in subsection (a), (b), or (c) of this section shall, upon conviction, be fined not more than \$10,000 or imprisoned not more than one year, or both: *Provided, however,* That if the commercial or archaeological value of the archaeological resources involved and the cost of restoration and repair of

such resources exceeds the sum of \$5,000, such person shall be fined not more than \$20,000 or imprisoned not more than two years, or both. In the case of a second or subsequent such violation upon conviction such person shall be fined not more than \$100,000, or imprisoned not more than five years, or both.

(e) The prohibitions contained in this section shall take effect on the date of the enactment of this Act.

(f) Nothing in subsection (b)(1) of this section shall be deemed applicable to any person with respect to an archaeological resource which was in the lawful possession of such person prior to the date of the enactment of this Act.

(g) Nothing in subsection (d) of this section shall be deemed applicable to any person with respect to the removal of arrowheads located on the surface of the ground.

CIVIL PENALTIES

Sec. 7. (a)(1) Any person who violates any prohibition contained in an applicable regulation or permit issued under this Act may be assessed a civil penalty by the Federal land manager concerned. No penalty may be assessed under this subsection unless such person is given notice and opportunity for a hearing with respect to such violation. Each violation shall be a separate offense. Any such civil penalty may be remitted or mitigated by the Federal land manager concerned.

(2) The amount of such penalty shall be determined under regulation promulgated pursuant to this Act, taking into account, in addition to other factors-

(A) the archaeological or commercial value of the archaeological resource involved, and

(B) the cost of restoration and repair of the resource and the archaeological site involved.

Such regulations shall provide that, in the case of a second or subsequent violation by any person, the amount of such civil penalty may be double the amount which would have been assessed if such violation were the first violation by such person. The amount of any penalty assessed under this subsection for any violation shall not exceed an amount equal to double the cost of restoration and repair of resources and archaeological sites damaged and double the fair market value of resources destroyed or not recovered.

(3) No penalty shall be assessed under this section for the removal of arrowheads located on the surface of the ground.

(b)(1) Any person aggrieved by an order assessing a civil penalty under subsection (a) may file a petition for judicial review of such order with the United States District Court for the District of Columbia or for any other district in which such a person resides or transacts business. Such a petition may only be filed within the 30-day period beginning on the date the order making such assessment was issued. The court shall hear such action on the record made before the Federal land manager and shall sustain his action if it is supported by substantial evidence on the record considered as a whole.

(2) If any person fails to pay an assessment of a civil penalty-

(A) after the order making the assessment has become a final order and such person has not filed a petition for judicial review of the order in accordance with paragraph (1), or

(B) after a court in an action brought under paragraph (1) has entered a final judgment upholding the assessment of a civil penalty,

the Federal land managers may request the Attorney General to institute a civil action in a

district court of the United States for any district in which such person is found, resides, or transacts business to collect the penalty and such court shall have jurisdiction to hear and decide any such action. In such action, the validity and amount of such penalty shall not be subject to review.

(c) Hearings held during proceedings for the assessment of civil penalties authorized by subsection (a) shall be conducted in accordance with section 554 of title 5 of the United States Code. The Federal land manager may issue subpoenas for the attendance and testimony of witnesses and the production of relevant papers, books, and documents, and administer oaths. Witnesses summoned shall be paid the same fees and mileage that are paid to witnesses in the courts of the United States. In case of contumacy or refusal to obey a subpoena served upon any person pursuant to this paragraph, the district court of the United States for any district in which such person is found or resides or transacts business, upon application by the United States and after notice to such person, shall have jurisdiction to issue an order requiring such person to appear and give testimony before the Federal land manager or to appear and produce documents before the Federal land manager, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

REWARDS; FORFEITURE

Sec. 8. (a) Upon the certification of the Federal land manager concerned, the Secretary of the Treasury is directed to pay from penalties and fines collected under sections 6 and 7 an amount equal to one-half of such penalty or fine, but not to exceed \$50 0, to any person who furnishes information which leads to the finding of a civil violation, or the conviction of criminal violation, with respect to which such penalty or fine was paid. If several persons provided such information, such amount shall be divided among such persons. No officer or employee of the United States or of any service in the performance of his official duties shall be eligible for payment under this subsection.

(b) All archaeological resources with respect to which a violation of subsection (a), (b), or (c) of section 6 occurred and which are in the possession of any person, and all vehicles and equipment of any person which were used in connection with such violation, may be (in the discretion of the court or administrative law judge, as the case may be) subject to forfeiture to the United States upon-

- (1) such person's conviction of such violation under section 6,
- (2) assessment of a civil penalty against such person under section 7 with respect to such violation, or
- (3) a determination of any court that such archaeological resources, vehicles, or equipment were involved in such violation.

(c) In cases in which a violation of the prohibition contained in subsection (a), (b), or (c) of section 6 involve archaeological resources excavated or removed from Indian lands, the Federal land manager or the court, as the case may be, shall provide for the payment to the Indian or Indian tribe involved of all penalties collected pursuant to section 7 and for the transfer to such Indian or Indian tribe of all items forfeited under this section.

CONFIDENTIALITY

Sec. 9. (a) Information concerning the nature and location of any archaeological resource for which the excavation or removal requires a permit or other permission under this Act or under any other provision of Federal law may not be made available to the public under subchapter II of chapter 5 of title 5 of the United States Code or under any other provision of law unless the Federal land manager concerned determines that such disclosure would-

(1) further the purposes of this Act or the Act of June 27, 1960 (16 U.S.C. 469-469c), and
(2) not create a risk of harm to such resources or to the site at which such resources are located.

(b) Notwithstanding the provisions of subsection (a), upon the written request of the Governor of any State, which request shall state-

(1) the specific site or area for which information is sought,
(2) the purpose for which such information is sought,
(3) a commitment by the Governor to adequately protect the confidentiality of such information to protect the resource from commercial exploitation,
the Federal land manager concerned shall provide to the Governor information concerning the nature and location of archaeological resources within the State of the requesting Governor.

REGULATIONS; INTERGOVERNMENTAL COORDINATION

Sec 10. (a) The Secretaries of the Interior, Agriculture and Defense and the Chairman of the Board of the Tennessee Valley Authority, after public notice and hearing, shall promulgate such uniform rules and regulations as may be appropriate to carry out the purposes of this Act. Such rules and regulations may be promulgated only after consideration of the provisions of the American Indian Religious Freedom Act (92 Stat. 469; 42 U.S.C. 1996). Each uniform rule or regulation promulgated under this Act shall be submitted on the same calendar day to the Committee on Energy and Natural Resources of the United States Senate and to the Committee on Interior and Insular Affairs of the United States House of Representatives, and no such uniform rule or regulation may take effect before the expiration of a period of ninety calendar days following the date of its submission to such Committees.

(b) Each Federal land manager shall promulgate such rules and regulations under subsection (a), as may be appropriate for the carrying out of his functions and authorities under this Act.

COOPERATION WITH PRIVATE INDIVIDUALS

Sec. 11. The Secretary of the Interior shall take such action as may be necessary, consistent with the purposes of this Act, to foster and improve the communication, cooperation, and exchange of information between-

(1) private individuals having collections of archaeological resources and data which were obtained before the date of the enactment of this Act, and
(2) Federal authorities responsible for the protection of archaeological resources on the

public lands and Indian lands and professional archaeologists and associations of professional archaeologists.

In carrying out this section, the Secretary shall, to the extent practicable and consistent with the provisions of this Act, make efforts to expand the archaeological data base for the archaeological resources of the United States through increased cooperation between private individuals referred to in paragraph (1) and professional archaeologists and archaeological organizations.

SAVINGS PROVISIONS

Sec. 12. (a) Nothing in this Act shall be construed to repeal, modify, or impose additional restrictions on the activities permitted under existing laws and authorities relating to mining, mineral leasing, reclamation, and other multiple uses of the public lands.

(b) Nothing in this Act applies to, or requires a permit for, the collection for private purposes of any rock, coin, bullet, or mineral which is not an archaeological resource, as determined under uniform regulations promulgated under section 3(1).

(c) Nothing in this Act shall be construed to affect any land other than public land or Indian land or to affect the lawful recovery, collection, or sale of archaeological resources from land other than public land or Indian land.

REPORT

Sec. 13. As part of the annual report required to be submitted to the specified committees of the Congress pursuant to section 5(c) of the Act of June 27, 1960 (74 Stat. 220; 16 U.S.C. 469-469a), the Secretary of the Interior shall comprehensively report as a separate component on the activities carried out under the provisions of this Act, and he shall make such recommendations as he deems appropriate as to changes or improvements needed in the provisions of this Act. Such report shall include a brief summary of the actions undertaken by the Secretary under section 11 of this Act, relating to cooperation with private individuals.

American Antiquities Act of 1906

16 USC 431-433

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That any person who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall, upon conviction, be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

Sec. 2. That the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with proper care and management of the objects to be protected: Provided, That when such objects are situated upon a tract covered by a bona fied unperfected claim or held in private ownership, the tract, or so much thereof as may be necessary for the proper care and management of the object, may be relinquished to the Government, and the Secretary of the Interior is hereby authorized to accept the relinquishment of such tracts in behalf of the Government of the United States.

Sec. 3. That permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions may be granted by the Secretaries of the Interior, Agriculture, and War to institutions which they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulation as they may prescribe: Provided, That the examinations, excavations, and gatherings are undertaken for the benefit of reputable museums, universities, colleges, or other recognized scientific or educational institutions, with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums.

Sec. 4. That the Secretaries of the Departments aforesaid shall make and publish from time to time uniform rules and regulations for the purpose of carrying out the provisions of this Act.

Approved, June 8, 1906

**Authority: 16 U.S.C. 470aa-mm, 16 U.S.C. 470 et seq.
s 79.1 Purpose.**

(a) The regulations in this part establish definitions, standards, procedures and guidelines to be followed by Federal agencies to preserve collections of prehistoric and historic material remains, and associated records, recovered under the authority of the Antiquities Act (16 U.S.C. 431- 433), the Reservoir Salvage Act (16 U.S.C. 469-469c), section 110 of the National Historic Preservation Act (16 U.S.C. 470h-2) or the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm). They establish:

- (1) Procedures and guidelines to manage and preserve collections;
- (2) Terms and conditions for Federal agencies to include in contracts, memoranda, agreements or other written instruments with repositories for curatorial services;
- (3) Standards to determine when a repository has the capability to provide long-term curatorial services; and

(4) Guidelines to provide access to, loan and otherwise use collections.

(b) The regulations in this part contain three appendices that provide additional guidance for use by the Federal Agency Official.

(1) Appendix A to these regulations contains an example of an agreement between a Federal agency and a non-Federal owner of material remains who is donating the remains to the Federal agency.

(2) Appendix B to these regulations contains an example of a memorandum of understanding between a Federal agency and a repository for long-term curatorial services for a federally-owned collection.

(3) Appendix C to these regulations contains an example of an agreement between a repository and a third party for a short-term loan of a federally- owned collection (or a part thereof).

(4) The three appendices are meant to illustrate how such agreements might appear. They should be revised according to the:

- (i) Needs of the Federal agency and any non-Federal owner;
- (ii) Nature and content of the collection; and
- (iii) Type of contract, memorandum, agreement or other written instrument being used.

(5) When a repository has preexisting standard forms (e.g., a short-term loan form) that are consistent with the regulations in this part, those forms may be used in lieu of developing new ones.

s 79.2 Authority.

(a) The regulations in this part are promulgated pursuant to section 101(a)(7)(A) of the National Historic Preservation Act (16 U.S.C. 470a) which requires that the Secretary of the Interior issue regulations ensuring that significant prehistoric and historic artifacts, and associated records, recovered under the authority of section 110 of that Act (16 U.S.C. 470h-2), the Reservoir Salvage Act (16 U.S.C. 469-469c) and the Archeological Resources Protection Act (16 U.S.C. 470aa-mm) are deposited in an institution with adequate long-term curatorial capabilities.

(b) In addition, the regulations in this part are promulgated pursuant to section 5 of the Archeological Resources Protection Act (16 U.S.C. 470dd) which gives the Secretary of the Interior discretionary authority to promulgate regulations for the:

(1) Exchange, where appropriate, between suitable universities, museums or other scientific or educational institutions, of archeological resources recovered from public and Indian lands under that Act; and

(2) Ultimate disposition of archeological resources recovered under that Act (16 U.S.C. 470aa-mm), the Antiquities Act (16 U.S.C. 431-433) or the Reservoir Salvage Act (16 U.S.C. 469-469c).

(3) It further states that any exchange or ultimate disposition of resources excavated or removed from Indian lands shall be subject to the consent of the Indian or Indian tribe that owns or has jurisdiction over such lands.

s 79.3 Applicability.

(a) The regulations in this part apply to collections, as defined in s 79.4 of this part, that are excavated or removed under the authority of the Antiquities Act (16 U.S.C. 431-433), the Reservoir Salvage Act (16 U.S.C. 469-469c), section 110 of the National Historic Preservation Act (16 U.S.C. 470h-2) or the Archeological Resources Protection Act (16 U.S.C. 470aa-mm). Such collections generally include those that are the result of a prehistoric or historic resource survey, excavation or other study conducted in connection with a Federal action, assistance, license or permit.

(1) Material remains, as defined in s 79.4 of this part, that are excavated or removed from a prehistoric or historic resource generally are the property of the landowner.

(2) Data that are generated as a result of a prehistoric or historic resource survey, excavation or other study are recorded in associated records, as defined in s 79.4 of this part. Associated records that are prepared or assembled in connection with a Federal or federally authorized prehistoric or historic resource survey, excavation or other study are the property of the U.S. Government, regardless of the location of the resource.

(b) The regulations in this part apply to preexisting and new collections that meet the requirements of paragraph (a) of this section. However, the regulations shall not be applied in a manner that would supersede or breach material terms and conditions in any contract, grant, license, permit, memorandum, or agreement entered into by or on behalf of a Federal agency prior to the effective date of this regulation.

(c) Collections that are excavated or removed pursuant to the Antiquities Act (16 U.S.C. 431-433) remain subject to that Act, the Act's implementing rule (43 CFR part 3), and the terms and conditions of the pertinent Antiquities Act permit or other approval.

(d) Collections that are excavated or removed pursuant to the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm) remain subject to that Act, the Act's implementing rules (43 CFR part 7, 36 CFR part 296, 18 CFR part 1312, and 32 CFR part 229), and the terms and conditions of the pertinent Archaeological Resources Protection Act permit or other approval.

(e) Any repository that is providing curatorial services for a collection subject to the regulations in this part must possess the capability to provide adequate long-term curatorial services, as set forth in s 79.9 of this part, to safeguard and preserve the associated records and any material remains that are deposited in the repository.

s 79.4 Definitions.

As used for purposes of this part:

(a) Collection means material remains that are excavated or removed during a survey, excavation or other study of a prehistoric or historic resource, and associated records that are prepared or assembled in connection with the survey, excavation or other study.

(1) Material remains means artifacts, objects, specimens and other physical evidence that are excavated or removed in connection with efforts to locate, evaluate, document, study, preserve or recover a prehistoric or historic resource. Classes of material remains (and illustrative examples) that may be in a collection include, but are not limited to:

(i) Components of structures and features (such as houses, mills, piers, fortifications, raceways, earthworks and mounds);

(ii) Intact or fragmentary artifacts of human manufacture (such as tools, weapons, pottery, basketry and textiles);(iii) Intact or fragmentary natural objects used by humans (such as rock crystals, feathers and pigments);

- (iv) By-products, waste products or debris resulting from the manufacture or use of man-made or natural materials (such as slag, dumps, cores and debitage);
- (v) Organic material (such as vegetable and animal remains, and coprolites);
- (vi) Human remains (such as bone, teeth, mummified flesh, burials and cremations);
- (vii) Components of petroglyphs, pictographs, intaglios or other works of artistic or symbolic representation;
- (viii) Components of shipwrecks (such as pieces of the ship's hull, rigging, armaments, apparel, tackle, contents and cargo);
- (ix) Environmental and chronometric specimens (such as pollen, seeds, wood, shell, bone, charcoal, tree core samples, soil, sediment cores, obsidian, volcanic ash, and baked clay); and
- (x) Paleontological specimens that are found in direct physical relationship with a prehistoric or historic resource.

(2) Associated records means original records (or copies thereof) that are prepared, assembled and document efforts to locate, evaluate, record, study, preserve or recover a prehistoric or historic resource. Some records such as field notes, artifact inventories and oral histories may be originals that are prepared as a result of the field work, analysis and report preparation. Other records such as deeds, survey plats, historical maps and diaries may be copies of original public or archival documents that are assembled and studied as a result of historical research. Classes of associated records (and illustrative examples) that may be in a collection include, but are not limited

to:

- (i) Records relating to the identification, evaluation, documentation, study, preservation or recovery of a resource (such as site forms, field notes, drawings, maps, photographs, slides, negatives, films, video and audio cassette tapes, oral histories, artifact inventories, laboratory reports, computer cards and tapes, computer disks and diskettes, printouts of computerized data, manuscripts, reports, and accession, catalog and inventory records);
- (ii) Records relating to the identification of a resource using remote sensing methods and equipment (such as satellite and aerial photography and imagery, side scan sonar, magnetometers, subbottom profilers, radar and fathometers);
- (iii) Public records essential to understanding the resource (such as deeds, survey plats, military and census records, birth, marriage and death certificates, immigration and naturalization papers, tax forms and reports);
- (iv) Archival records essential to understanding the resource (such as historical maps, drawings and photographs, manuscripts, architectural and landscape plans, correspondence, diaries, ledgers, catalogs and receipts); and
- (v) Administrative records relating to the survey, excavation or other study of the resource (such as scopes of work, requests for proposals, research proposals, contracts, antiquities permits, reports, documents relating to compliance with section 106 of the National Historic Preservation Act (16 U.S.C. 470f), and National Register of Historic Places nomination and determination of eligibility forms).

(b) Curatorial services. Providing curatorial services means managing and preserving a collection according to professional museum and archival practices, including, but not limited to:

- (1) Inventorying, accessioning, labeling and cataloging a collection;
- (2) Identifying, evaluating and documenting a collection;
- (3) Storing and maintaining a collection using appropriate methods and containers, and under appropriate environmental conditions and physically secure controls;
- (4) Periodically inspecting a collection and taking such actions as may be necessary to preserve it;
- (5) Providing access and facilities to study a collection; and
- (6) Handling, cleaning, stabilizing and conserving a collection in such a manner to preserve it.

(c) Federal Agency Official means any officer, employee or agent officially representing the secretary of the department or the head of any other agency or instrumentality of the United States having primary management authority over a collection that is subject to this part.

(d) Indian lands has the same meaning as in s -.3(e) of uniform regulations 43 CFR part 7, 36 CFR part 296, 18 CFR part 1312, and 32 CFR part 229.

(e) Indian tribe has the same meaning as in s -.3(f) of uniform regulations 43 CFR part 7, 36 CFR part 296, 18 CFR part 1312, and 32 CFR part 229.

(f) Personal property has the same meaning as in 41 CFR 100-43.001-14. Collections, equipment (e.g., a specimen cabinet or exhibit case), materials and supplies are classes of personal property.

(g) Public lands has the same meaning as in s -.3(d) of uniform regulations 43 CFR part 7, 36 CFR part 296, 18 CFR part 1312, and 32 CFR part 229.

(h) Qualified museum professional means a person who possesses knowledge, experience and demonstrable competence in museum methods and techniques appropriate to the nature and content of the collection under the person's management and care, and commensurate with the person's duties and responsibilities. Standards that may be used, as appropriate, for classifying positions and for evaluating a person's qualifications include, but are not limited to, the following:

(1) The Office of Personnel Management's "Position Classification Standards for Positions under the General Schedule Classification System" (U.S. Government Printing Office, stock No. 906--028-00000-0 (1981)) are used by Federal agencies to determine appropriate occupational series and grade levels for positions in the Federal service. Occupational series most commonly associated with museum work are the museum curator series (GS/GM-1015) and the museum technician and specialist series (GS/GM-1016). Other scientific and professional series that may have collateral museum duties include, but are not limited to, the archivist series (GS/GM-1420), the archeologist series (GS/GM- 193), the anthropologist series (GS/GM-190), and the historian series (GS/GM- 170). In general, grades GS-9 and below are assistants and trainees while grades GS-11 and above are professionals at the full performance level. Grades GS-11 and above are determined according to the level of independent professional responsibility, degree of specialization and scholarship, and the nature, variety, complexity, type and scope of the work.

(2) The Office of Personnel Management's "Qualification Standards for Positions under the General Schedule (Handbook X-118)" (U.S. Government Printing Office, stock No. 906-030-00000-4 (1986)) establish educational, experience and training requirements for employment with the Federal Government under the various occupational series. A graduate degree in museum science or applicable subject matter, or equivalent training and experience, and three years of professional experience are required for museum positions at grades GS-11 and above.

(3) The "Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation" (48 FR 44716, Sept. 29, 1983) provide technical advice about archeological and historic preservation activities and methods for use by Federal, State and local Governments and others. One section presents qualification standards for a number of historic preservation professions. While no standards are presented for collections managers, museum curators or technicians, standards are presented for other professions (i.e., historians, archeologists, architectural historians, architects, and historic architects) that may have collateral museum duties.

(4) Copies of the Office of Personnel Management's standards, including subscriptions for subsequent updates, may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402. Copies may be inspected at the Office of Personnel Management's Library, 1900 E Street NW., Washington, DC, at any regional or area office of the Office of Personnel Management, at any Federal Job Information Center, and at any personnel office of any Federal agency. Copies of the "Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation" are available at no charge from the Interagency Resources Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127.

(i) Religious remains means material remains that the Federal Agency Official has determined are of traditional religious or sacred importance to an Indian tribe or other group because of customary use in religious rituals or spiritual activities. The Federal Agency Official makes this determination in consultation with appropriate Indian tribes or other groups.

(j) Repository means a facility such as a museum, archeological center, laboratory or storage facility managed by a university, college, museum, other educational or scientific institution, a Federal, State or local Government agency or Indian tribe that can provide professional, systematic and accountable curatorial services on a long-term basis.

(k) Repository Official means any officer, employee or agent officially representing the repository that is providing curatorial services for a collection that is subject to this part.

(l) Tribal Official means the chief executive officer or any officer, employee or agent officially representing the Indian tribe.

s 79.5 Management and preservation of collections.

The Federal Agency Official is responsible for the long-term management and preservation of preexisting and new collections subject to this part. Such collections shall be placed in a repository with adequate long-term curatorial capabilities, as set forth in s 79.9 of this part, appropriate to the nature and content of the collections.

(a) Preexisting collections. The Federal Agency Official is responsible for ensuring that preexisting collections, meaning those collections that are placed in repositories prior to the effective date of this rule, are being properly managed and preserved. The Federal Agency Official shall identify such repositories, and review and evaluate the curatorial services that are being provided to preexisting collections. When the Federal Agency Official determines that such a repository does not have the capability to provide adequate long-term curatorial services, as set forth in s 79.9 of this part, the Federal Agency Official may either:

(1) Enter into or amend an existing contract, memorandum, agreement or other appropriate written instrument for curatorial services for the purpose of:

(i) Identifying specific actions that shall be taken by the repository, the Federal agency or other appropriate party to eliminate the inadequacies;

(ii) Specifying a reasonable period of time and a schedule within which the actions shall be completed; and

(iii) Specifying any necessary funds or services that shall be provided by the repository, the Federal agency or other appropriate party to complete the actions; or

(2) Remove the collections from the repository and deposit them in another repository that can provide such services in accordance with the regulations in this part. Prior to moving any collection that is from Indian lands, the Federal Agency Official must obtain the written consent of the Indian landowner and the Indian tribe having jurisdiction over the lands.

(b) New collections. The Federal Agency Official shall deposit a collection in a repository upon determining that:

(1) The repository has the capability to provide adequate long-term curatorial services, as set forth in s 79.9 of this part;

(2) The repository's facilities, written curatorial policies and operating procedures are consistent with the regulations in this part;

(3) The repository has certified, in writing, that the collection shall be cared for, maintained and made accessible in accordance with the regulations in this part and any terms and conditions that are specified by the Federal Agency Official;

(4) When the collection is from Indian lands, written consent to the disposition has been obtained from the Indian landowner and the Indian tribe having jurisdiction over the lands; and

(5) The initial processing of the material remains (including appropriate cleaning, sorting, labeling, cataloging, stabilizing and packaging) has been completed, and associated records have been prepared and organized in accordance with the repository's processing and documentation procedures.

(c) Retention of records by Federal agencies. The Federal Agency Official shall maintain administrative records on the disposition of each collection including, but not limited to:

(1) The name and location of the repository where the collection is deposited;

- (2) A copy of the contract, memorandum, agreement or other appropriate written instrument, and any subsequent amendments, between the Federal agency, the repository and any other party for curatorial services;
- (3) A catalog list of the contents of the collection that is deposited in the repository;
- (4) A list of any other Federal personal property that is furnished to the repository as a part of the contract, memorandum, agreement or other appropriate written instrument for curatorial services;
- (5) Copies of reports documenting inspections, inventories and investigations of loss, damage or destruction that are conducted pursuant to s 79.11 of this part; and
- (6) Any subsequent permanent transfer of the collection (or a part thereof) to another repository.

s 79.6 Methods to secure curatorial services.

(a) Federal agencies may secure curatorial services using a variety of methods, subject to Federal procurement and property management statutes, regulations, and any agency-specific statutes and regulations on the management of museum collections. Methods that may be used by Federal agencies to secure curatorial services include, but are not limited to:

- (1) Placing the collection in a repository that is owned, leased or otherwise operated by the Federal agency;
- (2) Entering into a contract or purchase order with a repository for curatorial services;
- (3) Entering into a cooperative agreement, a memorandum of understanding, a memorandum of agreement or other agreement, as appropriate, with a State, local or Indian tribal repository, a university, museum or other scientific or educational institution that operates or manages a repository, for curatorial services;
- (4) Entering an interagency agreement with another Federal agency for curatorial services;
- (5) Transferring the collection to another Federal agency for preservation; and
- (6) For archeological activities permitted on public or Indian lands under the Archaeological Resources Protection Act (16 U.S.C. 470 aa-mm), the Antiquities Act (16 U.S.C. 431-433) or other authority, requiring the archeological permittee to provide for curatorial services as a condition to the issuance of the archeological permit.

(b) Guidelines for selecting a repository. (1) When possible, the collection should be deposited in a repository that:

- (i) Is in the State of origin;
- (ii) Stores and maintains other collections from the same site or project location; or
- (iii) Houses collections from a similar geographic region or cultural area.

(2) The collection should not be subdivided and stored at more than a single repository unless such subdivision is necessary to meet special storage, conservation or research needs.

(3) Except when non-federally-owned material remains are retained and disposed of by the owner, material remains and associated records should be deposited in the same repository to maintain the integrity and research value of the collection.

(c) Sources for technical assistance. The Federal Agency Official should consult with persons having expertise in the management and preservation of collections prior to preparing a scope of work or a request for proposals for curatorial services. This will help ensure that the resulting contract, memorandum, agreement or other written instrument meets the needs of the collection, including any special needs in regard to any religious remains. It also will aid the Federal Agency Official in evaluating the qualifications and appropriateness of a repository, and in determining whether the repository has the capability to provide adequate long-term curatorial services for a collection. Persons, agencies, institutions and organizations that may be able to provide technical assistance include, but are not limited to the:

- (1) Federal agency's Historic Preservation Officer;
- (2) State Historic Preservation Officer;
- (3) Tribal Historic Preservation Officer;
- (4) State Archeologist;

- (5) Curators, collections managers, conservators, archivists, archeologists, historians and anthropologists in Federal and State Government agencies and Indian tribal museum;
- (6) Indian tribal elders and religious leaders;
- (7) Smithsonian Institution;
- (8) American Association of Museums; and
- (9) National Park Service.

s 79.7 Methods to fund curatorial services.

A variety of methods are used by Federal agencies to ensure that sufficient funds are available for adequate, long-term care and maintenance of collections. Those methods include, but are not limited to, the following:

(a) Federal agencies may fund a variety of curatorial activities using monies appropriated annually by the U.S. Congress, subject to any specific statutory authorities or limitations applicable to a particular agency. As appropriate, curatorial activities that may be funded by Federal agencies include, but are not limited to:

(1) Purchasing, constructing, leasing, renovating, upgrading, expanding, operating, and maintaining a repository that has the capability to provide adequate long-term curatorial services as set forth in s 79.9 of this part;

(2) Entering into and maintaining on a cost-reimbursable or cost-sharing basis a contract, memorandum, agreement, or other appropriate written instrument with a repository that has the capability to provide adequate long-term curatorial services as set forth in s 79.9 of this part;

(3) As authorized under section 110(g) of the National Historic Preservation Act (16 U.S.C. 470h-2), reimbursing a grantee for curatorial costs paid by the grantee as a part of the grant project;

(4) As authorized under section 110(g) of the National Historic Preservation Act (16 U.S.C. 470h-2), reimbursing a State for curatorial costs paid by the State agency to carry out the historic preservation responsibilities of the Federal agency;

(5) Conducting inspections and inventories in accordance with s 79.11 of this part; and

(6) When a repository that is housing and maintaining a collection can no longer provide adequate long-term curatorial services, as set forth in s 79.9 of this part, either:

(i) Providing such funds or services as may be agreed upon pursuant to s 79.5(a)(1) of this part to assist the repository in eliminating the deficiencies; or

(ii) Removing the collection from the repository and depositing it in another repository that can provide curatorial services in accordance with the regulations in this part.

(b) As authorized under section 110(g) of the National Historic Preservation Act (16 U.S.C. 470h-2) and section 208(2) of the National Historic Preservation Act Amendments (16 U.S.C. 469c-2), for federally licensed or permitted projects or programs, Federal agencies may charge licensees and permittees reasonable costs for curatorial activities associated with identification, surveys, evaluation and data recovery as a condition to the issuance of a Federal license or permit.

(c) Federal agencies may deposit collections in a repository that agrees to provide curatorial services at no cost to the U.S. Government. This generally occurs when a collection is excavated or removed from public or Indian lands under a research permit issued pursuant to the Antiquities Act (16 U.S.C. 431- 433) or the Archaeological Resources Protection Act (16 U.S.C. 470aa-mm). A repository also may agree to provide curatorial services as a public service or as a means of ensuring direct access to a collection for long-term study and use. Federal agencies should ensure that a repository that agrees to provide curatorial services at no cost to the U.S. Government has sufficient financial resources to support its operations and any needed improvements.

(d) Funds provided to a repository for curatorial services should include costs for initially processing, cataloging and accessioning the collection as well as costs for storing, inspecting, inventorying, maintaining, and conserving the collection on a long-term basis.

(1) Funds to initially process, catalog and accession a collection to be generated during

identification and evaluation surveys should be included in project planning budgets.
(2) Funds to initially process, catalog and accession a collection to be generated during data recovery operations should be included in project mitigation budgets.
(3) Funds to store, inspect, inventory, maintain and conserve a collection on a long-term basis should be included in annual operating budgets.

(e) When the Federal Agency Official determines that data recovery costs may exceed the one percent limitation contained in the Archeological and Historic Preservation Act (16 U.S.C. 469c), as authorized under section 208(3) of the National Historic Preservation Act Amendments (16 U.S.C. 469c-2), the limitation may be waived, in appropriate cases, after the Federal Agency Official has:

- (1) Obtained the concurrence of the Secretary of the U.S. Department of the Interior by sending a written request to the Departmental Consulting Archeologist, National Park Service, P.O. Box 37127, Washington, DC 20013- 7127; and
- (2) Notified the Committee on Energy and Natural Resources of the U.S. Senate and the Committee on Interior and Insular Affairs of the U.S. House of Representatives.

s 79.8 Terms and conditions to include in contracts, memoranda and agreements for curatorial services.

The Federal Agency Official shall ensure that any contract, memorandum, agreement or other appropriate written instrument for curatorial services that is entered into by or on behalf of that Official, a Repository Official and any other appropriate party contains the following:

- (a) A statement that identifies the collection or group of collections to be covered and any other U.S. Government-owned personal property to be furnished to the repository;
- (b) A statement that identifies who owns and has jurisdiction over the collection;
- (c) A statement of work to be performed by the repository;
- (d) A statement of the responsibilities of the Federal agency and any other appropriate party;
- (e) When the collection is from Indian lands:
 - (1) A statement that the Indian landowner and the Indian tribe having jurisdiction over the lands consent to the disposition; and
 - (2) Such terms and conditions as may be requested by the Indian landowner and the Indian tribe having jurisdiction over the lands;
- (f) When the collection is from a site on public lands that the Federal Agency Official has determined is of religious or cultural importance to any Indian tribe having aboriginal or historic ties to such lands, such terms and conditions as may have been developed pursuant to s -.7 of uniform regulations 43 CFR part 7, 36 CFR part 296, 18 CFR part 1312, and 32 CFR part 229;
- (g) The term of the contract, memorandum or agreement; and procedures for modification, suspension, extension, and termination;
- (h) A statement of costs associated with the contract, memorandum or agreement; the funds or services to be provided by the repository, the Federal agency and any other appropriate party; and the schedule for any payments;
- (i) Any special procedures and restrictions for handling, storing, inspecting, inventorying, cleaning, conserving, and exhibiting the collection;
- (j) Instructions and any terms and conditions for making the collection available for scientific, educational and religious uses, including procedures and criteria to be used by the Repository Official to review, approve or deny, and document actions taken in response to requests for study, laboratory analysis, loan, exhibition, use in religious rituals or spiritual activities, and other uses. When the Repository Official to approve consumptive uses, this should be specified; otherwise, the Federal Agency Official should review and approve consumptive uses. When the repository's existing operating procedures and criteria for evaluating requests to use collections are consistent with the regulations in this part, they may be used, after making any necessary modifications, in lieu of developing new ones;

- (k) Instructions for restricting access to information relating to the nature, location and character of the prehistoric or historic resource from which the material remains are excavated or removed;
- (l) A statement that copies of any publications resulting from study of the collection are to be provided to the Federal Agency Official and, when the collection is from Indian lands, to the Tribal Official and the Tribal Historic Preservation Officer, if any, of the Indian tribe that owns or has jurisdiction over such lands;
- (m) A statement that specifies the frequency and methods for conducting and documenting the inspections and inventories stipulated in s 79.11 of this part;
- (n) A statement that the Repository Official shall redirect any request for transfer or repatriation of a federally-owned collection (or any part thereof) to the Federal Agency Official, and redirect any request for transfer or repatriation of a federally administered collection (or any part thereof) to the Federal Agency Official and the owner;
- (o) A statement that the Repository Official shall not transfer, repatriate or discard a federally-owned collection (or any part thereof) without the written permission of the Federal Agency Official, and not transfer, repatriate or discard a federally administered collection (or any part thereof) without the written permission of the Federal Agency Official and the owner;
- (p) A statement that the Repository Official shall not sell the collection; and
- (q) A statement that the repository shall provide curatorial services in accordance with the regulations in this part.

s 79.9 Standards to determine when a repository possesses the capability to provide adequate long-term curatorial services.

The Federal Agency Official shall determine that a repository has the capability to provide adequate long-term curatorial services when the repository is able to:

- (a) Accession, label, catalog, store, maintain, inventory and conserve the particular collection on a long-term basis using professional museum and archival practices; and
- (b) Comply with the following, as appropriate to the nature and consent of the collection:
 - (1) Maintain complete and accurate records of the collection, including:
 - (i) Records on acquisitions;
 - (ii) Catalog and artifact inventory lists;
 - (iii) Descriptive information, including field notes, site forms and reports;
 - (iv) Photographs, negatives and slides;
 - (v) Locational information, including maps;
 - (vi) Information on the condition of the collection, including any completed conservation treatments;
 - (vii) Approved loans and other uses;
 - (viii) Inventory and inspection records, including any environmental monitoring records;
 - (ix) Records on lost, deteriorated, damaged or destroyed Government property; and
 - (x) Records on any deaccessions and subsequent transfers, repatriations or discards, as approved by the Federal Agency Official;
 - (2) Dedicate the requisite facilities, equipment and space in the physical plant to property store, study and conserve the collection. Space used for storage, study, conservation and, if exhibited, any exhibition must not be used for non-curatorial purposes that would endanger or damage the collection;
 - (3) Keep the collection under physically secure conditions within storage, laboratory, study and any exhibition areas by:
 - (i) Having the physical plant meet local electrical, fire, building, health and safety codes;
 - (ii) Having an appropriate and operational fire detection and suppression system;
 - (iii) Having an appropriate and operational intrusion detection and deterrent system;

- (iv) Having an adequate emergency management plan that establishes procedures for responding to fires, floods, natural disasters, civil unrest, acts of violence, structural failures and failures of mechanical systems within the physical plant;
 - (v) Providing fragile or valuable items in a collection with additional security such as locking the items in a safe, vault or museum specimen cabinet, as appropriate;
 - (vi) Limiting and controlling access to keys, the collection and the physical plant; and
 - (vii) Inspecting the physical plant in accordance with s 79.11 of this part for possible security weaknesses and environmental control problems, and taking necessary actions to maintain the integrity of the collection;
- (4) Require staff and any consultants who are responsible for managing and preserving the collection to be qualified museum professionals;
 - (5) Handle, store, clean, conserve and, if exhibited, exhibit the collection in a manner that:
 - (i) Is appropriate to the nature of the material remains and associated records;
 - (ii) Protects them from breakage and possible deterioration from adverse temperature and relative humidity, visible light, ultraviolet radiation, dust, soot, gases, mold, fungus, insects, rodents and general neglect; and
 - (iii) Preserves data that may be studied in future laboratory analyses. When material remains in a collection are to be treated with chemical solutions or preservatives that will permanently alter the remains, when possible, retain untreated representative samples of each affected artifact type, environmental specimen or other category of material remains to be treated. Untreated samples should not be stabilized or conserved beyond dry brushing;
 - (6) Store site forms, field notes, artifacts inventory lists, computer disks and tapes, catalog forms and a copy of the final report in a manner that will protect them from theft and fire such as:
 - (i) Storing the records in an appropriate insulated, fire resistant, locking cabinet, safe, vault or other container, or in a location with a fire suppression system;
 - (ii) Storing a duplicate set of records in a separate location; or
 - (iii) Ensuring that records are maintained and accessible through another party. For example, copies of final reports and site forms frequently are maintained by the State Historic Preservation Officer, the State Archeologist or the State museum or university. The Tribal Historic Preservation Officer and Indian tribal museum ordinarily maintain records on collections recovered from sites located on Indian lands. The National Technical Information Service and the Defense Technical Information Service maintain copies of final reports that have been deposited by Federal agencies. The National Archeological Database maintains summary information on archeological reports and projects, including information on the location of those reports.
 - (7) Inspect the collection in accordance with s 79.11 of this part for possible deterioration and damage, and perform only those actions as are absolutely necessary to stabilize the collection and rid it of any agents of deterioration;
 - (8) Conduct inventories in accordance with s 79.11 of this part to verify the location of the material remains, associated records and any other Federal personal property that is furnished to the repository; and
 - (9) Provide access to the collection in accordance with s 79.10 of this part.

s 79.10 Use of collections.

- (a) The Federal Agency Official shall ensure that the Repository Official makes the collection available for scientific, educational and religious uses, subject to such terms and conditions as are necessary to protect and preserve the condition, research potential, religious or sacred importance, and uniqueness of the collection.
- (b) Scientific and educational uses. A collection shall be made available to qualified professionals for study, loan and use for such purposes as in-house and traveling exhibits, teaching, public interpretation, scientific analysis and scholarly research. Qualified professionals would include, but not be limited to, curators, conservators, collection managers, exhibitors, researchers,

scholars, archeological contractors and educators. Students may use a collection when under the direction of a qualified professional. Any resulting exhibits and publications shall acknowledge the repository as the curatorial facility and the Federal agency as the owner or administrator, as appropriate. When the collection is from Indian lands and the Indian landowner and the Indian tribe having jurisdiction over the lands wish to be identified, those individuals and the Indian tribe shall also be acknowledged. Copies of any resulting publications shall be provided to the Repository Official and the Federal Agency Official. When Indian lands are involved, copies of such publications shall also be provided to the Tribal Official and the Tribal Historic Preservation Officer, if any, of the Indian tribe that owns or has jurisdiction over such lands.

(c) Religious uses. Religious remains in a collection shall be made available to persons for use in religious rituals or spiritual activities. Religious remains generally are of interest to medicine men and women, and other religious practitioners and persons from Indian tribes, Alaskan Native corporations, Native Hawaiians, and other indigenous and immigrant ethnic, social and religious groups that have aboriginal or historic ties to the lands from which the remains are recovered, and have traditionally used the remains or class of remains in religious rituals or spiritual activities.

(d) Terms and conditions. (1) In accordance with section 9 of the Archaeological Resources Protection Act (16 U.S.C. 470hh) and section 304 of the National Historic Preservation Act (16 U.S.C. 470 w-3), the Federal Agency Official shall restrict access to associated records that contain information relating to the nature, location or character of a prehistoric or historic resource unless the Federal Agency Official determines that such disclosure would not create a risk of harm, theft or destruction to the resource or to the area or place where the resource is located.

(2) Section -.18(a)(2) of uniform regulations 43 CFR part 7, 36 CFR part 296, 18 CFR part 1312, and 32 CFR part 229 sets forth procedures whereby information relating to the nature, location or character of a prehistoric or historic resource may be made available to the Governor of any State. The Federal Agency Official may make information available to other persons who, following the procedures in s -.18(a)(2) of the referenced uniform regulations, demonstrate that the disclosure will not create a risk of harm, theft or destruction to the resource or to the area or place where the resource is located. Other persons generally would include, but not be limited to, archeological contractors, researchers, scholars, tribal representatives, Federal, State and local agency personnel, and other persons who are studying the resource or class or resources.

(3) When a collection is from Indian lands, the Federal Agency Official shall place such terms and conditions as may be requested by the Indian landowner and the Indian tribe having jurisdiction over the lands on:

- (i) Scientific, educational or religious uses of material remains; and
- (ii) Access to associated records that contain information relating to the nature, location or character of the resource.

(4) When a collection is from a site on public lands that the Federal Agency Official has determined is of religious or cultural importance to any Indian tribe having aboriginal or historic ties to such lands, the Federal Agency Official shall place such terms and conditions as may have been developed pursuant to s -.7 of uniform regulations 43 CFR part 7, 36 CFR part 296, 18 CFR part 1312, and 32 CFR part 229 on:

- (i) Scientific, educational or religious uses of material remains; and
- (ii) Access to associated records that contain information relating to the nature, location or character of the resource.

(5) The Federal Agency Official shall not allow uses that would alter, damage or destroy an object in a collection unless the Federal Agency Official determines that such use is necessary for scientific studies or public interpretation, and the potential gain in scientific or interpretive information outweighs the potential loss of the object. When possible, such use should be limited to unprovenienced, nonunique, nonfragile objects, or to a sample of objects drawn from a larger collection of similar objects.

(e) No collection (or a part thereof) shall be loaned to any person without a written agreement between the Repository Official and the borrower that specifies the terms and conditions of the loan. Appendix C to the regulations in this part contains an example of a short-term loan agreement for a federally-owned collection. At a minimum, a loan agreement shall specify:

- (1) The collection or object being loaned;
 - (2) The purpose of the loan;
 - (3) The length of the loan;
 - (4) Any restrictions on scientific, educational or religious uses, including whether any object may be altered, damaged or destroyed;
 - (5) Except as provided in paragraph (e)(4) of this section, that the borrower shall handle the collection or object being borrowed during the term of the loan in accordance with this part so as not to damage or reduce its scientific, educational, religious or cultural value; and
 - (6) Any requirements for insuring the collection or object being borrowed for any loss, damage or destruction during transit and while in the borrower's possession.
- (f) The Federal Agency Official shall ensure that the Repository Official maintains administrative records that document approved scientific, educational and religious uses of the collection.
- (g) The Repository Official may charge persons who study, borrow or use a collection (or a part thereof) reasonable fees to cover costs for handling, packing, shipping and insuring material remains, for photocopying associated records, and for other related incidental costs.

s 79.11 Conduct of inspections and inventories.

(a) The inspections and inventories specified in this section shall be conducted periodically in accordance with the Federal Property and Administrative Services Act (40 U.S.C. 484), its implementing regulation (41 CFR part 101), any agency-specific regulations on the management of Federal property, and any agency-specific statutes and regulations on the management of museum collections.

(b) Consistent with paragraph (a) of this section, the Federal Agency Official shall ensure that the Repository Official:

- (1) Provides the Federal Agency Official and, when the collection is from Indian lands, the Indian landowner and the Tribal Official of the Indian tribe that has jurisdiction over the lands with a copy of the catalog list of the contents of the collection received and accessioned by the repository;
- (2) Provides the Federal Agency Official will a list of any other U.S. Government-owned personal property received by the repository;
- (3) Periodically inspects the physical plant for the purpose of monitoring the physical security and environmental control measures;
- (4) Periodically inspects the collection for the purposes of assessing the condition of the material remains and associated records, and of monitoring those remains and records for possible deterioration and damage;
- (5) Periodically inventories the collection by accession, lot or catalog record for the purpose of verifying the location of the material remains and associated records;
- (6) Periodically inventories any other U.S. Government-owned personal property in the possession of the repository;
- (7) Has qualified museum professionals conduct the inspections and inventories;
- (8) Following each inspection and inventory, prepares and provides the Federal Agency Official with a written report of the results of the inspection and inventory, including the status of the collection, treatments completed and recommendations for additional treatments. When the collection is from Indian lands, the Indian landowner and the Tribal Official of the Indian tribe that has jurisdiction over the lands shall also be provided with a copy of the report;
- (9) Within five (5) days of the discovery of any loss or theft of, deterioration and damage to, or destruction of the collection (or a part thereof) or any other U.S. Government-owned personal

property, prepares and provides the Federal Agency Official with a written notification of the circumstances surrounding the loss, theft, deterioration, damage or destruction. When the collection is from Indian lands, the Indian landowner and the Tribal Official and the Indian tribe that has jurisdiction over the lands shall also be provided with a copy of the notification; and (10) Makes the repository, the collection and any other U.S. Government-owned personal property available for periodic inspection by the:

(i) Federal Agency Official;

(ii) When the collection is from Indian lands, the Indian landowner and the Tribal Official of the Indian tribe that has jurisdiction over the lands; and

(iii) When the collection contains religious remains, the Indian tribal elders, religious leaders, and other officials representing the Indian tribe or other group for which the remains have religious or sacred importance.

(c) Consistent with paragraph (a) of this section, the Federal Agency Official shall have qualified Federal agency professionals:

(1) Investigate reports of a lost, stolen, deteriorated, damaged or destroyed collection (or a part thereof) or any other U.S. Government-owned personal property; and

(2) Periodically inspect the repository, the collection and any other U.S. Government-owned personal property for the purposes of:

(i) Determining whether the repository is in compliance with the minimum standards set forth in s 79.9 of this part; and

(ii) Evaluating the performance of the repository in providing curatorial services under any contract, memorandum, agreement or other appropriate written instrument.

(d) The frequency and methods for conducting and documenting inspections and inventories stipulated in this section shall be mutually agreed upon, in writing, by the Federal Agency Official and the Repository Official, and be appropriate to the nature and content of the collection:

(1) Collections from Indian lands shall be inspected and inventoried in accordance with such terms and conditions as may be requested by the Indian landowner and the Indian tribe having jurisdiction over the lands.

(2) Religious remains in collections from public lands shall be inspected and inventoried in accordance with such terms and conditions as may have been developed pursuant to s -.7 of uniform regulations 43 CFR part 7, 36 CFR part 296, 18 CFR part 1312, and 32 CFR part 229.

(3) Material remains and records of a fragile or perishable nature should be inspected for deterioration and damage on a more frequent basis than lithic or more stable remains or records.

(4) Because frequent handling will accelerate the breakdown of fragile materials, material remains and records should be viewed but handled as little as possible during inspections and inventories.

(5) Material remains and records of a valuable nature should be inventoried on a more frequent basis than other less valuable remains or records.

(6) Persons such as those listed in s 79.6(c) of this part who have expertise in the management and preservation of similar collections should be able to provide advice to the Federal Agency Official concerning the appropriate frequency and methods for conducting inspections and inventories of a particular collection.

(e) Consistent with the Single Audit Act (31 U.S.C. 75), when two or more Federal agencies deposit collections in the same repository, the Federal Agency Officials should enter into an interagency agreement for the purposes of:

(1) Requesting the Repository Official to coordinate the inspections and inventories, stipulated in paragraph (b) of this section, for each of the collections;

(2) Designating one or more qualified Federal agency professionals to:

(i) Conduct inspections, stipulated in paragraph (c)(2) of this section, on behalf of the other agencies; and

(ii) Following each inspection, prepare and distribute to each Federal Agency Official a written report of findings, including an evaluation of performance and recommendations to correct any deficiencies and resolve any problems that were identified. When the collection is from Indian lands, the Indian landowner and the Tribal Official of the Indian tribe that has jurisdiction over the lands shall also be provided with a copy of the report; and

(3) Ensuring consistency in the conduct of inspections and inventories conducted pursuant to this section.

Appendix A to Part 79--Example of a Deed of Gift

DEED OF GIFT TO THE

(Name of the Federal agency)

Whereas, the (name of the Federal agency), hereinafter called the Recipient, is dedicated to the preservation and protection of artifacts, specimens and associated records that are generated in connection with its projects and programs;

Whereas, certain artifacts and specimens, listed in Attachment A to this Deed of Gift, were recovered from the (name of the prehistoric or historic resource) site in connection with the Recipient's (name of the Recipient's project) project;

Whereas, the (name of the prehistoric or historic resource) site is located on lands to which title is held by (name of the donor), hereinafter called the Donor, and that the Donor holds free and clear title to the artifacts and specimens; and

Whereas, the Donor is desirous of donating the artifacts and specimens to the Recipient to ensure their continued preservation and protection;

Now therefore, the Donor does hereby unconditionally donate to the Recipient, for unrestricted use, the artifacts and specimens listed in Attachment A to this Deed of Gift; and The Recipient hereby gratefully acknowledges the receipt of the artifacts and specimens.

Signed: (signature of the Donor)

Date: (date)

Signed: (signature of the Federal Agency Official)

Date: (date)

Attachment A: Inventory of Artifacts and Specimens.

Appendix B to Part 79--Example of a Memorandum of Understanding for Curatorial Services for a Federally-Owned Collection

MEMORANDUM OF UNDERSTANDING FOR CURATORIAL SERVICES BETWEEN

THE (Name of the Federal agency)

AND THE (Name of the Repository)

This Memorandum of Understanding is entered into this (day) day of (month and year), between the United States of America, acting by and through the (name of the Federal agency), hereinafter called the Depositor, and the (name of the Repository), hereinafter called the Repository, in the State of (name of the State).

The Parties do witnesseth that,

Whereas, the Depositor has the responsibility under Federal law to preserve for future use certain collections of archeological artifacts, specimens and associated records, herein called the Collection, listed in Attachment A which is attached hereto and made a part hereof, and is desirous of obtaining curatorial services; and

Whereas, the Repository is desirous of obtaining, housing and maintaining the Collection, and recognizes the benefits which will accrue to it, the public and scientific interests by housing and maintaining the Collection for study and other educational purposes; and

Whereas, the Parties hereto recognize the Federal Government's continued ownership and control over the Collection and any other U.S. Government-owned personal property, listed in

Attachment B which is attached hereto and made a part hereof, provided to the Repository, and the Federal Government's responsibility to ensure that the Collection is suitably managed and preserved for the public good; and

Whereas, the Parties hereto recognize the mutual benefits to be derived by having the Collection suitably housed and maintained by the Repository;

Now therefore, the Parties do mutually agree as follows:

1. The Repository shall:

a. Provide for the professional care and management of the Collection from the (names of the prehistoric and historic resources) sites, assigned (list site numbers) site numbers. The collections were recovered in connection with the (name of the Federal or federally-authorized project) project, located in (name of the nearest city or town), (name of the county) county, in the State of (name of the State).

b. Perform all work necessary to protect the Collection in accordance with the regulation 36 CFR part 79 for the curation of federally-owned and administered archeological collections and the terms and conditions stipulated in Attachment C to this Memorandum.

c. Assign as the Curator, the Collections Manager and the Conservator having responsibility for the work under this Memorandum, persons who are qualified museum professionals and whose expertise is appropriate to the nature and content of the Collection.

d. Begin all work on or about (month, date and year) and continue for a period of (number of years) years or until sooner terminated or revoked in accordance with the terms set forth herein.

e. Provide and maintain a repository facility having requisite equipment, space and adequate safeguards for the physical security and controlled environment for the Collection and any other U.S. Government-owned personal property in the possession of the Repository.

f. Not in any way adversely alter or deface any of the Collection except as may be absolutely necessary in the course of stabilization, conservation, scientific study, analysis and research. Any activity that will involve the intentional destruction of any of the Collection must be approved in advance and in writing by the Depositor.

g. Annually inspect the facilities, the Collection and any other U.S. Government-owned personal property. Every (number of years) years inventory the Collection and any other U.S. Government-owned personal property. Perform only those conservation treatments as are absolutely necessary to ensure the physical stability and integrity of the Collection, and report the results of inventories, inspections and treatments to the Depositor.

h. Within five (5) days of discovery, report all instances of and circumstances surrounding loss of, deterioration and damage to, or destruction of the Collection and any other U.S. Government-owned personal property to the Depositor, and those actions taken to stabilize the Collection and to correct any deficiencies in the physical plant or operating procedures that may have contributed to the loss, deterioration, damage or destruction. Any actions that will involve the repair and restoration of any of the Collection and any other U.S. Government-owned personal property must be approved in advance and in writing by the Depositor.

i. Review and approve or deny requests for access to or short-term loan of the Collection (or a part thereof) for scientific, educational or religious uses in accordance with the regulation 36 CFR part 79 for the curation of federally- owned and administered archeological collections and the terms and conditions stipulated in Attachment C of this Memorandum. In addition, refer requests for consumptive uses of the Collection (or a part thereof) to the Depositor for approval or denial.

j. Not mortgage, pledge, assign, repatriate, transfer, exchange, give, sublet, discard or part with possession of any of the Collection or any other U.S. Government-owned personal property in any manner to any third party either directly or in-directly without the prior written permission of the Depositor, and redirect any such request to the Depositor for response. In addition, not take any action whereby any of the Collection or any other U.S. Government- owned personal property shall or may be encumbered, seized, taken in execution, sold, attached, lost, stolen, destroyed or damaged.

2. The Depositor shall:
 - a. On or about (month, date and year), deliver or cause to be delivered to the Repository the Collection, as described in Attachment A, and any other U.S. Government-owned personal property, as described in Attachment B.
 - b. Assign as the Depositor's Representative having full authority with regard to this Memorandum, a person who meets pertinent professional qualifications.
 - c. Every (number of years) years, jointly with the Repository's designated representative, have the Depositor's Representative inspect and inventory the Collection and any other U.S. Government-owned personal property, and inspect the repository facility.
 - d. Review and approve or deny requests for consumptively using the Collection (or a part thereof).
3. Removal of all or any portion of the Collection from the premises of the Repository for scientific, educational or religious purposes may be allowed only in accordance with the regulation 36 CFR part 79 for the curation of federally-owned and administered archeological collections; the terms and conditions stipulated in Attachment C to this Memorandum; any conditions for handling, packaging and transporting the Collection; and other conditions that may be specified by the Repository to prevent breakage, deterioration and contamination.
4. The Collection or portions thereof may be exhibited, photographed or otherwise reproduced and studied in accordance with the terms and conditions stipulated in Attachment C to this Memorandum. All exhibits, reproductions and studies shall credit the Depositor, and read as follows: "Courtesy of the (name of the Federal agency)." The Repository agrees to provide the Depositor with copies of any resulting publications.
5. The Repository shall maintain complete and accurate records of the Collection and any other U.S. Government-owned personal property, including information on the study, use, loan and location of said Collection which has been removed from the premises of the Repository.
6. Upon execution by both parties, this Memorandum of Understanding shall be effective on this (day) day of (month and year), and shall remain in effect for (number of years) years, at which time it will be reviewed, revised, as necessary, and reaffirmed or terminated. This Memorandum may be revised or extended by mutual consent of both parties, or by issuance of a written amendment signed and dated by both parties. Either party may terminate this Memorandum by providing 90 days written notice. Upon termination, the Repository shall return such Collection and any other U.S. Government-owned personal property to the destination directed by the Depositor and in such manner to preclude breakage, loss, deterioration and contamination during handling, packaging and shipping, and in accordance with other conditions specified in writing by the Depositor. If the Repository terminates, or is in default of, this Memorandum, the Repository shall fund the packaging and transportation costs. If the Depositor terminates this Memorandum, the Depositor shall fund the packaging and transportation costs.
7. Title to the Collection being cared for and maintained under this Memorandum lies with the Federal Government.

In witness whereof, the Parties hereto have executed this Memorandum.

Signed: (signature of the Federal Agency Official)

Date: (date)

Signed: (signature of the Repository Official)

Date: (date)

Attachment A: Inventory of the Collection

Attachment B: Inventory of any other U.S. Government-owned Personal Property

Attachment C: Terms and Conditions Required by the Depositor

Appendix C to Part 79--Example of a Short-Term Loan Agreement for a Federally- Owned Collection

SHORT-TERM LOAN AGREEMENT BETWEEN THE (Name of the Repository)

AND THE (Name of the Borrower)

The (name of the Repository), hereinafter called the Repository, agrees to loan to (name of the Borrower), hereinafter called the Borrower, certain artifacts, specimens and associated records, listed in Attachment A, which were collected from the (name of the prehistoric or historic resource) site which is assigned (list site number) site number. The collection was recovered in connection with the (name of the Federal or federally authorized project) project, located in (name of the nearest city or town), (name of the county) county in the State of (name of the State). The Collection is the property of the U.S. Government.

The artifacts, specimens and associated records are being loaned for the purpose of (cite the purpose of the loan), beginning on (month, day and year) and ending on (month, day and year). During the term of the loan, the Borrower agrees to handle, package and ship or transport the Collection in a manner that protects it from breakage, loss, deterioration and contamination, in conformance with the regulation 36 CFR part 79 for the curation of federally-owned and administered archeological collections and the terms and conditions stipulated in Attachment B to this loan agreement.

The Borrower agrees to assume full responsibility for insuring the Collection or for providing funds for the repair or replacement of objects that are damaged or lost during transit and while in the Borrower's possession. Within five (5) days of discovery, the Borrower will notify the Repository of instances and circumstances surrounding any loss of, deterioration and damage to, or destruction of the Collection and will, at the direction of the Repository, take steps to conserve damaged materials.

The Borrower agrees to acknowledge and credit the U.S. Government and the Repository in any exhibits or publications resulting from the loan. The credit line shall read as follows: "Courtesy of the (names of the Federal agency and the Repository)." The Borrower agrees to provide the Repository and the (name of the Federal agency) with copies of any resulting publications. Upon termination of this agreement, the Borrower agrees to properly package and ship or transport the Collection to the Repository.

Either party may terminate this agreement, effective not less than (number of days) days after receipt by the other party of written notice, without further liability to either party.
Signed: (signature of the Repository Official)

Date: (date)

Signed: (signature of the Borrower)

Date: (date)

Attachment A: Inventory of the Objects being Loaned.

Attachment B: Terms and Conditions of the Loan.

§ 469. Preservation of historical and archeological data threatened by dam construction or alterations of terrain

It is the purpose of sections 469 to 469c-1 of this title to further the policy set forth in sections 461 to 467 of this title, by specifically providing for the preservation of historical and archeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of (1) flooding, the building of access roads, the erection of workmen's communities, the relocation of railroads and highways, and other alterations of the terrain caused by the construction of a dam by any agency of the United States, or by any private person or corporation holding a license issued by any such agency or (2) any alteration of the terrain caused as a result of any Federal construction project or federally licensed activity or program.

§ 469a. Notice of dam construction to be given Secretary of the Interior by United States agencies

Before any agency of the United States shall undertake the construction of a dam, or issue a license to any private individual or corporation for the construction of a dam, it shall give written notice to the Secretary of the Interior (hereafter referred to as the Secretary) setting forth the site of the proposed dam and the approximate area to be flooded and otherwise changed if such construction is undertaken: Provided, That with respect to any flood water retarding dam which provides less than five thousand acre-feet of detention capacity and with respect to any other type of dam which creates a reservoir of less than forty surface acres the provisions of this section shall apply only when the constructing agency, in its preliminary surveys, finds, or is presented with evidence that historical or archeological materials exist or may be present in the proposed reservoir area.

§ 469a-1. Threat of irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data by Federal construction projects; notice to Secretary of the Interior; survey; recovery, preservation, and protection of data

- (a) Notification and request for preservation of data

Whenever any Federal agency finds, or is notified, in writing, by an appropriate historical or archeological authority, that its activities in connection with any Federal construction project or federally licensed project, activity, or program may cause irreparable loss or destruction of significant scientific, prehistorical, historical, or archeological data, such agency shall notify the Secretary, in writing, and shall provide the Secretary with appropriate information concerning the project, program, or activity. Such agency may request the Secretary to undertake the recovery, protection, and preservation of such data (including preliminary survey, or other investigation as needed, and analysis and publication of the reports resulting from such investigation), or it may, with funds appropriated for such project, program, or activity, undertake such activities. Copies of reports of any investigations made pursuant to this section shall be submitted to the Secretary, who shall make them available to the public for inspection and review.

- (b) Survey of site; preservation of data; compensation

Whenever any Federal agency provides financial assistance by loan, grant, or otherwise to any private person, association, or public entity, the Secretary, if he determines that

significant scientific, prehistorical, historical, or archeological data might be irrevocably lost or destroyed, may with funds appropriated expressly for this purpose conduct, with the consent of all persons, associations, or public entities having a legal interest in the property involved, a survey of the affected site and undertake the recovery, protection, and preservation of such data (including analysis and publication). The Secretary shall, unless otherwise mutually agreed to in writing, compensate any person, association, or public entity damaged as a result of delays in construction or as a result of the temporary loss of the use of private or any nonfederally owned lands.

§ 469a-2. Survey by Secretary of the Interior; recovery and preservation of data; compensation for delays in construction and for temporary loss of use of land

- (a) Survey conducted; preservation of data

The Secretary, upon notification, in writing, by any Federal or State agency or appropriate historical or archeological authority that scientific, prehistorical, historical, or archeological data is being or may be irrevocably lost or destroyed by any Federal or federally assisted or licensed project, activity, or program, shall, if he determines that such data is significant and is being or may be irrevocably lost or destroyed and after reasonable notice to the agency responsible for funding or licensing such project, activity, or program, conduct or cause to be conducted a survey and other investigation of the areas which are or may be affected and recover and preserve such data (including analysis and publication) which, in his opinion, are not being, but should be, recovered and preserved in the public interest.

- (b) Emergency projects

No survey or recovery work shall be required pursuant to this section which, in the determination of the head of the responsible agency, would impede Federal or federally assisted or licensed projects or activities undertaken in connection with any emergency, including projects or activities undertaken in anticipation of, or as a result of, a natural disaster.

- (c) Initiation of survey

The Secretary shall initiate the survey or recovery effort within sixty days after notification to him pursuant to subsection (a) of this section or within such time as may be agreed upon with the head of the agency responsible for funding or licensing the project, activity, or program in all other cases.

- (d) Compensation by Secretary

The Secretary shall, unless otherwise mutually agreed to in writing, compensate any person, association, or public entity damaged as a result of delays in construction or as a result of the temporary loss of the use of private or nonfederally owned land.

§ 469a-3. Progress reports by Secretary of the Interior on surveys and work undertaken as result of surveys; disposition of relics and specimens recovered; coordination of survey and recovery activities; annual report

- (a) Progress reports to funding or licensing agency

The Secretary shall keep the agency responsible for funding or licensing the project notified at all times of the progress of any survey made under sections 469 to 469c of this title or of any work undertaken as a result of such survey, in order that there will be as little disruption or delay as possible in the carrying out of the functions of such agency and the survey and recovery programs shall terminate at a time mutually agreed upon by the Secretary and the head of such agency unless extended by mutual agreement.

- (b) Disposition of relics and specimens

The Secretary shall consult with any interested Federal and State agencies, educational and scientific organizations, and private institutions and qualified individuals, with a view to determining the ownership of and the most appropriate repository for any relics and specimens recovered as a result of any work performed as provided for in this section.

- (c) Coordination of activities; annual report

The Secretary shall coordinate all Federal survey and recovery activities authorized under sections 469 to 469c-1 of this title and shall submit an annual report at the end of each fiscal year to the Committee on Natural Resources of the House of Representatives and Committee on Energy and Natural Resources of the Senate indicating the scope and effectiveness of the program, the specific projects surveyed and the results produced, and the costs incurred by the Federal Government as a result thereof.

§ 469b. Administration; contracts or agreements; services of experts, consultants, or organizations; acceptance of funds

In the administration of sections 469 to 469c-1 of this title, the Secretary may -

- (1) enter into contracts or make cooperative agreements with any Federal or State agency, any educational or scientific organization, or any institution, corporation, association, or qualified individual; and
- (2) obtain the services of experts and consultants or organizations thereof in accordance with section 3109 of title 5; and
- (3) accept and utilize funds made available for salvage archeological purposes by any private person or corporation or transferred to him by any Federal agency.

§ 469c. Assistance to Secretary of the Interior by Federal agencies responsible for construction projects; authorization of appropriations

- (a) Assistance of Federal agencies

To carry out the purposes of sections 469 to 469c-1 of this title, any Federal agency responsible for a construction project may assist the Secretary and/or it may transfer to him such funds as may be agreed upon, but not more than 1 per centum of the total amount authorized to be appropriated for such project, except that the 1 per centum limitation of this section shall not apply in the event that the project involves \$50,000 or less: Provided, That the costs of such survey, recovery, analysis, and publication shall be

considered nonreimbursable project costs.

- (b) Authorization of appropriations for preservation of data

For the purposes of section 469a-1(b) of this title, there are authorized to be appropriated such sums as may be necessary, but not more than \$500,000 in fiscal year 1974; \$1,000,000 in fiscal year 1975; \$1,500,000 in fiscal year 1976; \$1,500,000 in fiscal year 1977; \$1,500,000 in fiscal year 1978; \$500,000 in fiscal year 1979; \$1,000,000 in fiscal year 1980; \$1,500,000 in fiscal year 1981; \$1,500,000 in fiscal year 1982; and \$1,500,000 in fiscal year 1983.

- (c) Authorization of appropriations for surveys and investigations

For the purposes of section 469a-2(a) of this title, there are authorized to be appropriated not more than \$2,000,000 in fiscal year 1974; \$2,000,000 in fiscal year 1975; \$3,000,000 in fiscal year 1976; \$3,000,000 in fiscal year 1977; \$3,000,000 in fiscal year 1978; \$3,000,000 in fiscal year 1979; \$3,000,000 in fiscal year 1980; \$3,500,000 in fiscal year 1981; \$3,500,000 in fiscal year 1982; and \$4,000,000 in fiscal year 1983.

- (d) Availability of appropriations

Beginning fiscal year 1979, sums appropriated for purposes of this section shall remain available until expended.

§ 469c-1. "State" defined

As used in sections 469 to 469c-1 of this title, the term "State" includes the several States of the Union, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, and the Commonwealth of the Northern Mariana Islands.

§ 469c-2. Costs for identification, surveys, evaluation and data recovery with respect to historic properties

Notwithstanding section 469c(a) of this title, or any other provision of law to the contrary -

- (1) identification, surveys, and evaluation carried out with respect to historic properties within project areas may be treated for purposes of any law or rule of law as planning costs of the project and not as costs of mitigation;
- (2) reasonable costs for identification, surveys, evaluation, and data recovery carried out with respect to historic properties within project areas may be charged to Federal licensees and permittees as a condition to the issuance of such license or permit; and
- (3) Federal agencies, with the concurrence of the Secretary and after notification of the Committee on Natural Resources of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, are authorized to waive, in appropriate cases, the 1 per centum limitation contained in section 469c(a) of this title.

**AMERICAN INDIAN RELIGIOUS FREEDOM ACT
AMENDMENTS OF 1994**

**108 STAT. 3124
Public Law 103-344
[H.R. 4230]**

Oct 6, 1994 Passed by 103rd Congress

An Act

To amend the American Indian Religious Freedom Act to provide for the traditional use of peyote by Indians for religious purposes, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the "American Indian Religious Freedom Act Amendments of 1994".

SECTION 2. TRADITIONAL INDIAN RELIGIOUS USE OF THE PEYOTE SACRAMENT.

The Act of August 11, 1978 (42 U.S.C. 1996), commonly referred to as the "American Indian Religious Freedom Act", is amended by adding at the end thereof the following new section:

"SECTION 3."

- a. The Congress finds and declares that
 1. for many Indian people, the traditional ceremonial use of the peyote cactus as a religious sacrament has for centuries been integral to a way of life, and significant in perpetuating Indian tribes and cultures;
 2. since 1965, this ceremonial use of peyote by Indians has been protected by Federal regulation;
 3. while at least 28 States have enacted laws which are similar to, or are in conformance with, the Federal regulation which protects the ceremonial use of peyote by Indian religious practitioners, 22 States have not done so, and this lack of uniformity has created hardship for Indian people who participate in such religious ceremonies;
 4. the Supreme Court of the United States, in the case of *Employment Division v. Smith*, 494 U.S. 872 (1990), held that the First Amendment does not protect Indian practitioners who use peyote in Indian religious ceremonies, and also raised uncertainty whether this religious practice would be protected under the compelling State interest standard; and
 5. the lack of adequate and clear legal protection for the religious use of peyote by Indians may serve to stigmatize and marginalize Indian tribes and cultures, and increase the risk that they will be exposed to discriminatory treatment.
- b.
 1. Notwithstanding any other provision of law, the use, possession, or transportation of peyote by an Indian for bona fide traditional ceremonial purposes in connection with

the practice of a traditional Indian religion is lawful, and shall not be prohibited by the United States or any State. No Indian shall be penalized or discriminated against on the basis of such use, possession or transportation, including, but not limited to, denial of otherwise applicable benefits under public assistance programs.

2. This section does not prohibit such reasonable regulation and registration by the Drug Enforcement Administration of those persons who cultivate, harvest, or distribute peyote as may be consistent with the purposes of this Act.
 3. This section does not prohibit application of the provisions of section 481.111 of Vernon's Texas Health and Safety Code Annotated, in effect on the date of enactment of this section, insofar as those provisions pertain to the cultivation, harvest, and distribution of peyote.
 4. Nothing in this section shall prohibit any Federal department or agency, in carrying out its statutory responsibilities and functions, from promulgating regulations establishing reasonable limitations on the use or ingestion of peyote prior to or during the performance of duties by sworn law enforcement officers or personnel directly involved in public transportation or any other safety-sensitive positions where the performance of such duties may be adversely affected by such use or ingestion. Such regulations shall be adopted only after consultation with representatives of traditional Indian religions for which the sacramental use of peyote is integral to their practice. Any regulation promulgated pursuant to this section shall be subject to the balancing test set forth in section 3 of the Religious Freedom Restoration Act (Public Law 103-141; 42 U.S.C. 2000bb-1).
 5. This section shall not be construed as requiring prison authorities to permit, nor shall it be construed to prohibit prison authorities from permitting, access to peyote by Indians while incarcerated within Federal or State prison facilities.
 6. Subject to the provisions of the Religious Freedom Restoration Act (Public Law 103-141; 42 U.S.C. 2000bb-1), this section shall not be construed to prohibit States from enacting or enforcing reasonable traffic safety laws or regulations.
 7. Subject to the provisions of the Religious Freedom Restoration Act (Public Law 103-141; 42 USC 2000bb-1), this section does not prohibit the Secretary of Defense from promulgating regulations establishing reasonable limitations on the use, possession, transportation, or distribution of peyote to promote military readiness, safety, or compliance with international law or laws of other countries. Such regulations shall be adopted only after consultation with representatives of traditional Indian religions for which the sacramental use of peyote is integral to their practice.
- c. For purposes of this section--
1. the term 'Indian' means a member of an Indian tribe;
 2. the term 'Indian tribe' means any tribe, band, nation, pueblo, or other organized group or community of Indians, including any Alaska Native village (as defined in, or established pursuant to, the Alaska Native Claims Settlement Act (43 U.S.C. 1601 et seq.)), which is recognized as eligible for the special programs and services provide by the United States to Indians because of their status as Indians;
 3. the term 'Indian religion' means any religion--
 - A. which is practiced by Indians; and
 - B. the origin and interpretation of which is from within a traditional Indian culture or community; and
 4. the term 'State' means any State of the United States and any political subdivision thereof.
- d. Nothing in this section shall be construed as abrogating, diminishing, or otherwise affecting--
1. the inherent rights of any Indian tribe;

2. the rights, express or implicit, of any Indian tribe which exist under treaties, Executive orders, and laws of the United States;
3. the inherent right of Indians to practice their religions; and
4. the right of Indians to practice their religions under any Federal or State law."

Approved October 6, 1994.

Native American Grave Protection and Repatriation Act (1990)

101ST CONGRESS

HOUSE OF REPRESENTATIVES

REPORT, 2d Session, 101-877

PROVIDING FOR THE PROTECTION OF NATIVE AMERICAN GRAVES, AND FOR OTHER PURPOSES

OCTOBER 15, 1990. Committed to the Committee of the Whole House on the State of the Union and ordered to be printed.

Mr. UDALL, from the Committee on Interior and Insular Affairs, submitted the following

REPORT

[To accompany H.R. 5237] [Including cost estimate of the Congressional Budget Office]

The Committee on Interior and Insular Affairs, to whom was referred the bill (**H.R. 5237**) to provide for the protection of Native American graves, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

The amendment is as follows:

Page 1, line 3, strike all after the enacting clause and insert the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the "**Native American Grave Protection and Repatriation Act**".

SEC. 2. DEFINITIONS.

For purposes of this Act, the term

(1) "**burial site**" means any natural or prepared physical location, whether originally below, on, or above the surface of the earth, into which as a part of the death rite or ceremony of a culture, individual human remains are deposited.

(2) "**cultural affiliation**" means that there is a relationship of shared group identity which can be reasonably traced historically or prehistorically between a present day Indian tribe or Native Hawaiian organization and an identifiable earlier group.

(3) "**cultural items**" means human remains and (A) "**associated funerary objects**" which shall

mean objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, and both the human remains and associated funerary objects are presently in the possession or control of a federal agency or museum, except that other items exclusively made for burial purposes or to contain human remains shall be considered as associated funerary objects. (B) "**unassociated funerary objects**" which shall mean objects that, as a part of the death rite or ceremony of a culture, are reasonably believed to have been placed with individual human remains either at the time of death or later, where the remains are not in the possession or control of the Federal agency or museum and the objects can be identified by a preponderance of the evidence as related to specific individuals or families or to known human remains or, by a preponderance of the evidence, as having been removed from a specific burial site of an individual culturally affiliated with a particular Indian tribe, (C) "**sacred objects**" which shall mean specific ceremonial objects which are needed by traditional Native American religious leaders for the practice of traditional Native American religions by their present day adherents, and (D) "**cultural patrimony**" which shall mean an object having ongoing historical, traditional, or cultural importance central to the Native American group or culture itself, rather than property owned by an individual Native American, and which, therefore, cannot be alienated, appropriated, or conveyed by any individual regardless of whether or not the individual is a member of the Indian tribe or Native Hawaiian organization and such object shall have been considered inalienable by such Native American group at the time the object was separated from such group.

(4) "**Federal agency**" means any department, agency, or instrumentality of the United States and shall include, except as may be inconsistent with the provisions of P.L. 101-185, the Smithsonian Institution.

(5) "**Federal lands**" means any land other than tribal lands which are controlled or owned by the United States.

(6) "**Hui Malama I Na Kupuna O Hawai'i Nei**" means the nonprofit, Native Hawaiian organization incorporated under the laws of the State of Hawaii by that name on April 17, 1989, for the purpose of providing guidance and expertise in decisions dealing with Native Hawaiian cultural issues, particularly burial issues.

(7) "**Indian tribe**" shall have the meaning given such term in section 4 of the Indian Self Determination and Education Assistance Act (25 U.S.C. 450b).

(8) "**museum**" means any institution or State or local government agency (including any institution of higher learning) that receives Federal funds and has possession of, or control over, Native American cultural items, but does not include any Federal agency.

(9) "**Native American**" means of, or relating to, a tribe, people, or culture that is indigenous to the United States.

(10) "**Native Hawaiian**" means any individual who is a descendant of the aboriginal people who, prior to 1778, occupied and exercised sovereignty in the area that now constitutes the State of Hawaii.

(11) "**Native Hawaiian organization**" means any organization which (A) serves and represents the interests of Native Hawaiians, (B) has a primary and stated purpose the provision of services to Native Hawaiians, and (C) has expertise in Native Hawaiian Affairs, and shall include the

Office of Hawaiian Affairs and Hui Malama I Na Kupuna O Hawai'i Nei.

(12) "**Office of Hawaiian Affairs**" means the Office of Hawaiian Affairs established by the constitution of the State of Hawaii.

(13) "**right of possession**" means possession obtained with the voluntary consent of an individual or group that had authority of alienation. The original acquisition of a Native American funerary object, sacred object, or object of cultural patrimony from an Indian tribe or Native Hawaiian organization with the voluntary consent of an individual or group with authority to alienate such object is deemed to give right of possession of that object. The original acquisition of Native American human remains which were excavated, exhumed, or otherwise obtained with full knowledge and consent of the next of kin or the official governing body of the appropriate culturally affiliated Indian tribe or Native Hawaiian organization is deemed to give right of possession to those remains. Nothing in this paragraph shall affect the application of relevant State law to the right of ownership of unassociated funerary objects, sacred objects, or objects of cultural patrimony.

(14) "**Secretary**" means the Secretary of the Interior.

(15) "**tribal land**" means (A) all lands within the exterior boundaries of any Indian reservation; (B) all dependent Indian communities; (C) lands conveyed to, or subject to an interim conveyance of, Native Corporations pursuant to the Alaska Native Claims Settlement Act; and (D) any lands administered for the benefit of Native Hawaiians pursuant to the Hawaiian Homes Commission Act, 1920, and section 4 of Public Law 86-3.

SEC. 3. OWNERSHIP.

(a) **NATIVE AMERICAN HUMAN REMAINS AND OBJECTS.** The ownership or control of Native American cultural items which are excavated or discovered on Federal or tribal lands after the date of enactment of this Act shall be (with priority given in the order listed)

(1) in the case of Native American human remains and associated funerary objects, in the lineal descendants of the Native American; or

(2) in any case in which such lineal descendants cannot be ascertained, and in the case of unassociated funerary objects, sacred objects, and objects of cultural patrimony

(A) in the Indian tribe or Native Hawaiian organization on whose tribal land such objects or remains were discovered;

(B) in the Indian tribe or Native Hawaiian organization which has the closest cultural affiliation with such remains or objects and which, upon notice, states a claim for such remains or objects; or

(C) if the cultural affiliation of the objects cannot be reasonably ascertained and if the objects were discovered on Federal land that is recognized by a final judgement of the Indian Claims Commission as the aboriginal land of some Indian tribe

(1) in the Indian tribe that is recognized as aboriginally occupying the area in which the objects

were discovered, if upon notice, such tribe states a claim for such remains or objects, or

(2) if it can be shown by a preponderance of the evidence that a different tribe has a stronger cultural relationship with the remains or objects than the tribe or organization specified in paragraph (1), in the Indian tribe that has the strongest demonstrated relationship, if upon notice, such tribe states a claim for such remains or objects.

(b) UNCLAIMED NATIVE AMERICAN HUMAN REMAINS AND OBJECTS. Native American cultural items not claimed under subsection (a) shall be disposed of in accordance with regulations promulgated by the Secretary in consultation with the review committee established under section 8, Native American groups, representatives of museums and the scientific community.

(c) INTENTIONAL EXCAVATION AND REMOVAL OF NATIVE AMERICAN HUMAN REMAINS AND OBJECTS. The intentional removal from or excavation of Native American cultural items from Federal or tribal lands for purposes of discovery, study, or removal of such items is permitted only if

(1) such items are excavated or removed pursuant to a permit issued under section 4 of the Archaeological Resources Protection Act of 1979 (93 Stat. 721; 16 U.S.C. 470aa et seq.) which shall be consistent with this Act;

(2) such items are excavated or removed after consultation with or, in the case of tribal lands, consent of the appropriate (if any) Indian tribe or Native Hawaiian organization;

(3) the ownership and right of control of the disposition of such items shall be as provided in subsections (a) and (b); and

(4) proof of consultation or consent under paragraph (2) is shown.

(d) INADVERTENT DISCOVERY OF NATIVE AMERICAN REMAINS AND OBJECTS. (1) Any person who knows, or has reason to know, that such person has discovered Native American cultural items on Federal or tribal lands after the date of enactment of this Act shall notify, in writing, the Secretary of the Department, or head of any other agency or instrumentality of the United States, having primary management authority with respect to Federal lands and the appropriate Indian tribe or Native Hawaiian organization with respect to tribal lands, if known or readily ascertainable. If the discovery occurred in connection with an activity, including (but not limited to) construction, mining, logging, and agriculture, the person shall cease the activity in the area of the discovery, make a reasonable effort to protect the items discovered before resuming such activity, and provide notice under this subsection. The activity may resume after a reasonable amount of time and following notification under this subsection.

(2) The disposition of and control over any cultural items excavated or removed under this subsection shall be determined as provided for in this section.

(3) If the Secretary of the Interior consents, the responsibilities (in whole or in part) under paragraphs (1) and (2) of the Secretary of any department (other than the Department of the Interior) or the head of any other agency or instrumentality may be delegated to the Secretary with respect to any land managed by such other Secretary or agency head.

(e) **RELINQUISHMENT.** Nothing in this section shall prevent the governing body of an Indian tribe or Native Hawaiian organization from expressly relinquishing control over any Native American human remains, or title to or control over any funerary object, or sacred object.

SEC. 4. ILLEGAL TRAFFICKING.

(a) **ILLEGAL TRAFFICKING.** Chapter 53 of title 18, United States Code, is amended by adding at the end thereof the following new section: **SEC. 1170. ILLEGAL TRAFFICKING IN NATIVE AMERICAN HUMAN REMAINS AND CULTURAL ITEMS**

"(a) Whoever knowingly sells, purchases, uses for profit, or transports for sale or profit, the human remains of a Native American without the right of possession to those remains as provided in the Native American Graves Protection and Repatriation Act shall be fined in accordance with this title, or imprisoned not more than 12 months, or both, and in the case of a second or subsequent violation, be fined in accordance with this title, or imprisoned not more than 5 years, or both.

"(b) Whoever knowingly sells, purchases, uses for profit, or transports for sale or profit any Native American cultural items obtained in violation of the Native American Graves Protection and Repatriation Act shall be fined in accordance with this title, imprisoned not more than one year, or both, and in the case of a second or subsequent violation, be fined in accordance with this title, imprisoned not more than 5 years, or both."

(b) **TABLE OF CONTENTS.** The table of contents for chapter 53 of title 18, United States Code, is amended by adding at the end thereof the following new item:

"1170. Illegal Trafficking in Native American Human Remains and Cultural Items."

SECTION. 5. INVENTORY FOR HUMAN REMAINS AND ASSOCIATED FUNERARY OBJECTS.

(a) **IN GENERAL.** Each Federal agency and each museum which has possession or control over holdings or collections of Native American human remains and associated funerary objects shall compile an inventory of such items and, to the extent possible based on information possessed by such museum or federal agency, identify the geographical and cultural affiliation of such item.

(b) **REQUIREMENTS.** (1) The inventories and identifications required under subsection (a) shall be

(A) completed in consultation with tribal government and Native Hawaiian organization officials and traditional religious leaders;

(B) completed by not later than the date that is 5 years after the date of enactment of this Act, and

(C) made available both during the time they are being conducted and afterward to a review committee established under section 8.

(2) Upon request by an Indian tribe or Native Hawaiian organization which receives or should have received notice, a museum or federal agency shall supply additional available

documentation to supplement the information required by subsection (a) of this section. The term "documentation" means a summary of existing museum or Federal agency records, including inventories or catalogues, relevant studies, or other pertinent data for the limited purpose of determining the geographical origin, cultural affiliation, and basic facts surrounding acquisition and accession of Native American human remains and associated funerary objects subject to this section. Such term does not mean, and this Act shall not be construed to be an authorization for, the initiation of new scientific studies of such remains and associated funerary objects or other means of acquiring or preserving additional scientific information from such remains and objects.

(c) EXTENSION OF TIME FOR INVENTORY. Any museum which has made a good faith effort to carry out an inventory and identification under this section, but which has been unable to complete the process, may appeal to the Secretary for an extension of the time requirements set forth in subsection (b)(1)(B). The Secretary may extend such time requirements for any such museum upon a finding of good faith effort. An indication of good faith shall include the development of a plan to carry out the inventory and identification process.

(d) NOTIFICATION. (1) If the cultural affiliation of any particular Native American human remains or associated funerary objects is determined pursuant to this section, the Federal agency or museum concerned shall, not later than 6 months after the completion of the inventory, notify the affected Indian tribes or Native Hawaiian organizations.

(2) The notice required by paragraph (1) shall include information

(A) which identifies each Native American human remains or associated funerary objects and the circumstances surrounding its acquisition;

(B) which lists the human remains or associated funerary objects that are clearly identifiable as to tribal origin; and

(C) which lists the Native American human remains and associated funerary objects that are not clearly identifiable as being culturally affiliated with that Indian tribe or Native Hawaiian organization, but which, given the totality of circumstances surrounding acquisition of the remains or objects, are determined by a reasonable belief to be remains or objects culturally affiliated with the Indian tribe or Native Hawaiian organization.

(3) A copy of each notice provided under paragraph (1) shall be sent to the Secretary who shall publish each notice in the Federal Register.

(e) INVENTORY. For the purposes of this section, the term "inventory" means a simple itemized list that summarizes the information called for by this section.

SEC. 6. SUMMARY FOR UNASSOCIATED FUNERARY OBJECTS, SACRED OBJECTS, AND CULTURAL PATRIMONY.

(a) IN GENERAL. Each Federal agency or museum which has possession or control over holdings or collections of Native American unassociated funerary objects, sacred objects, or objects of cultural patrimony shall provide a written summary of such objects based upon available information held by such agency or museum. The summary shall describe the scope of the collection, kinds of objects included, reference to geographical location, means and period of acquisition and cultural affiliation, where readily ascertainable.

(b) REQUIREMENTS. (1) The summary required under subsection (a) shall be

(A) in lieu of an object-by-object inventory;

(B) followed by consultation with tribal government and Native Hawaiian organization officials and traditional religious leaders; and

(C) completed by not later than the date that is 3 years after the date of enactment of this Act.

(2) Upon request, Indian tribes and Native Hawaiian organizations shall have access to records, catalogues, relevant studies or other pertinent data for the limited purposes of determining the geographic origin, cultural affiliation, and basic facts surrounding acquisition and accession of Native American objects subject to this section. Such information shall be provided in a reasonable manner to be agreed upon by all parties.

SEC. 7. REPATRIATION.

(a) REPATRIATION OF NATIVE AMERICAN HUMAN REMAINS AND OBJECTS POSSESSED OR CONTROLLED BY FEDERAL AGENCIES AND MUSEUMS. (1) If, pursuant to section 5, the cultural affiliation of Native American human remains and associated funerary objects with a particular Indian tribe or Native Hawaiian organization is established, then the Federal agency or museum, upon the request of a known lineal descendant of the Native American or of the tribe or organization and pursuant to subsections (b) and (e) of this section, shall expeditiously return such remains and associated funerary objects.

(2) If, pursuant to section 6, the cultural affiliation with a particular Indian tribe or Native Hawaiian organization is shown with respect to unassociated funerary objects, sacred objects or objects of cultural patrimony, then the Federal agency or museum, upon the request of the Indian tribe or Native Hawaiian organization and pursuant to subsections (b), (c) and (e) of this section, shall expeditiously return such objects.

(3) The return of cultural items covered by this Act shall be in consultation with the requesting lineal descendant or tribe or organization to determine the place and manner of delivery of such items.

(4) Where cultural affiliation of Native American human remains and funerary objects has not been established in an inventory prepared pursuant to section 5 or where Native American human remains and funerary objects are not included upon any such inventory, then, upon request and pursuant to subsections (b) and (e) and, in the case of unassociated funerary objects, subsection (c), such Native American human remains and funerary objects shall be expeditiously returned where the requesting Indian tribe or Native Hawaiian organization can show cultural affiliation by a preponderance of the evidence based upon geographical, kinship, biological, archaeological, anthropological, linguistic, folkloric, oral traditional, historical, or other relevant information or expert opinion.

(5) Upon request and pursuant to subsections (b), (c) and (e), sacred objects and objects of cultural patrimony shall be expeditiously returned where

(A) the requesting party is the direct lineal descendant of an individual who owned the sacred object;

(B) the requesting Indian tribe or Native Hawaiian organization can show that the object was owned or controlled by the tribe or organization; or

(C) the requesting Indian tribe or Native Hawaiian organization can show that the sacred object was owned or controlled by a member thereof, provided that in the case where a sacred object was owned by a member thereof, there are no identifiable lineal descendants of said member or the lineal descendants, upon notice, have failed to make a claim for the object under this Act.

(b) SCIENTIFIC STUDY. If the lineal descendant, Indian tribe, or Native Hawaiian organization requests the return of culturally affiliated Native American cultural items, the Federal agency or museum shall expeditiously return such items unless such items are indispensable for completion of a specific scientific study, the outcome of which would be of major benefit to the United States. Such items shall be returned by no later than 90 days after the date on which the scientific study is completed.

(c) STANDARD OF REPATRIATION. If a known lineal descendant or an Indian tribe or Native Hawaiian organization requests the return of Native American unassociated funerary objects, sacred objects or objects of cultural patrimony pursuant to this Act and presents evidence which, if standing alone before the introduction of evidence to the contrary, would support a finding that the Federal agency or museum did not have the right of possession, then such agency or museum shall return such objects unless it can overcome such inference and prove that it has a right of possession to the objects.

(d) SHARING OF INFORMATION BY FEDERAL AGENCIES AND MUSEUMS. Any Federal agency or museum shall share what information it does possess regarding the object in question with the known lineal descendant, Indian tribe, or Native Hawaiian organization to assist in making a claim under this section.

(e) COMPETING CLAIMS. Where there are multiple requests for repatriation of any cultural item and, after complying with the requirements of this Act, the Federal agency or museum cannot clearly determine which requesting party is the most appropriate claimant, the agency or museum may retain such item until the requesting parties agree upon its disposition or the dispute is otherwise resolved pursuant to the provisions of this Act or by a court of competent jurisdiction.

(f) MUSEUM OBLIGATION. Any museum which repatriates any item in good faith pursuant to this Act shall not be liable for claims by an aggrieved party or for claims of breach of fiduciary duty, public trust, or violations of state law that are inconsistent with the provisions of this Act.

SEC. 8 REVIEW COMMITTEE.

(a) ESTABLISHMENT. Within 120 days after the date of enactment of this Act, the Secretary shall establish a committee to monitor and review the implementation of the inventory and identification process and repatriation activities required under sections 5, 6 and 7.

(b) MEMBERSHIP. (1) The Committee established under subsection (a) shall be composed of 7 members,

(A) 3 of whom shall be appointed by the Secretary from nominations submitted by Indian tribes, Native Hawaiian organizations, and traditional Native American religious leaders with at least 2

of such persons being traditional Indian religious leaders;

(B) 3 of whom shall be appointed by the Secretary from nominations submitted by national museum organizations and scientific organizations; and

(C) 1 who shall be appointed by the Secretary from a list of persons developed and consented to by all of the members appointed pursuant to subparagraphs (A) and (B).

(2) The Secretary may not appoint Federal officers or employees to the committee.

(3) In the event vacancies shall occur, such vacancies shall be filled by the Secretary in the same manner as the original appointment within 90 days of the occurrence of such vacancy.

(4) Members of the committee established under subsection (a) shall serve without pay but shall be reimbursed at a rate equal to the daily rate for GS-18 of the General Schedule for each day (including travel time) for which the member is actually engaged in committee business. Each member shall receive travel expenses, including per diem in lieu of subsistence, in accordance with sections 5702 and 5703 of title 5, United States Code.

(c) **RESPONSIBILITIES.** The committee established under subsection (a) shall be responsible for

(1) designating one of the members of the committee as chairman;

(2) monitoring the inventory and identification process conducted under sections 5 and 6 to ensure a fair, objective consideration and assessment of all available relevant information and evidence;

(3) reviewing upon the request of any affected party and finding relating to

(A) the identity or cultural affiliation of cultural items, or

(B) the return of such items;

(4) facilitating the resolution of any disputes among Indian tribes, Native Hawaiian organizations, or lineal descendants and Federal agencies or museums relating to the return of such items including convening the parties to the dispute if deemed desirable;

(5) compiling an inventory of culturally unidentifiable human remains that are in the possession or control of each Federal agency and museum and recommending specific actions for developing a process for disposition of such remains;

(6) consulting with Indian tribes and Native Hawaiian organizations and museums on matters within the scope of the work of the committee affecting such tribes or organizations;

(7) consulting with the Secretary in the development of regulations to carry out this Act;

(8) performing such other related functions as the Secretary may assign to the committee; and

(9) making recommendations, if appropriate, regarding future care of cultural items which are to be repatriated.

(d) RECOMMENDATIONS AND REPORT. The committee shall make the recommendations under paragraph (c)(5) in consultation with Indian tribes and Native Hawaiian organizations and appropriate scientific and museum groups.

(e) ACCESS. The Secretary shall ensure that the committee established under subsection (a) and the members of the committee have reasonable access to Native American cultural items under review and to associated scientific and historical documents.

(f) DUTIES OF SECRETARY. The Secretary shall

(1) establish such rules and regulations for the committee as may be necessary, and

(2) provide reasonable administrative and staff support necessary for the deliberations of the committee.

(g) ANNUAL REPORT. The committee established under subsection (a) shall submit an annual report to the Congress on the progress made, and any barriers encountered, in implementing this section during the previous year.

(h) TERMINATION. The committee established under subsection (a) shall terminate at the end of the 120-day period beginning on the day the Secretary certifies, in a report submitted to Congress, that the work of the committee has been completed.

SEC. 9. PENALTY.

(a) PENALTY. (1) Any museum that fails to comply with the requirements of this Act may be assessed a civil penalty by the secretary of Interior pursuant to procedures established by the Secretary through regulation. No penalty may be assessed under this subsection unless such museum is given notice and opportunity for a hearing with respect to such violation. Each violation shall be a separate offense.

(2) The amount of such penalty shall be determined under regulations promulgated pursuant to this Act, taking into account, in addition to other factors

(A) the archeological, historical or commercial value of the item involved;

(B) the damages suffered, both economic and non-economic, by an aggrieved party;

(C) the number of violations that have occurred.

(3) Any museum aggrieved by an order assessing a civil penalty under this subsection may file a petition of judicial review of such order with the United States District Court for the District of Columbia or for any other district in which the museum is located. Such a petition may only be filed within the 30-day period beginning on the date the order making such assessment was issued. The court shall hear such action on the administrative record and sustain the imposition of the penalty if it is supported by substantial evidence on the record considered as a whole.

(4) If any museum fails to pay an assessment of a civil penalty after a final administrative order has been issued and not appealed or after a final judgement has been rendered, the Attorney General may institute a civil action in a district court of the United States for any district in which such museum is located to collect the penalty and such court shall have jurisdiction to hear and decide such action. In such action, the validity and amount of such penalty shall not be subject to review.

(5) Hearings held during proceedings for the assessment of civil penalties authorized by this subsection shall be conducted in accordance with section 554 of Title 5. Subpoenas may be issued for the attendance and testimony of witnesses and the production of relevant papers, books and documents. Witnesses summoned shall be paid the same fees and mileage that are paid to witnesses in the courts of the United States. In the case of contumacy or refusal to obey a subpoena served upon any person pursuant to this paragraph, the district court of the United States for any district in which such person is located, resides or transacts business, upon application by the United States and after notice to such person shall have jurisdiction to issue an order requiring such person to appear and give testimony or produce documents, or both, and any failure to obey such order of the court may be punished by such court as a contempt thereof.

SEC. 10. GRANTS.

(a) INDIAN TRIBES AND NATIVE HAWAIIAN ORGANIZATIONS. The Secretary is authorized to make grants to Indian tribes and Native Hawaiian organizations for the purpose of assisting such tribes and organizations in the repatriation of Native American cultural items.

(b) MUSEUMS. The Secretary is authorized to make grants to museums for the purpose of assisting the museums in conducting the inventories and identification required under sections 5 and 6.

SEC. 11. SAVINGS PROVISIONS.

Noting in this Act shall be construed to

(1) limit the authority of any Federal agency or museum to

(A) return or repatriate Native American cultural items to Indian tribes, Native Hawaiian organizations, or individuals, and

(B) enter into any other agreement with the consent of the culturally affiliated tribe or organization as to the disposition of control over items covered by this Act;

(2) delay actions on repatriation requests that are pending on the date of enactment of this Act;

(3) deny or otherwise affect access to any court;

(4) limit any procedural or substantive right which may otherwise be secured to individuals or Indian tribes or Native Hawaiian organizations; or

(5) limit the application of any State or Federal law pertaining to theft or stolen property.

SEC. 12. SPECIAL RELATIONSHIP BETWEEN THE FEDERAL GOVERNMENT AND INDIAN TRIBES.

This Act reflects the unique relationship between the Federal government and Indian tribes and Native Hawaiian organizations and should not be construed to establish a precedent with respect to any other individual, organization or foreign government.

SEC. 13. REGULATIONS.

The Secretary shall promulgate regulations to carry out this Act within 12 months of enactment.

SEC. 14. AUTHORIZATION OF APPROPRIATIONS.

There is authorized to be appropriated such sums as may be necessary to carry out this Act.

PURPOSE

The purpose of H.R. 5237 is to protect Native American burial sites and the removal of human remains, funerary objects, sacred objects, and objects of cultural patrimony on Federal, Indian and Native Hawaiian lands. The Act also sets up a process by which Federal agencies and museums receiving federal funds will inventory holdings of such remains and objects and work with appropriate Indian tribes and Native Hawaiian organizations to reach agreement on repatriation or other disposition of these remains and objects.

Government-to-Government Relations With Native American Tribal Governments

Memorandum for the Heads of Executive Departments and Agencies

The United States Government has a unique legal relationship with Native American tribal governments as set forth in the Constitution of the United States, treaties, statutes, and court decisions. As executive departments and agencies undertake activities affecting Native American tribal rights or trust resources, such activities should be implemented in a knowledgeable, sensitive manner respectful of tribal sovereignty. Today, as part of an historic meeting, I am outlining principles that executive departments and agencies, including every component bureau and office, are to follow in their interactions with Native American tribal governments. The purpose of these principles is to clarify our responsibility to ensure that the Federal Government operates within a government-to-government relationship with federally recognized Native American tribes. I am strongly committed to building a more effective day-to-day working relationship reflecting respect for the rights of self-government due the sovereign tribal governments.

In order to ensure that the rights of sovereign tribal governments are fully respected, executive branch activities shall be guided by the following:

- (a) The head of each executive department and agency shall be responsible for ensuring that the department or agency operates within a government-to-government relationship with federally recognized tribal governments.
- (b) Each executive department and agency shall consult, to the greatest extent practicable and to the extent permitted by law, with tribal governments prior to taking actions that affect federally recognized tribal governments. All such consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals.
- (c) Each executive department and agency shall assess the impact of Federal Government 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.
- (d) Each executive department and agency shall take appropriate steps to remove any procedural impediments to working directly and effectively with tribal governments on activities that affect the trust property and/ or governmental rights of the tribes.
- (e) Each executive department and agency shall work cooperatively with other Federal departments and agencies to enlist their interest and support in cooperative efforts, where appropriate, to accomplish the goals of this memorandum.
- (f) Each executive department and agency shall apply the requirements of Executive Orders Nos. 12875 ("Enhancing the Intergovernmental Partnership") and 12866 ("Regulatory Planning and Review") to design solutions and tailor Federal programs, in appropriate circumstances, to address specific or unique needs of tribal communities.

The head of each executive department and agency shall ensure that the department or agency's bureaus and components are fully aware of this memorandum, through publication or other means, and that they are in compliance with its requirements.

This memorandum is intended only to improve the internal management of the executive branch and is not intended to, and does not, create any right to administrative or judicial review, or any other right or benefit or trust responsibility, substantive or procedural, enforceable by a party against the United States, its agencies or instrumentalities, its officers or employees, or any other person.

The Director of the Office of Management and Budget is authorized and directed to publish this memorandum in the **Federal Register**.

William J. Clinton

THE WHITE HOUSE

Washington, April 29, 1994

**Executive Order No. 13007:
Indian Sacred Sites**

May 24, 1996

By the authority vested in me as President by the Constitution and the laws of the United States, in furtherance of Federal treaties, and in order to protect and preserve Indian religious practices, it is hereby ordered:

Section 1. Accommodation of Sacred Sites. (a) In managing Federal lands, each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall, to the extent practicable, permitted by law, and not clearly inconsistent with essential agency functions, (1) accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and (2) avoid adversely affecting the physical integrity of such sacred sites. Where appropriate, agencies shall maintain the confidentiality of sacred sites.

(b) For purposes of this order:

- i. "Federal lands" means any land or interests in land owned by the United States, including leasehold interests held by the United States, except Indian trust lands;
- ii. "Indian tribe" means an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to Public Law No. 103-454, 108 Stat. 4791, and "Indian" refers to a member of such an Indian tribe; and
- iii. "Sacred site" means any specific, discrete, narrowly delineated location on Federal land that is identified by an Indian tribe, or Indian individual determined to be an appropriately authoritative representative of an Indian religion, as sacred by virtue of its established religious significance to, or ceremonial use by, an Indian religion; provided that the tribe or appropriately authoritative representative of an Indian religion has informed the agency of the existence of such a site.

Section 2. Procedures. (a) Each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall, as appropriate, promptly implement procedures for the purposes of carrying out the provisions of section 1 of this order, including, where practicable and appropriate, procedures to ensure reasonable notice is provided of proposed actions or land management policies that may restrict future access to or ceremonial use of, or adversely affect the physical integrity of, sacred sites. In all actions pursuant to this section, agencies shall comply with the Executive memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments."

(b) Within 1 year of the effective date of this order, the head of each executive branch agency with statutory or administrative responsibility for the management of Federal lands shall report to the President, through the Assistant to the President for Domestic Policy, on the implementation of this order. Such reports shall address, among other things,

- i. any changes necessary to accommodate access to and ceremonial use of Indian sacred sites;

- ii. any changes necessary to avoid adversely affecting the physical integrity of Indian sacred sites; and
- iii. procedures implemented or proposed to facilitate consultation with appropriate Indian tribes and religious leaders and the expeditious resolution of disputes relating to agency action on Federal lands that may adversely affect access to, ceremonial use of, or the physical integrity of sacred sites.

Section 3. Nothing in this order shall be construed to require a taking of vested property interests. Nor shall this order be construed to impair enforceable rights to use of Federal lands that have been granted to third parties through final agency action. For purposes of this order, "agency action" has the same meaning as in the Administrative Procedures Act (5 U.S.C.551[13]).

Section 4. This order is intended only to improve the internal management of the executive branch and is not intended to, nor does it, create any right, benefit, or trust responsibility, substantive or procedural, enforceable at law or equity by any party against the United States, its agencies officers, or any person.

William J. Clinton

The White House
May 24, 1996

Executive Order No. 11593
Protection and Enhancement of the Cultural Environment

May 13, 1971
36 F.R. 8921

By virtue of the authority vested in me as President of the United States and in furtherance of the purposes and policies of the National Environmental Policy Act of 1969 (83 Stat. 852, 42 U.S.C. 4321 et seq.), the National Historic Preservation Act of 1966 (80 Stat. 915, 16 U.S.C. 470 et seq.), the Historic Sites Act of 1935 (49 Stat. 666, 16 U.S.C. 461 et seq.), and the Antiquities Act of 1906 (34 Stat. 225, 16 U.S.C. 431 et seq.), it is ordered as follows:

Section 1. Policy. The Federal Government shall provide leadership in preserving, restoring and maintaining the historic and cultural environment of the Nation. Agencies of the executive branch of the Government (hereinafter referred to as 'Federal agencies') shall (1) administer the cultural properties under their control in a spirit of stewardship and trusteeship for future generations, (2) initiate measures necessary to direct their policies, plans and programs in such a way that federally owned sites, structures, and objects of historical, architectural or archaeological significance are preserved, restored and maintained for the inspiration and benefit of the people, and (3), in consultation with the Advisory Council on Historic Preservation (16 U.S.C. 470i), institute procedures to assure that Federal plans and programs contribute to the preservation and enhancement of non-federally owned sites, structures and objects of historical, architectural or archaeological significance.

Sec. 2. Responsibilities of Federal agencies. Consonant with the provisions of the acts cited in the first paragraph of this order, the heads of Federal agencies shall:

a) no later than July 1, 1973, with the advice of the Secretary of the Interior, and in cooperation with the liaison officer for historic preservation for the State or territory involved, locate, inventory, and nominate to the Secretary of the Interior all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the National Register of Historic Places.

(b) exercise caution during the interim period until inventories and evaluations required by subsection (a) are completed to assure that any federally owned property that might qualify for nomination is not inadvertently transferred, sold, demolished or substantially altered. The agency head shall refer any questionable actions to the Secretary of the Interior for an opinion respecting the property's eligibility for inclusion on the National Register of Historic Places. The Secretary shall consult with the liaison officer for historic preservation for the State or territory involved in arriving at his opinion. Where, after a reasonable period in which to review and evaluate the property, the Secretary determines that the property is likely to meet the criteria prescribed for listing on the National Register of Historic Places, the Federal agency head shall reconsider the proposal in light of national environmental and preservation policy. Where, after such reconsideration, the Federal agency head proposes to transfer, sell, demolish or substantially alter the property he shall not act with respect to the property until the Advisory Council on Historic Preservation shall have been provided an opportunity to comment on the proposal.

(c) initiate measures to assure that where as a result of Federal action or assistance a property listed on the National Register of Historic Places is to be substantially altered or demolished, timely steps be taken to make or have made records, including measured drawings, photographs and maps, of the property, and that copy of such records then be deposited in the

Library of Congress as part of the Historic American Buildings Survey or Historic American Engineering Record for future use and reference. Agencies may call on the Department of the Interior for advice and technical assistance in the completion of the above records.

(d) initiate measures and procedures to provide for the maintenance, through preservation, rehabilitation, or restoration, of federally owned and registered sites at professional standards prescribed by the Secretary of the Interior.

(e) submit procedures required pursuant to subsection (d) to the Secretary of the Interior and to the Advisory Council on Historic Preservation no later than January 1, 1972, and annually thereafter, for review and comment.

(f) cooperate with purchasers and transferees of a property listed on the National Register of Historic Places in the development of viable plans to use such property in a manner compatible with preservation objectives and which does not result in an unreasonable economic burden to public or private interests.

Sec. 3. Responsibilities of the Secretary of the Interior. The Secretary of the Interior shall:

(a) encourage State and local historic preservation officials to evaluate and survey federally owned historic properties and, where appropriate, to nominate such properties for listing on the National Register of Historic Places.

(b) develop criteria and procedures to be applied by Federal agencies in the reviews and nominations required by section 2(a). Such criteria and procedures shall be developed in consultation with the affected agencies.

(c) expedite action upon nominations to the National Register of Historic Places concerning federally owned properties proposed for sale, transfer, demolition or substantial alteration.

(d) encourage State and Territorial liaison officers for historic preservation to furnish information upon request to Federal agencies regarding their properties which have been evaluated with respect to historic, architectural or archaeological significance and which as a result of such evaluations have not been found suitable for listing on the National Register of Historic Places.

(e) develop and make available to Federal agencies and State and local governments information concerning professional methods and techniques for preserving, improving, restoring and maintaining historic properties.

(f) advise Federal agencies in the evaluation, identification, preservation, improvement, restoration and maintenance of historic properties.

(g) review and evaluate the plans of transferees of surplus Federal properties transferred for historic monument purposes to assure that the historic character of such properties is preserved in rehabilitation, restoration, improvement, maintenance and repair of such properties.

(h) review and comment upon Federal agency procedures submitted pursuant to section 2(e) of this order.

Signed, Richard Nixon

Executive Order 13287: "Preserve America"

By the authority vested in me as President by the Constitution and the laws of the United States of America, including the National Historic Preservation Act (16 U.S.C. 470 et seq.) (NHPA) and the National Environmental Policy Act (42 U.S.C. 4321 et seq.), it is hereby ordered:

Section 1. Statement of Policy. It is the policy of the Federal Government to provide leadership in preserving America's heritage by actively advancing the protection, enhancement, and contemporary use of the historic properties owned by the Federal Government, and by promoting intergovernmental cooperation and partnerships for the preservation and use of historic properties. The Federal Government shall recognize and manage the historic properties in its ownership as assets that can support department and agency missions while contributing to the vitality and economic well-being of the Nation's communities and fostering a broader appreciation for the development of the United States and its underlying values. Where consistent with executive branch department and agency missions, governing law, applicable preservation standards, and where appropriate, executive branch departments and agencies ("agency" or "agencies") shall advance this policy through the protection and continued use of the historic properties owned by the Federal Government, and by pursuing partnerships with State and local governments, Indian tribes, and the private sector to promote the preservation of the unique cultural heritage of communities and of the Nation and to realize the economic benefit that these properties can provide. Agencies shall maximize efforts to integrate the policies, procedures, and practices of the NHPA and this order into their program activities in order to efficiently and effectively advance historic preservation objectives in the pursuit of their missions.

Sec. 2. Building Preservation Partnerships. When carrying out its mission activities, each agency, where consistent with its mission and governing authorities, and where appropriate, shall seek partnerships with State and local governments, Indian tribes, and the private sector to promote local economic development and vitality through the use of historic properties in a manner that contributes to the long-term preservation and productive use of those properties. Each agency shall examine its policies, procedures, and capabilities to ensure that its actions encourage, support, and foster public-private initiatives and investment in the use, reuse, and rehabilitation of historic properties, to the extent such support is not inconsistent with other provisions of law, the Secretary of the Interior's Standards for Archeology and Historic Preservation, and essential national department and agency mission requirements.

Sec. 3. Improving Federal Agency Planning and Accountability. (a) Accurate information on the state of federally owned historic properties is essential to achieving the goals of this order and to promoting community economic development through local partnerships. Each agency with real property management responsibilities shall prepare an assessment of the current status of its inventory of historic properties required by section 110(a)(2) of the NHPA (16 U.S.C. 470h-2(a)(2)), the general condition and management needs of such properties, and the steps underway or planned to meet those management needs. The assessment shall also include an evaluation of the suitability of the agency's types of historic properties to contribute to community economic development initiatives, including heritage tourism, taking into account agency mission needs, public access considerations, and the long-term preservation of the historic properties. No later than September 30, 2004, each covered agency shall complete a report of the assessment and make it available to the Chairman of the Advisory Council on Historic Preservation (Council) and the Secretary of the Interior (Secretary).

(b) No later than September 30, 2004, each agency with real property management responsibilities shall review its regulations, management policies, and operating procedures for

compliance with sections 110 and 111 of the NHPA (16 U.S.C. 470h-2 & 470h-3) and make the results of its review available to the Council and the Secretary. If the agency determines that its regulations, management policies, and operating procedures are not in compliance with those authorities, the agency shall make amendments or revisions to bring them into compliance.

(c) Each agency with real property management responsibilities shall, by September 30, 2005, and every third year thereafter, prepare a report on its progress in identifying, protecting, and using historic properties in its ownership and make the report available to the Council and the Secretary. The Council shall incorporate this data into a report on the state of the Federal Government's historic properties and their contribution to local economic development and submit this report to the President by February 15, 2006, and every third year thereafter.

(d) Agencies may use existing information gathering and reporting systems to fulfill the assessment and reporting requirements of subsections 3(a)-(c) of this order. To assist agencies, the Council, in consultation with the Secretary, shall, by September 30, 2003, prepare advisory guidelines for agencies to use at their discretion.

(e) No later than June 30, 2003, the head of each agency shall designate a senior policy level official to have policy oversight responsibility for the agency's historic preservation program and notify the Council and the Secretary of the designation. This senior official shall be an assistant secretary, deputy assistant secretary, or the equivalent, as appropriate to the agency organization. This official, or a subordinate employee reporting directly to the official, shall serve as the agency's Federal Preservation Officer in accordance with section 110(c) of the NHPA. The senior official shall ensure that the Federal Preservation Officer is qualified consistent with guidelines established by the Secretary for that position and has access to adequate expertise and support to carry out the duties of the position.

Sec. 4. Improving Federal Stewardship of Historic Properties. (a) Each agency shall ensure that the management of historic properties in its ownership is conducted in a manner that promotes the long-term preservation and use of those properties as Federal assets and, where consistent with agency missions, governing law, and the nature of the properties, contributes to the local community and its economy.

(b) Where consistent with agency missions and the Secretary of the Interior's Standards for Archeology and Historic Preservation, and where appropriate, agencies shall cooperate with communities to increase opportunities for public benefit from, and access to, federally owned historic properties.

(c) The Council is directed to use its existing authority to encourage and accept donations of money, equipment, and other resources from public and private parties to assist other agencies in the preservation of historic properties in Federal ownership to fulfill the goals of the NHPA and this order.

(d) The National Park Service, working with the Council and in consultation with other agencies, shall make available existing materials and information for education, training, and awareness of historic property stewardship to ensure that all Federal personnel have access to information and can develop the skills necessary to continue the productive use of federally owned historic properties while meeting their stewardship responsibilities.

(e) The Council, in consultation with the National Park Service and other agencies, shall encourage and recognize exceptional achievement by such agencies in meeting the goals of the NHPA and this order. By March 31, 2004, the Council shall submit to the President and the heads of agencies recommendations to further stimulate initiative, creativity, and efficiency in the Federal stewardship of historic properties.

Sec. 5. Promoting Preservation Through Heritage Tourism. (a) To the extent permitted by law and within existing resources, the Secretary of Commerce, working with the Council and other agencies, shall assist States, Indian tribes, and local communities in promoting the use of historic

properties for heritage tourism and related economic development in a manner that contributes to the long-term preservation and productive use of those properties. Such assistance shall include efforts to strengthen and improve heritage tourism activities throughout the country as they relate to federally owned historic properties and significant natural assets on Federal lands.

(b) Where consistent with agency missions and governing law, and where appropriate, agencies shall use historic properties in their ownership in conjunction with State, tribal, and local tourism programs to foster viable economic partnerships, including, but not limited to, cooperation and coordination with tourism officials and others with interests in the properties.

Sec. 6. National and Homeland Security Considerations. Nothing in this order shall be construed to require any agency to take any action or disclose any information that would conflict with or compromise national and homeland security goals, policies, programs, or activities.

Sec. 7. Definitions. For the purposes of this order, the term "historic property" means any prehistoric or historic district, site, building, structure, and object included on or eligible for inclusion on the National Register of Historic Places in accordance with section 301(5) of the NHPA (16 U.S.C. 470w(5)). The term "heritage tourism" means the business and practice of attracting and accommodating visitors to a place or area based especially on the unique or special aspects of that locale's history, landscape (including trail systems), and culture. The terms "federally owned" and "in Federal ownership," and similar terms, as used in this order, do not include properties acquired by agencies as a result of foreclosure or similar actions and that are held for a period of less than 5 years.

Sec. 8. Judicial Review. This order is intended only to improve the internal management of the Federal Government and it is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or equity by a party against the United States, its departments, agencies, instrumentalities or entities, its officers or employees, or any other person.

GEORGE W. BUSH

THE WHITE HOUSE,

March 3, 2003

The National Environmental Policy Act of 1969, as amended

(Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982)

An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "National Environmental Policy Act of 1969."

Purpose

Sec. 2 [42 USC § 4321].

The purposes of this Act are: To declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man; to enrich the understanding of the ecological systems and natural resources important to the Nation; and to establish a Council on Environmental Quality.

TITLE I

CONGRESSIONAL DECLARATION OF NATIONAL ENVIRONMENTAL POLICY

Sec. 101 [42 USC § 4331].

(a) The Congress, recognizing the profound impact of man's activity on the interrelations of all components of the natural environment, particularly the profound influences of population growth, high-density urbanization, industrial expansion, resource exploitation, and new and expanding technological advances and recognizing further the critical importance of restoring and maintaining environmental quality to the overall welfare and development of man, declares that it is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations, to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.

(b) In order to carry out the policy set forth in this Act, it is the continuing responsibility of the Federal Government to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may --

1. fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
2. assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
3. attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
4. preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice;

5. achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
6. enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

(c) The Congress recognizes that each person should enjoy a healthful environment and that each person has a responsibility to contribute to the preservation and enhancement of the environment.

Sec. 102 [42 USC § 4332].

The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, and (2) all agencies of the Federal Government shall --

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decisionmaking which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on --

(i) the environmental impact of the proposed action,

(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,

(iii) alternatives to the proposed action,

(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and

(v) any irreversible and ir retrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public as provided by section 552 of title 5, United States Code, and shall accompany the proposal through the existing agency review processes;

(D) Any detailed statement required under subparagraph (C) after January 1, 1970, for any major Federal action funded under a program of grants to States shall not be deemed to be legally insufficient solely by reason of having been prepared by a State agency or official, if:

(i) the State agency or official has statewide jurisdiction and has the responsibility for such action,

(ii) the responsible Federal official furnishes guidance and participates in such preparation,

(iii) the responsible Federal official independently evaluates such statement prior to its approval and adoption, and

(iv) after January 1, 1976, the responsible Federal official provides early notification to, and solicits the views of, any other State or any Federal land

management entity of any action or any alternative thereto which may have significant impacts upon such State or affected Federal land management entity and, if there is any disagreement on such impacts, prepares a written assessment of such impacts and views for incorporation into such detailed statement.

The procedures in this subparagraph shall not relieve the Federal official of his responsibilities for the scope, objectivity, and content of the entire statement or of any other responsibility under this Act; and further, this subparagraph does not affect the legal sufficiency of statements prepared by State agencies with less than statewide jurisdiction.

(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;

(F) recognize the worldwide and long-range character of environmental problems and, where consistent with the foreign policy of the United States, lend appropriate support to initiatives, resolutions, and programs designed to maximize international cooperation in anticipating and preventing a decline in the quality of mankind's world environment;

(G) make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment;

(H) initiate and utilize ecological information in the planning and development of resource-oriented projects; and

(I) assist the Council on Environmental Quality established by title II of this Act.

Sec. 103 [42 USC § 4333].

All agencies of the Federal Government shall review their present statutory authority, administrative regulations, and current policies and procedures for the purpose of determining whether there are any deficiencies or inconsistencies therein which prohibit full compliance with the purposes and provisions of this Act and shall propose to the President not later than July 1, 1971, such measures as may be necessary to bring their authority and policies into conformity with the intent, purposes, and procedures set forth in this Act.

Sec. 104 [42 USC § 4334].

Nothing in section 102 [42 USC § 4332] or 103 [42 USC § 4333] shall in any way affect the specific statutory obligations of any Federal agency (1) to comply with criteria or standards of environmental quality, (2) to coordinate or consult with any other Federal or State agency, or (3) to act, or refrain from acting contingent upon the recommendations or certification of any other Federal or State agency.

Sec. 105 [42 USC § 4335].

The policies and goals set forth in this Act are supplementary to those set forth in existing authorizations of Federal agencies.

TITLE II COUNCIL ON ENVIRONMENTAL QUALITY

Sec. 201 [42 USC § 4341].

The President shall transmit to the Congress annually beginning July 1, 1970, an Environmental Quality Report (hereinafter referred to as the "report") which shall set forth (1) the status and condition of the major natural, manmade, or altered environmental classes of the Nation,

including, but not limited to, the air, the aquatic, including marine, estuarine, and fresh water, and the terrestrial environment, including, but not limited to, the forest, dryland, wetland, range, urban, suburban and rural environment; (2) current and foreseeable trends in the quality, management and utilization of such environments and the effects of those trends on the social, economic, and other requirements of the Nation; (3) the adequacy of available natural resources for fulfilling human and economic requirements of the Nation in the light of expected population pressures; (4) a review of the programs and activities (including regulatory activities) of the Federal Government, the State and local governments, and nongovernmental entities or individuals with particular reference to their effect on the environment and on the conservation, development and utilization of natural resources; and (5) a program for remedying the deficiencies of existing programs and activities, together with recommendations for legislation.

Sec. 202 [42 USC § 4342].

There is created in the Executive Office of the President a Council on Environmental Quality (hereinafter referred to as the "Council"). The Council shall be composed of three members who shall be appointed by the President to serve at his pleasure, by and with the advice and consent of the Senate. The President shall designate one of the members of the Council to serve as Chairman. Each member shall be a person who, as a result of his training, experience, and attainments, is exceptionally well qualified to analyze and interpret environmental trends and information of all kinds; to appraise programs and activities of the Federal Government in the light of the policy set forth in title I of this Act; to be conscious of and responsive to the scientific, economic, social, aesthetic, and cultural needs and interests of the Nation; and to formulate and recommend national policies to promote the improvement of the quality of the environment.

Sec. 203 [42 USC § 4343].

(a) The Council may employ such officers and employees as may be necessary to carry out its functions under this Act. In addition, the Council may employ and fix the compensation of such experts and consultants as may be necessary for the carrying out of its functions under this Act, in accordance with section 3109 of title 5, United States Code (but without regard to the last sentence thereof).

(b) Notwithstanding section 1342 of Title 31, the Council may accept and employ voluntary and uncompensated services in furtherance of the purposes of the Council.

Sec. 204 [42 USC § 4344].

It shall be the duty and function of the Council --

1. to assist and advise the President in the preparation of the Environmental Quality Report required by section 201 [42 USC § 4341] of this title;
2. to gather timely and authoritative information concerning the conditions and trends in the quality of the environment both current and prospective, to analyze and interpret such information for the purpose of determining whether such conditions and trends are interfering, or are likely to interfere, with the achievement of the policy set forth in title I of this Act, and to compile and submit to the President studies relating to such conditions and trends;
3. to review and appraise the various programs and activities of the Federal Government in the light of the policy set forth in title I of this Act for the purpose of determining the extent to which such programs and activities are contributing to the achievement of such policy, and to make recommendations to the President with respect thereto;

4. to develop and recommend to the President national policies to foster and promote the improvement of environmental quality to meet the conservation, social, economic, health, and other requirements and goals of the Nation;
5. to conduct investigations, studies, surveys, research, and analyses relating to ecological systems and environmental quality;
6. to document and define changes in the natural environment, including the plant and animal systems, and to accumulate necessary data and other information for a continuing analysis of these changes or trends and an interpretation of their underlying causes;
7. to report at least once each year to the President on the state and condition of the environment; and
8. to make and furnish such studies, reports thereon, and recommendations with respect to matters of policy and legislation as the President may request.

Sec. 205 [42 USC § 4345].

In exercising its powers, functions, and duties under this Act, the Council shall --

1. consult with the Citizens' Advisory Committee on Environmental Quality established by Executive Order No. 11472, dated May 29, 1969, and with such representatives of science, industry, agriculture, labor, conservation organizations, State and local governments and other groups, as it deems advisable; and
2. utilize, to the fullest extent possible, the services, facilities and information (including statistical information) of public and private agencies and organizations, and individuals, in order that duplication of effort and expense may be avoided, thus assuring that the Council's activities will not unnecessarily overlap or conflict with similar activities authorized by law and performed by established agencies.

Sec. 206 [42 USC § 4346].

Members of the Council shall serve full time and the Chairman of the Council shall be compensated at the rate provided for Level II of the Executive Schedule Pay Rates [5 USC § 5313]. The other members of the Council shall be compensated at the rate provided for Level IV of the Executive Schedule Pay Rates [5 USC § 5315].

Sec. 207 [42 USC § 4346a].

The Council may accept reimbursements from any private nonprofit organization or from any department, agency, or instrumentality of the Federal Government, any State, or local government, for the reasonable travel expenses incurred by an officer or employee of the Council in connection with his attendance at any conference, seminar, or similar meeting conducted for the benefit of the Council.

Sec. 208 [42 USC § 4346b].

The Council may make expenditures in support of its international activities, including expenditures for: (1) international travel; (2) activities in implementation of international agreements; and (3) the support of international exchange programs in the United States and in foreign countries.

Sec. 209 [42 USC § 4347].

There are authorized to be appropriated to carry out the provisions of this chapter not to exceed \$300,000 for fiscal year 1970, \$700,000 for fiscal year 1971, and \$1,000,000 for each fiscal year thereafter.

The Environmental Quality Improvement Act, as amended (Pub. L. No. 91- 224, Title II, April 3, 1970; Pub. L. No. 97-258, September 13, 1982; and Pub. L. No. 98-581, October 30, 1984.

42 USC § 4372.

(a) There is established in the Executive Office of the President an office to be known as the Office of Environmental Quality (hereafter in this chapter referred to as the "Office"). The Chairman of the Council on Environmental Quality established by Public Law 91-190 shall be the Director of the Office. There shall be in the Office a Deputy Director who shall be appointed by the President, by and with the advice and consent of the Senate.

(b) The compensation of the Deputy Director shall be fixed by the President at a rate not in excess of the annual rate of compensation payable to the Deputy Director of the Office of Management and Budget.

(c) The Director is authorized to employ such officers and employees (including experts and consultants) as may be necessary to enable the Office to carry out its functions ;under this chapter and Public Law 91-190, except that he may employ no more than ten specialists and other experts without regard to the provisions of Title 5, governing appointments in the competitive service, and pay such specialists and experts without regard to the provisions of chapter 51 and subchapter III of chapter 53 of such title relating to classification and General Schedule pay rates, but no such specialist or expert shall be paid at a rate in excess of the maximum rate for GS-18 of the General Schedule under section 5332 of Title 5.

(d) In carrying out his functions the Director shall assist and advise the President on policies and programs of the Federal Government affecting environmental quality by --

1. providing the professional and administrative staff and support for the Council on Environmental Quality established by Public Law 91- 190;
2. assisting the Federal agencies and departments in appraising the effectiveness of existing and proposed facilities, programs, policies, and activities of the Federal Government, and those specific major projects designated by the President which do not require individual project authorization by Congress, which affect environmental quality;
3. reviewing the adequacy of existing systems for monitoring and predicting environmental changes in order to achieve effective coverage and efficient use of research facilities and other resources;
4. promoting the advancement of scientific knowledge of the effects of actions and technology on the environment and encouraging the development of the means to prevent or reduce adverse effects that endanger the health and well-being of man;
5. assisting in coordinating among the Federal departments and agencies those programs and activities which affect, protect, and improve environmental quality;
6. assisting the Federal departments and agencies in the development and interrelationship of environmental quality criteria and standards established throughout the Federal Government;
7. collecting, collating, analyzing, and interpreting data and information on environmental quality, ecological research, and evaluation.

(e) The Director is authorized to contract with public or private agencies, institutions, and

organizations and with individuals without regard to section 3324(a) and (b) of Title 31 and section 5 of Title 41 in carrying out his functions.

42 USC § 4373.

Each Environmental Quality Report required by Public Law 91-190 shall, upon transmittal to Congress, be referred to each standing committee having jurisdiction over any part of the subject matter of the Report.

42 USC § 4374.

There are hereby authorized to be appropriated for the operations of the Office of Environmental Quality and the Council on Environmental Quality not to exceed the following sums for the following fiscal years which sums are in addition to those contained in Public Law 91- 190:

- (a) \$2,126,000 for the fiscal year ending September 30, 1979.
- (b) \$3,000,000 for the fiscal years ending September 30, 1980, and September 30, 1981.
- (c) \$44,000 for the fiscal years ending September 30, 1982, 1983, and 1984.
- (d) \$480,000 for each of the fiscal years ending September 30, 1985 and 1986.

42 USC § 4375.

(a) There is established an Office of Environmental Quality Management Fund (hereinafter referred to as the "Fund") to receive advance payments from other agencies or accounts that may be used solely to finance --

- 1. study contracts that are jointly sponsored by the Office and one or more other Federal agencies; and
- 2. Federal interagency environmental projects (including task forces) in which the Office participates.

(b) Any study contract or project that is to be financed under subsection (a) of this section may be initiated only with the approval of the Director.

(c) The Director shall promulgate regulations setting forth policies and procedures for operation of the Fund.

Presidential Documents
5897
Federal Register
Vol. 69, No. 25
Friday, February 6, 2004
Title 3—
The President
Executive Order 13327 of February 4, 2004
Federal Real Property Asset Management

By the authority vested in me as President by the Constitution and the laws of the United States of America, including section 121(a) of title 40, United States Code, and in order to promote the efficient and economical use of Federal real property resources in accordance with their value as national assets and in the best interests of the Nation, it is hereby ordered as follows:

Section 1. Policy. It is the policy of the United States to promote the efficient and economical use of America's real property assets and to assure management accountability for implementing Federal real property management reforms. Based on this policy, executive branch departments and agencies shall recognize the importance of real property resources through increased management attention, the establishment of clear goals and objectives, improved policies and levels of accountability, and other appropriate action.

Sec. 2. Definition and Scope. (a) For the purpose of this executive order, Federal real property is defined as any real property owned, leased, or otherwise managed by the Federal Government, both within and outside the United States, and improvements on Federal lands. For the purpose of this order, Federal real property shall exclude: interests in real property assets that have been disposed of for public benefit purposes pursuant to section 484 of title 40, United States Code, and are now held in private ownership; land easements or rights-of-way held by the Federal Government; public domain land (including lands withdrawn for military purposes) or land reserved or dedicated for national forest, national park, or national wildlife refuge purposes except for improvements on those lands; land held in trust or restricted fee status for individual Indians or Indian tribes; and land and interests in land that are withheld from the scope of this order by agency heads for reasons of national security, foreign policy, or public safety.

(b) This order shall not be interpreted to supersede any existing authority under law or by executive order for real property asset management, with the exception of the revocation of Executive Order 12512 of April 29, 1985, in section 8 of this order.

Sec. 3. Establishment and Responsibilities of Agency Senior Real Property Officer. (a) The heads of all executive branch departments and agencies cited in sections 901(b)(1) and (b)(2) of title 31, United States Code, and the Secretary of Homeland Security, shall designate among their senior management officials, a Senior Real Property Officer. Such officer shall have the education, training, and experience required to administer the necessary functions of the position for the particular agency.

(b) The Senior Real Property Officer shall develop and implement an agency asset management planning process that meets the form, content, and other requirements established by the Federal Real Property Council established in section 4 of this order. The initial agency asset management plan will be submitted to the Office of Management and Budget on a date determined by the Director of the Office of Management and Budget. In developing this plan, the Senior Real

Property Officer shall:

- (i) identify and categorize all real property owned, leased, or otherwise managed by the agency, including, where applicable, those properties outside the United States in which the lease agreements and arrangements reflect the host country currency or involve alternative lease plans or rental agreements;
 - (ii) prioritize actions to be taken to improve the operational and financial management of the agency's real property inventory;
 - (iii) make life-cycle cost estimations associated with the prioritized actions;
 - (iv) identify legislative authorities that are required to address these priorities;
 - (v) identify and pursue goals, with appropriate deadlines, consistent with and supportive of the agency's asset management plan and measure progress against such goals;
 - (vi) incorporate planning and management requirements for historic property under Executive Order 13287 of March 3, 2003, and for environmental management under Executive Order 13148 of April 21, 2000; and
 - (vii) identify any other information and pursue any other actions necessary to the appropriate development and implementation of the agency asset management plan.
- (c) The Senior Real Property Officer shall be responsible, on an ongoing basis, for monitoring the real property assets of the agency so that agency assets are managed in a manner that is:
- (i) consistent with, and supportive of, the goals and objectives set forth in the agency's overall strategic plan under section 306 of title 5, United States Code;
 - (ii) consistent with the real property asset management principles developed by the Federal Real Property Council established in Section 4 of this order; and
 - (iii) reflected in the agency asset management plan.
- (d) The Senior Real Property Officer shall, on an annual basis, provide to the Director of the Office of Management and Budget and the Administrator of General Services:
- (i) information that lists and describes real property assets under the jurisdiction, custody, or control of that agency, except for classified information; and
 - (ii) any other relevant information the Director of the Office of Management and Budget or the Administrator of General Services may request for inclusion in the Government-wide listing of all Federal real property assets and leased property.
- (e) The designation of the Senior Real Property Officer shall be made by agencies within 30 days after the date of this order.

Sec. 4. Establishment of a Federal Real Property Council.(a) A Federal Real Property Council (Council) is established, within the Office of Management and Budget for administrative purposes, to develop guidance for, and facilitate the success of, each agency's asset management plan. The Council shall be composed exclusively of all agency Senior Real Property Officers, the Controller of the Office of Management and Budget, the Administrator of General Services, and any other full-time or permanent part-time Federal officials or employees as deemed necessary by the Chairman of the Council. The Deputy Director for Management of the Office of Management and Budget shall also be a member and shall chair the Council. The Office of Management and Budget shall provide funding and administrative support for the Council, as appropriate.

(b) The Council shall provide a venue for assisting the Senior Real Property Officers in the development and implementation of the agency asset management plans. The Council shall work with the Administrator of General Services to establish appropriate performance measures to determine the effectiveness of Federal real property management. Such performance measures shall include, but are not limited to, evaluating the costs and benefits involved with acquiring, repairing, maintaining, operating, managing, and disposing of Federal real properties at particular agencies. Specifically, the Council shall consider, as appropriate, the following performance measures:

- (i) life-cycle cost estimations associated with the agency's prioritized

actions;

(ii) the costs relating to the acquisition of real property assets by purchase, condemnation, exchange, lease, or otherwise;

(iii) the cost and time required to dispose of Federal real property assets and the financial recovery of the Federal investment resulting from the disposal;

(iv) the operating, maintenance, and security costs at Federal properties, including but not limited to the costs of utility services at unoccupied properties;

(v) the environmental costs associated with ownership of property, including the costs of environmental restoration and compliance activities;

(vi) changes in the amounts of vacant Federal space;

(vii) the realization of equity value in Federal real property assets;

(viii) opportunities for cooperative arrangements with the commercial real estate community; and

(ix) the enhancement of Federal agency productivity through an improved working environment. The performance measures shall be designed to enable the heads of executive branch agencies to track progress in the achievement of Government-wide property management objectives, as well as allow for comparing the performance of executive branch agencies against industry and other public sector agencies.

(c) The Council shall serve as a clearinghouse for executive agencies for best practices in evaluating actual progress in the implementation of real property enhancements. The Council shall also work in conjunction with the President's Management Council to assist the efforts of the Senior Real Property Officials and the implementation of agency asset management plans.

(d) The Council shall be organized and hold its first meeting within 60 days of the date of this order. The Council shall hold meetings not less often than once a quarter each fiscal year.

Sec. 5. *Role of the General Services Administration.* (a) The Administrator of General Services shall, to the extent permitted by law and in consultation with the Federal Real Property Council, provide policy oversight and guidance for executive agencies for Federal real property management; manage selected properties for an agency at the request of that agency and with the consent of the Administrator; delegate operational responsibilities to an agency where the Administrator determines it will promote efficiency and economy, and where the receiving agency has demonstrated the ability and willingness to assume such responsibilities; and provide necessary leadership in the development and maintenance of needed property management information systems.

(b) The Administrator of General Services shall publish common performance measures and standards adopted by the Council.

(c) The Administrator of General Services, in consultation with the Federal Real Property Council, shall establish and maintain a single, comprehensive, and descriptive database of all real property under the custody and control of all executive branch agencies, except when otherwise required for reasons of national security. The Administrator shall collect from each executive branch agency such descriptive information, except for classified information, as the Administrator considers will best describe the nature, use, and extent of the real property holdings of the Federal Government.

(d) The Administrator of General Services, in consultation with the Federal Real Property Council, may establish data and other information technology (IT) standards for use by Federal agencies in developing or upgrading Federal agency real property information systems in order to facilitate reporting on a uniform basis. Those agencies with particular IT standards and systems in place and in use shall be allowed to continue with such use to the extent that they are compatible with the standards issued by the Administrator.

Sec. 6. General Provisions. (a) The Director of the Office of Management and Budget shall review, through the management and budget review processes, the efforts of departments and agencies in implementing their asset management plans and achieving the Government-wide property management policies established pursuant to this order.

(b) The Office of Management and Budget and the General Services Administration shall, in consultation with the landholding agencies, develop legislative initiatives that seek to improve Federal real property management through the adoption of appropriate industry management techniques and the establishment of managerial accountability for implementing effective and efficient real property management practices.

(c) Nothing in this order shall be construed to impair or otherwise affect the authority of the Director of the Office of Management and Budget with respect to budget, administrative, or legislative proposals.

(d) Nothing in this order shall be construed to affect real property for the use of the President, Vice President, or, for protective purposes, the United States Secret Service.

Sec. 7. Public Lands. In order to ensure that Federally owned lands, other than the real property covered by this order, are managed in the most effective and economic manner, the Departments of Agriculture and the Interior shall take such steps as are appropriate to improve their management of public lands and National Forest System lands and shall develop appropriate legislative proposals necessary to facilitate that result.

Sec. 8. Executive Order 12512 of April 29, 1985, is hereby revoked.

Sec. 9. Judicial Review. This order is intended only to improve the internal management of the executive branch and is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity, against the United States, its departments, agencies, or other entities, its officers or employees, or any other person.

THE WHITE HOUSE,

February 4, 2004.

Appendix D: Identified and Potential Archaeological Site Descriptions and Current Status

The following is a tabulated list of identified, known, and potential archaeological sites within the installation boundaries. Locational information is not given per AR, ARPA, and NAGPRA regulations.

	Relocated/Identified, Not Yet Reported to NJSM/ NJ HPO				
	Potentially Eligible and/or Protected				
SITE NUMBER	DESCRIPTION	NRHP ELIGIBLE/LEVEL OF INVESTIGATION	EXISTING SITE CONDITIONS	REFERENCE	COMMENTS
28-Mr-265/PA-80/80a	Walton Family Graveyard and Cemetery of Rev. War Soldiers/NJ Militia; Hessian POWs; and the Walton, Doland, Burwell, and Wiggins Family's	UNDETERMINED AND POTENTIALLY ELIGIBLE UPON FURTHER RESEARCH	FORESTED AND PROTECTED BY REGULATIONS	History of Morris Co. 1882; Perry and Sandy 1994; Sandy, Morrell, and Rutsch 1995; Simms and Bevan 1995; Panamerican 2001 ICRMP; Wood and Rush 2005	
28-Mr-275	Small Prehistoric Lithic Workshop/Scatter	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND UNDETERMINED	Panamerican 1997-2003	
28-Mr-276	Small Prehistoric Lithic Workshop/Scatter	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND UNDETERMINED	Panamerican 1997-2003	
28-Mr-277	Small Prehistoric Lithic Workshop/Scatter	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND UNDETERMINED	Panamerican 1997-2003	
28-Mr-278	Small Prehistoric Lithic Workshop/Scatter	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND UNDETERMINED	Panamerican 1997-2003	
28-Mr-279	20th Century Bottle/ Trash Dump	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND UNDETERMINED	Robinson 1887; Klein et al. 1986; WES 1995; Panamerican 1997-2003	Potentially Related to Site PA-31 of pre 1887 J. Buckley Structure
28-Mr-280	Small Prehistoric Lithic Workshop/Scatter or Hunting Campsite	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Panamerican 1997-2003	Relocated October 2008; CERCLA 162 area nearby
28-Mr-281	Collection of Small Prehistoric Lithic Workshop/Scatter(s)	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND UNDETERMINED	Panamerican 1997-2003	
28-Mr-282	Collection of Small Prehistoric Lithic Workshop/Scatter(s)/Historic Stone Wall and Abandoned Road	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND UNDETERMINED	Hopkins 1867; Beers 1868; Panamerican 1997-2003	Potentially Related to Site PA-97 of pre-1867 A. Walton Dwelling
28-Mr-283	18th-20th Century Historic Refuse	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED; PARTIALLY PREVIOUSLY DEVELOPED; AND UNDETERMINED	Hopkins 1867; Beers 1868; Panamerican 1997-2003	Potentially Related to Site PA-97 of pre-1867 A. Walton Dwelling
28-Mr-284	Small Prehistoric Foraging Campsite	NO- PHASE II	FORESTED AND GOOD CONDITION	Panamerican 1997-2003	Relocated October 2008
28-Mr-285	Prehistoric Lithic Workshop/Scatter	NO- PHASE II	FORESTED AND FAIR CONDITION	Panamerican 1997-2003	Relocated October 2008; within RCI Ground Lease Trail to North Pond
28-Mr-286	Small Prehistoric Lithic Workshop/Scatter	NO- PHASE II	DISTURBED- AQUATIC PARK	Panamerican 1997-2003	DESTROYED
28-Mr-287	Small Prehistoric Lithic Workshop/Scatter	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND UNDETERMINED	Panamerican 1997-2003	Potentially related to PA-105 (P-3) near Bldg 975
28-Mr-314/ P-1/ PA-103	Late Archaic-Early Woodland/ Late Woodland Repeated Short-Term Logistical Camp Site	PENDING	PREVIOUSLY DEVELOPED	Anonymous 1944; Klein et al. 1986; Fitch and Glover 1990; Tetra Tech 2005-2007	Initially recorded as Prehistoric Site - 1 (P-1/PA-103); Hearth Found at 30-40 cmbs dating to AD 1450
28-Mr-315	19-20th Century Brick Cistern; Lake Denmark Naval Depot Cistern (?)	NO- PHASE I	FORESTED AND GOOD CONDITION	Panamerican 1999; Tetra Tech 2005-2006	Potentially Related to Denmark Mine, Lake Denmark Hotel, historic dwelling along Lake Denmark Road - PA-58, 60, 61, 62, 85, 99, or 100, or potentially even Naval Depot and the Lake itself
28-Mr-321/PA-51, 52, & 53	Historic Forge Farm- Palmer/Elliott and Blakely Homestead Sites	SHPO OPINION- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Sandy and Rutsch 1986-1991	Relocated June 2007
28-Mr-322/PA-66 & 67	Historic Forge Farm- 1 Structure (Dwelling); F. Kitchel Structure; J. Kitchel Structure; 2 A.F. Kitchel Structures; 4 Structures; 3 Cogswell Structures; 2 Unnamed Structures	SHPO OPINION- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887; Sandy and Rutsch 1986-1991	Relocated June 2007
28-Mr-323	Stone Fences, Unmortared Stone Retaining Walls, Brick Structure Remains, Domestic Refuse Scatter- Mid-to-Late 19th Century; Associated with Low Intensity Dumping and/or a Potential Animal Pen for the Doland and/or Walton Families	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Panamerican 2008	Potentially related to PA-32

28-Mr-324	Mortared Cut-Stone Foundation, Mortared Cobble Chimney with Clay Flue, Brick Column- Predates Adjacent Drainage Ditches, Possibly Related to Early Arsenal Development	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Panamerican 2008	
28-Mr-325/ PA-31, 31a, & 96	19th Century J. Buckley Dwelling, Domestic Refuse Scatter and Historic Features	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Robinson 1887; Panamerican 2008	
28-Mr-326/ PA-26a	19th Century stone fenced enclosure and potential animal pen yard identified previously as site PA-26a and the Walton Farm.	NO- PHASE I	FORESTED AND GOOD CONDITION	Faden 1778; Lightfoot and Geil 1853; Beers 1868; Panamerican 2001 ICRMP; Panamerican 2008	
28-Mr-327	Late 19th to early 20th Century Domestic Refuse Scatter Possibly Associated with Pre-1867 J. Brown dwelling (PA-29), a Structure Associated with Mills, Doland, and Whiteham (PA-25), or Sickles Dwelling	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887; Panamerican 2008	Potentially related to PA-25 and/or PA-29
28-Mr-330	Late to Terminal Archaic Camp Site in Diverse Environmental Area; potential rock overhangs; potential petroglyph sites	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Huggan 2008	
28-Mr-331	Late to Terminal Archaic Camp Site in Diverse Environmental Area; potential rock overhangs; potential petroglyph sites	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Huggan 2008	
28-Mr-332	Late to Terminal Archaic Camp Site in Diverse Environmental Area; potential rock overhangs; potential petroglyph sites	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Huggan 2008	
28-Mr-333	Late to Terminal Archaic Camp Site in Diverse Environmental Area; potential rock overhangs; potential petroglyph sites	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD CONDITION	Huggan 2008	
PA-1/1a	Sandstone Quarry	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-2/2a	Pre-1853 W.E. Wiggins Farmstead- 3 Structures (1 Dwelling); W. Murdock Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-3/3a	Pre-1853 Residence owned by W.E. Wiggins- 1 Structure (Dwelling); W. Murdock Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-4/4a	Pre-1887 Albert Davidson Residence	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-5/5a	Pre-1887 Albert Davidson Residence	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-6	Route of Morris County Railroad; Abandoned	NO- PHASE I AND HABS/HAER DETERMINATION	BROKEN APART ACROSS INSTALLATION	Robinson 1887; Panamerican 1999	Entire Length of Railroad Trackage is Not Eligible across the installation
PA-7	Pre-1853 William Whitehead Residence; 1 Structure (Dwelling)	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868	Not Relocated
PA-8/8a	Pre- 1853 W. Haycock Residence- 1 Structure (Dwelling)	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER	Lightfoot and Geil 1853; Hopkins 1867; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-9	Pre-1853 Jno. E. Kindred Farmstead; 4 Structures (1 Dwelling); Unnamed Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated
PA-10/10a/10b (PA-78)	Pre- 1781 Mt. Pleasant Forge	UNDETERMINED- Historic Map Research	NOT ON INSTALLATION PROPERTY; LIKELY DISTURBED BY ROUTE 15	Hills 1781; Gordon 1828; Lightfoot and Geil 1853; History of Morris County; 1882; Boyce 1931; PAL 1989	Not Relocated; PA-10 is mapped off installation boundary
PA-11	Pre-1853 Structure next to Jos. T. Hoff Residence; Unnamed Structure	UNDETERMINED- Historic Map Research	NOT ON INSTALLATION PROPERTY; LIKELY DISTURBED BY ROUTE 15	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated; mapped off installation boundary

PA-12	Site of 2 Structures; Later J.T. Hoff Structure; Unnamed Structure	UNDETERMINED- Historic Map Research	NOT ON INSTALLATION PROPERTY; LIKELY DISTURBED BY ROUTE 15	Lightfoot and Geil 1853; Beers 1868; Robinson 1887	Not Relocated; mapped off installation boundary
PA-13	Pre-1853 C. Hoff Residence; 1 Structure (Dwelling); H. Baker Structure; H. Hoff Structure	UNDETERMINED- Historic Map Research	NOT ON INSTALLATION PROPERTY; LIKELY DISTURBED BY ROUTE 15	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated; mapped off installation boundary
PA-14	Pre-1853 Gate; 1 Structure; Toll Gate; Unnamed Structure	UNDETERMINED- Historic Map Research	NOT ON INSTALLATION PROPERTY; LIKELY DISTURBED BY ROUTE 15	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated; mapped off installation boundary
PA-15	Pre-1853 S.T. Babbit Residence; 1 Structure (Dwelling); H. Baker Structure	UNDETERMINED- Historic Map Research	NOT ON INSTALLATION PROPERTY; LIKELY DISTURBED BY ROUTE 15	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated; mapped off installation boundary
PA-16/16a (PA-87)	Pre-1887 Structure near W. Spicer Residence	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-17/17a (PA-88)	Pre-1867 Farmstead; 4 Structures (1 Dwelling) later owned by J. Spicer	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Hopkins 1867; Beers 1868; Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-18	Pre-1887 Structure near Mrs. Nichol's Residence	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887	Not Relocated
PA-19/19a (PA-89)	Pre-1887 Structure near C. Spicer Residence	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-20	Pre-1887 L. Spicer established Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887	Not Relocated
PA-21	Pre-1887 L. Spicer established Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887	Not Relocated
PA-22	Pre-1887 L. Spicer established Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887	Not Relocated
23/23a/23b (PA-94)	Pre-1887 Mrs. E. Nichols Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887	Not Relocated
PA-24/24a (PA-95)	Pre-1853 H. Ford Estate Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-25	Pre-1853 Mrs. Mills Structure (Farmstead); Miss Doland Structure; R. Whiteham Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated
PA-26	Pre-1853 Walton Farm (?); P. Agan Structure	UNDETERMINED- Historic Map Research	FORESTED AND GOOD CONDITION	Faden 1778; Lightfoot and Geil 1853; Beers 1868; Panamerican 2001 ICRMP	Relocated
PA-27	Pre-1853 S.F. Righter Farmstead; 3 Structures; W.H. Wiggins Structure; Headquarters Structure; Cannon Ball and Areas of Slag and High Metal Debris Content	UNDETERMINED- Historic Map Research; UXO IDENTIFIED; PHASE I RECOMMENDATIONS	FORESTED AND PARTIALLY DISTURBED CONDITION (UXO ISSUES REMAIN)	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887; Huggan 2008 (via Malcolm Pirnie UXO investigation)	Relocated
PA-28	Pre-1867 Farmstead 2 Structures (1 Dwelling); W. Fredericks Structure; J. Buckley Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated
PA-29	Pre-1887 J. Brown Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887	Not Relocated
PA-30	Pre-1887 M. Crow Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Robinson 1887	Not Relocated
PA-32	Pre-1867 Structure (Dwelling); A. Walton Structure	UNDETERMINED- Historic Map Research	FORESTED AND GOOD CONDITION	Hopkins 1867; Beers 1868; Panamerican 2008	Potentially Relocated as Site 28-Mr-323
PA-33	Pre-1853 S.F. Righter Farmstead; 2 Structures (1 Dwelling); Geo. A Righter Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868	Not Relocated
PA-34	Pre-1867 (Dwelling); Geo. A. Righter Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Hopkins 1867; Beers 1868	Not Relocated

PA-35	Pre-1853 Farmstead S.F. Righter Structure; 2 Structures (1 Dwelling); Geo. A. Righter Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868	Not Relocated
PA-36	Pre-1853 Structure owned by S.F. Righter; 1 Structure (Dwelling); Geo. A. Righter Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868	Not Relocated
PA-37	Etra (Aetna) Forge; Middle Forge- 1 Structure; Forge- 2 Structures	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Erskine 1777; Mills 1781; Gordon 1828; Lightfoot and Geil 1853; Hopkins 1867; Beers 1868	Not Relocated
PA-38	Pre-1853 Farmstead(?) owned by S.F. Righter; 2 Structures	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867	Not Relocated
PA-39	Pre-1867 Structure (Dwelling); Geo. A. Righter Residence	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Hopkins 1867; Beers 1868	Not Relocated
PA-40	Pre-1867 Unidentified Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Hopkins 1867	Not Relocated
PA-41	Pre-1867 Structure; Geo. A. Righter Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Hopkins 1867; Beers 1868	Not Relocated
PA-42	Pre-1867 Unidentified Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Hopkins 1867	Not Relocated
PA-43	Pre-1853 Structure owned by S.F. Righter; 1 Structure (Dwelling)	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867	Not Relocated
PA-44	Site of Pre-1853 Schoolhouse; 1 Structure; School #3	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated
PA-45/45a	Pre-1853 M. Doland Farmstead; 6 Structures (2 Dwellings); M. Doland Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-46	Pre-1853 C. Tebo Structure; 1 Structure (Dwelling)	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER	Lightfoot and Geil 1853; Hopkins 1867	Not Relocated
PA-47/47a (PA-102)	Site of Quarry	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	No Map- circa 1890; WES 1995; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-48/48a	Site of Pre-1887 A. Stickle Structure (Foundation Still Present)	UNDETERMINED- Historic Map Research	FORESTED AND GOOD CONDITION	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-49	Pre-1853 Schoolhouse	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Lightfoot and Geil 1853	Not Relocated
PA-50/50a (PA-101)	Pre-1853 G.W. Blakely Farmstead; 4 Structures; Elliott Co. Mining Ho.; E. Merrit Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-54	Site of 21 Pre-1867 Structures (1 Dwelling)	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (JVDV 1990s)	Hopkins 1867	Relocated by Van De Venter Hunting Maps
PA-55	1 Structure (Dwelling)	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Hopkins 1867	Not Relocated
PA-56	1 Structure (Dwelling); Mrs. M. Barrens Structure; J. Barnes Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Hopkins 1867; Beers 1868; Robinson 1887	Not Relocated
PA-57	Herman Forge (?); Location of Pre-1867 Mine; Denmark Mine	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED; FORESTED AND UNDETERMINED	Faden 1778; Hopkins 1867; Robinson 1887; Bayley 1910	Not Relocated
PA-58	Pre-1853 E.R. Biddle Structure; 2 Structures (1 Dwelling); E. Feedler Structure; Unnamed Structure	UNDETERMINED- Historic Map Research	FORESTED AND GOOD CONDITION	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Relocated

PA-59	S.B. Marsh Structure	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Lightfoot and Geil 1853	Not Relocated
PA-60	E.R. Biddle Structure; 1 Structure (Dwelling); E. Feedier Structure; Unnamed Structure	UNDETERMINED- Historic Map Research	FORESTED AND GOOD CONDITION	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887	Relocated
PA-61	Denmark Forge; E.R. Biddle Forge; Forge (2 Structures); Forge and Coal Ho.; Wharton and Northern Railroad; Lake Denmark Hotel 1906	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Erskine 1777; Mills 1781; Gordon 1828; Lightfoot and Geil 1853; Hopkins 1867; Beers 1868	Not Relocated
PA-62/62a (PA-99)	Saw Mill	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-63/63a	Unnamed Structure; 1 Structure; E. Merrit Structure	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lightfoot and Geil 1853; Hopkins 1867; Beers 1868; Robinson 1887; PAL 1989	Not Relocated
PA-64/64a (100)	E.R. Biddle Structure; 1 Structure (Foundations and Features Still Present)	UNDETERMINED- Historic Map Research	FORESTED AND GOOD CONDITION	Lightfoot and Geil 1853; Hopkins 1867; PAL 1989; Panamerican 2001 ICRMP	Relocated
PA-65	L. Bruden Saw Mill	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Lightfoot and Geil 1853; Hopkins 1867	Not Relocated
PA-68	Railroad Spur	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1877; Lowenthal 1981	Not Relocated
PA-69	Winter and Pardee Mines; Chester Iron Co. Mine	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; Bayley 1910	Not Relocated
PA-70	Unnamed Structure (Features Still Present)	UNDETERMINED- Historic Map Research	FORESTED AND GOOD CONDITION	Robinson 1877	Relocated
PA-71	1 Structure (Dwelling); J. Vanderbilt Structure (Foundations and Features Still Present)	UNDETERMINED- Historic Map Research	FORESTED AND GOOD TO FAIR CONDITION (NEAR ACTIVE RANGE)	Hopkins 1867; Beers 1868; Robinson 1887	Relocated
PA-72	Thom. Lynch Structure (Foundations and Features Still Present)	UNDETERMINED- Historic Map Research	FORESTED AND GOOD TO FAIR CONDITION (NEAR ACTIVE RANGE)	Robinson 1887	Relocated
PA-73/74	Mill	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Gordon 1828	Not Relocated
PA-75/75a	18th Century Limestone Quarry for Mt. Hope Furnace	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	War Plans Division 1931; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-76	18th Century Limestone Quarry for Mt. Hope Furnace (location approx.)	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	War Plans Division 1931	Not Relocated
PA-77/77a (98)	19th Century Samuel Merrit Forge (location approx.)	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	History of Morris Co. 1882; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-79/79a	Mt. Hope Baptist Church and Cemetery	UNDETERMINED- Historic Map Research	NOT ON INSTALLATION PROPERTY; PROTECTED BY ROCKAWAY TWP	History of Morris Co. 1882; Panamerican 2001 ICRMP	Not on installation property
PA-81	Mt. Pleasant Station (circa 1900)	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Lowenthal 1981	Not Relocated
PA-82	Picatinny Station (circa 1900)	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED	Lowenthal 1981	Not Relocated
PA-83	Factory Station (circa 1900) (Foundations and Features Still Present)	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS (UXO ISSUES REMAIN)	FORESTED AND DISTURBED CONDITION (UXO ISSUES REMAIN)	Lowenthal 1981; Panamerican 2008	Relocated but not given site number due to potential UXO anomaly concerns. Needs further investigation
PA-84/84a	Navy Dept. Station (circa 1900)	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER; UNDETERMINED	Lowenthal 1981	Not Relocated
PA-85	Lake Denmark Station (circa 1900) (Foundations and Features Still Present)	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER	Lowenthal 1981	Relocated

PA-86	19th Century Charcoal Kiln	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED	Sandy and Rutsch 1986-1991	Not Relocated
PA-90	L. Spicer established Dwelling	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-91	L. Spicer established Dwelling	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-92	L. Spicer established Dwelling	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED (2002 Aerial)	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-93	L. Spicer established Dwelling	UNDETERMINED- Historic Map Research	LIKELY PREVIOUSLY DEVELOPED OVER	Robinson 1887; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-97	A. Walton Dwelling	UNDETERMINED- Historic Map Research	FORESTED AND UNDETERMINED	Hopkins 1867; Beers 1868; PAL 1989; Panamerican 2001 ICRMP	Not Relocated
PA-104/P-2	Whitam Farm Complex	UNDETERMINED- Report Research	FORESTED AND DISTURBED CONDITION	Klein et al. 1986; Fitch and Glover 1990; Panamerican 1996 ICRMP; Panamerican 2008	Relocated as an Isolated Area; Destroyed in 1926 Lake Denmark Explosion; near Mt. Hope Gate
PA-105/P-3	Arrowheads	UNDETERMINED- Report Research	LIKELY PREVIOUSLY DEVELOPED OVER	Klein et al. 1986; Fitch and Glover 1990; Panamerican 2001 ICRMP	Not Relocated; Bldg 975 Area, No Longer Standing
PA-106/P-4	Projectile Point	UNDETERMINED- Report Research	LIKELY PREVIOUSLY DEVELOPED OVER	Klein et al. 1986; Fitch and Glover 1990; Panamerican 2001 ICRMP	Not Relocated; Old Personnel Bldg
PA-107	Projectile Point	UNDETERMINED- ISOLATED FIND	FORESTED AND UNDETERMINED	Huggan 2008	
PA-108	Stone Foundation, Robert H. Poggenburg (?) Dwelling	UNDETERMINED- ISOLATED FIND	FORESTED AND UNDETERMINED	Huggan 2008	
PA-109	Stone Privy Foundation/Spicertown (?) related Dwelling	UNDETERMINED- ISOLATED FIND	FORESTED AND UNDETERMINED	Huggan 2008	Potentially related to PA-19a/89
PA-110	Rockshelter, overhangs and one documented Surface Feature	UNDETERMINED- PHASE I W/ PHASE II RECOMMENDATIONS	FORESTED AND GOOD TO FAIR CONDITION (NEAR ACTIVE RANGE)	Panamerican 2008	Relocated

Appendix E: Historic Buildings Assessment Catalog

The following is a tabulated list of existing structures, associated Real Property auxiliary structures and landscape features, and known demolished structures with documentation and/or interview confirmation. This list is in a DRAFT format.

Appendix F: Treatment Plans for Historic Structures, Resources and References

This Appendix presents recommendations intended as a resource to assist Picatinny Arsenal personnel in their planning of projects involving properties determined to be eligible for listing in, or listed in, the NRHP, either individually or as part of a district. The majority of these resources and references were gathered from the 2001-2006 ICRMP and have not been further updated to mesh with certain engineering design standards. As a result, this Appendix should be used as a guidance tool consistent with *The Secretary of the Interior's Standards for the Treatment of Historic Properties*.

This Appendix are organized by material, although particular items, such as windows and doors, have been separately addressed. Individual architectural features or systems (i.e., roofing, siding, etc.) are generally considered significant if they are original, reflect the original design intent for the building, reflect period or regional styles or building practices, reflect changes to the building resulting from major periods or events, or are examples of exceptional craftsmanship or design.

1. -- Architects, engineers and contractors with specific experience in preservation projects should be engaged for the planning and implementation of all projects affecting historic resources. Because of the difficulty in obtaining replacement materials to match those no longer manufactured, the reuse of salvaged materials is recommended. For NRHP properties, retention of the original/significant features, volumes, and character defining elements are recommended by *The Secretary's Standards*. At Picatinny, this may include simple interior features, exposed structure, and industrial equipment.

Suggested resources for locating specialty materials for Historic Properties are as follows:

Fielden, Bernard M.

1982 *Conservation of Historic Buildings*. Butterworth & Co., London.

Labine, Clem

1996 *Clem Labine's Traditional Building Catalog: Historic Products for Restoration and New Construction*. Brooklyn, NY.
Old House Journal, Gloucester, MA.

The Technical Center of Expertise

n.d. *Historic Materials Source Book for Army Family Housing*. The Technical Center of Expertise, U.S. Army Corps of Engineers, Seattle District, Seattle, WA.

2. -- New construction also has the potential to damage and destroy significant historic material and features, and to alter the structure's historic and architectural character. Therefore, the decision to add on to existing structures should be made only after alternatives for providing additional space have been explored.

According to the National Park Service, an addition is acceptable if it preserves significant historic materials and features; preserves the historic character; and protects a building's historic significance by making a visual distinction between old and new. In order to avoid damage or destruction of significant historic materials, the actual, physical connection to the historic building should be minimized. Where possible, the addition should be constructed on secondary elevations not highly visible or ornamented. The new addition should not dominate the original building in size, and should be compatible in scale, color, material and character. The appropriate size for an addition varies according to the original building and its context. Finally, a visual distinction should exist between the original building and the new construction. The addition should be obvious and reversible, i.e., if removed at a later date, the original building will not have been irretrievably altered. Examples of incompatible new construction are the addition of a highly visible new floor on a low scale building; the alteration of the historic proportions of a building; an addition that obscures decorative features or ornamentation; and an addition that fills in a planned void, such as a "U" or an "L" configuration.

Suggested resources for locating specialty materials for creating additions for Historic Properties are as follows:

National Trust for Historic Preservation

1980 *Old and New Architecture: Design Relationship*. Preservation Press, Washington, D.C.

Weeks, Kay D.

1987 *Preservation Briefs 14: New Exterior Additions to Historic Buildings: Preservation Concerns*. U.S. Department of the Interior, Washington, D.C.

3. -- The ADA requires both buildings and sites of public accommodations be evaluated to determine if *accessibility* barriers exist. The evaluation will consider an array of features including building and site entrances, surface textures, widths and slopes of walkways, parking, grade changes, weight, size and configuration of doorways, interior corridors and path of travel restrictions, elevators, and public toilets and amenities. This evaluation is often done as part of a complete accessibility survey of the building. Required improvements are detailed in local, state or federal regulations, and most comprehensively in the ADAAG.

For historic buildings, the goal should be to provide the greatest degree of accessibility having the smallest impact on the building's character-defining features. For buildings where a phased approach will be taken to meet ADAAG requirements, the first phase should include making the entrance and primary public spaces accessible. Later phases may include providing access to goods, services, and programs as well as restrooms, amenities and secondary spaces. Programs that provide alternative methods of providing services and information—such as audio visual program or models—may be

an acceptable solution in some installations.

Regarding exteriors, changes at the main entrance have the greatest potential to impact the building's historic appearance. While it is desirable to make the building's primary public entrance accessible, alterations to the main entrance should be avoided if they will adversely affect the structure's historic appearance. A discreetly placed new entrance may be appropriate. Generally, using rear or service entrances to improve access should be avoided. Creation of an accessible entrance may include the incorporation of a ramp, regrading of an entrance, the installation of a wheelchair lift, retrofitting doors (thresholds, doors and hardware) or the creation of a new entrance.

Interior alterations often include the addition of ramps, wheelchair lifts, and inclined stair lifts; the installation or upgrading of an elevator; the retrofitting or replacement of hardware; the modification of interior stairs; the upgrade of restrooms, and modifications of other amenities, such as seating, water fountains, and telephones.

Suggested resources for locating specialty materials for increasing the accessibility of Historic Properties are as follows:

Duncan S. Ballantyne and Harold Russell Associates, Inc.

1983 *Accommodation of Disabled Visitors at Historic Sites in the National Park System*. Park Historic Architecture Division, National Park Service, U.S. Department of the Interior, Washington, D.C.

Goldman, Nancy, ed.

1992 *Readily Achievable Checklist: A Survey for Accessibility*. Adaptive Environments Center, Boston.

Hayward, Judith L., and Thomas C. Jester

1993 *Accessibility and Historic Preservation Resource Guide*. Rev. ed. Historic Windsor, Inc., Windsor, VT. Originally printed in 1992.

Jester, Thomas C., and Sharon C. Park

1991 *Standards for Accessible Design: ADA Accessibility Guidelines (ADAAG)*. U.S. Department of Justice, Washington, D.C.

1993 *Preservation Brief 32: Making Historic Properties Accessible*. U.S. Department of the Interior, Washington, D.C. U.S. Department of Justice.

4. -- Concrete is used throughout the installation for foundations, exterior walls, earth-bermed walls and roofs, walkways, loading docks and barricades. Its original composition and current condition vary widely. Deterioration of concrete is typically due to poor original workmanship, environmental factors, the original use of inferior materials and poor structural design, and inadequate maintenance. In general, deterioration is aggravated by moisture, since concrete is an absorptive material susceptible to damage caused by recurrent freeze-thaw cycles. However, patches and vapor-proof coatings applied in previous repair efforts may in fact trap moisture beneath

the surface and accelerate deterioration. Signs of deterioration include *cracking* (superficial and structural); *spalling* (loss of surface material) often results in exposing of reinforcement; *deflection* at beams, columns, joists, or slabs; *staining* caused by alkali-aggregate reactions that results in white surface stains, by efflorescence resulting from the leaching of lime, or by metals inserted into the concrete or corroding onto the concrete; or *erosion* caused by the weathering of the concrete surface, the mechanical action of water, the lack of drip grooves at protruding elements, such as belt courses and sills, or by poor drainage. In addition, *corrosion* caused by rusting of embedded reinforcing bars causes expansive forces within the concrete, often leading to cracking and spalling.

Repair/Replacement- If plans and specifications for the original concrete are available, these should be used to provide information on the original concrete composition and the type and location of reinforcing bars. A field survey will provide detailed information on condition, and on-site and laboratory testing may provide important information on the position, depth and direction of reinforcement, as well as the presence of internal voids and cracks and concrete composition. Nondestructive testing techniques may include the use of metal detectors, sonic devices, hammer sounding, and moisture measurement.

Concrete repairs and replacement should be undertaken with new material matching the original as exactly as possible in composition, color, strength, and texture. For all repairs, field trials should be undertaken to determine the structural and technical acceptability of the repair.

Cracks- Hairline, nonstructural cracks indicate no change or movement can be left as is; cracks larger than hairline cracks but less than 1/16-inch (1.6 millimeters) should be repaired with a mix of cement and water. Cracks wider than 1/16-inch (1.6 mm) should be repaired with a mix of cement, water, and fine sand. Field tests will determine if the crack must be widened and deepened to provide sufficient penetration of the patching material. Where the structural integrity of the concrete is to be reestablished in stable cracks, epoxy injection repair may be appropriate. Epoxy repair consists of sealing the crack or hole with epoxy mortar, leaving small ports into which the epoxy resin is pumped. Epoxy mortar may or may not be removed, depending on the visibility of the repair; active cracks, such as those that move as loads are added or as temperatures fluctuate, repairs should consist of filling the crack with sealants and carefully detailing the area to ensure integrity and minimize visibility; random map cracks may be repaired by removing the cracked concrete and replacing it with a compatible patch matching the original material. Where visibility is not of primary concern, it may be possible to spray, trowel or brush on a concrete patch. However, this should be regarded as a short term solution.

Spalling and Eroded Surfaces- repairing spalled concrete requires removal of loose, deteriorated concrete and replacement with a compatible patch that mechanically locks into the existing sound concrete. Critical details to note include reinforcement, preparation of the existing substrate, the new patching material, the

development of a good contact between existing and new concrete, and patch curing. Some repairs will require the use of stainless steel anchors or the use of concrete forms; care must be taken to match the finished surface of the existing concrete. Typically, this requires great care in the selection of patching materials, and the execution of the patch.

Deflection- since deflected surfaces indicate structural problems, their repair typically requires the involvement of an engineer. Deflected surfaces often require the replacement or strengthening of existing structural members.

Suggested resources for locating specialty materials for working with historic concrete are as follows:

American Concrete Institute

1980 *Concrete Repair and Restoration*. ACI Compilation No. 5. American Concrete Institute, Detroit. Reprint of *Concrete International: Design & Construction*. Vol. 2, No.9 (September 1980).

Coney, William B.

1987 *Preservation Briefs 15: Preservation of Historic Concrete: Problems and General Approaches*. U.S. Department of the Interior, Washington, D.C.

Prudon, Theodore

1981 *Confronting Concrete Realities*. In *Progressive Architecture* (November), 131-137.

Ropke, John C.

1982 *Concrete Problems, Causes & Cures*. McGraw-Hill, New York.

Sabnis, Gajanan, ed.

1985 *Rehabilitation, Renovation and Preservation of Concrete and Masonry Structures*. ACI-SP-85. American Concrete Institute, Detroit.

5. -- Many buildings at Picatinny are constructed with *brick façades*, most of which are unpainted. Most buildings are simple brickwork, while others have relatively elaborate use of detailing. In addition, many of the chimneys throughout the installation are brick masonry. Historic brick masonry is a durable product whose primary source of deterioration is exposure to moisture and water. Historic bricks are generally softer than their modern counterparts, and the original mortars used with them were more flexible than those used currently. Original mortars had a high lime content, which allowed the mortar to absorb cyclical movement of the structure, in particular at the critical times of freeze-thaw. Most historic brick was recognized as porous, and protected with a paint or stain coating: most typical were red iron oxide/ linseed oil coatings. While brick is intended to be protected from the weather, it is essential it breathes. Only in extreme conditions is the use of waterproof coatings recommended.

The three most common sources of deterioration of historic brick masonry are prolonged

exposure to water, usually due to improper roof drainage, including blocked or inoperative gutters, down spouts and leaders; spalling, due to the use of excessively hard repointing mortars; and, exposure to moisture and salts at grade. Signs of deterioration include rust staining from concealed fasteners, white surface staining or build-up due to the mitigation of salts, and cracking and spalling of brick due to water or excessively hard mortar installed during previous repointing efforts.

Repair/Replacement- The most common repairs to brick are cleaning, repointing, and replacement of damaged units.

Cleaning- In general, cleaning of historic brick surfaces should be undertaken only when the dirt or stains are deleterious to the masonry surfaces, or when appreciation of the building's architectural character and detail is impeded. Cleaning methods include abrasive cleaning, chemical cleaning, paint removal, poulticing, and water washing. Although the most commonly used medium in abrasive cleaning, sand is rarely recommended for historic brick masonry since it tends to abrade the brick surfaces. A host of alternate materials are available for use in abrasive cleaning methods, and include, but are not limited to, pulverized walnut shells, ground corncobs, crushed eggshells, and glass beads. In addition, poulticing methods draw the stain out of the masonry material may be successful in certain instances, such as removing stains of oil, tar, plant materials, graffiti, and metallic stains, and some types of salt. Successful application of any of these techniques requires a skilled operator. The most common cleaning method is the use of chemical cleaners. These chemicals are classified as either acidic (low pH) or alkaline. Acidic cleaners are appropriate for use on most unglazed brick; alkaline cleaners are most appropriate on glazed brick. Acidic cleaners are applied to the masonry, and removed with a thorough water rinse or a neutralizer. Alkaline clears are rinsed off in two steps, first with a slightly acidic wash and second with a straight water wash. Damage can be caused if the chemical is not appropriately diluted, if cleaning occurs when there is a risk of water freezing or when the masonry is insufficiently rinsed following cleaning, or if excessive water pressure (over 400 psi) is used in the operation. Test samples are critical to determine the exact materials and methods to use to prevent damage to the masonry.

Repointing- Also known as tuckpointing, this method involves installation of mortar at joints eroded or mechanically removed. In general, 100 percent repointing of a building is not recommended. Instead, only those joints where mortar is missing or unsound should be repointed. Repointing mortar should match the original as closely as possible in all visual and physical characteristics. Premixed, bagged mortar commonly available is not appropriate for historic masonry since it is too hard and can cause cracking of the (softer) brick units, and since its grey color, contributed by the grey portland cement, rarely matches the more buff colors typical of historic mortars. New mortar should have high lime content, and be prepared from a mix of lime and sand in water. White portland cement may be substituted for up to 20 percent of the lime, if desired. Color mix can be achieved by the use of carefully selected colored sand or by the addition of pigment. Proper techniques for repointing are critical. At least a ½-inch (1.3 centimeters) of mortar must be installed in order to assure a lasting repair. Joints must be

finished with a profile matching the original. Joints must be held back from the face of the brick, and struck to shed water. Face grouting, where new mortar is less than ½-inch (1.3 cm) in depth, is not appropriate.

Replacement Units- Where brick masonry is extremely deteriorated, replacement in kind must occur. Care must be used to select sound and matching bricks for all repairs. Specialty brick is available from a variety of sources, and efforts to identify matching brick units should be required.

6. -- For building foundations, the most common material used throughout the installation is *puddingstone*, a locally quarried quartz/granite conglomerate. Less common is the use of this stone for building exteriors. In addition, granite and limestone are used for select areas of building, such as foundations and a variety of architectural detailing. Stones commonly used for historic structures are granite, marble, limestone, and sandstone. While originally selected for their durability and aesthetic appearance, some stone is extremely susceptible to damage. Damage is generally caused by exposure to the elements, in particular water, ice and acid rain, or by improper original laying techniques, as is often the case with certain sandstones. While harder stones such as granite may be affected only negligibly by climatic conditions and hardness of the mortar, factors such as these can have significant impacts on the more vulnerable stones, such as brownstones, limestone, and marble. Proper techniques for all aspects of work are critical, and work must be executed by skilled labor.

As is the case with brick masonry, the breathability of the stone is essential. Impermeable waterproof coatings are not recommended, unless extreme conditions exist and field tests have determined the necessity of a coating.

The three most common sources of deterioration for historic stone masonry are prolonged exposure to water due to improper roof drainage, including blocked or inoperative gutters, down spouts and leaders; spalling, due to the use of excessively hard repointing mortars; and, exposure to moisture and salts at grade. Signs of deterioration include rust staining from concealed fasteners, and white surface staining or build-up due to the leeching of salts from the masonry onto the finished surface.

Repair/Replacement- The most common repairs to stone masonry are cleaning, repointing, and replacement of damaged units.

Cleaning- In general, cleaning stone surfaces should be undertaken only when dirt or stains are deleterious to the masonry surfaces, or when appreciation of the building's architectural character and detail is impeded. Cleaning methods include abrasive cleaning, chemical cleaning, paint removal, poulticing, and water washing. Although the most commonly used medium in abrasive cleaning, sand is rarely recommended for historic stone masonry since it tends to abrade stone surfaces. A host of alternate materials are available for use in abrasive cleaning methods, including but not limited to pulverized walnut shells, ground corncobs, crushed eggshells and glass beads.

In addition, poulticing methods draw the stain out of the masonry material may be successful in certain instances, such as removing stains of oil, tar, plant materials, graffiti, and metallic stains, and some types of salt. Successful application of any of these techniques requires a skilled operator. Most common are the use of chemical cleaners. These chemicals are classified as either acidic (low pH) or alkaline. Acidic cleaners are appropriate for use on most granite, slate, sandstone, and all non-calcareous stones. Alkaline cleaners are used on acid sensitive materials such as limestone and marble. Acid cleaners are applied to the masonry, and removed with a thorough water rinse or a neutralizer. Alkaline cleaners are rinsed off in two steps, first with a slightly acidic wash and second with a straight water wash. Damage can be caused if the chemical is not appropriately diluted, if cleaning occurs when there is a risk of water freezing or when the masonry is insufficiently rinsed following cleaning, or if excessive water pressure (over 400 psi) is used in the operation. For granite, higher water pressures are possible without damaging the stone. Test samples are critical to determine the exact materials and methods to use to prevent damage and achieve the desired results. The objective of cleaning should not be to remove all the dirt, etc. from a structure, but to remove only those elements causing deterioration or limit the ability of the architecture to be appreciated.

Repointing- Also known as tuckpointing, this method involves the installation of mortar at joints eroded or mechanically removed. In general, 100% repointing of a building is not recommended. Instead, only those joints where mortar is missing or unsound should be repointed. Repointing mortar should match the original as closely as possible in all visual and physical characteristics. Premixed, bagged mortar commonly available is not appropriate for historic masonry, since it is too hard and can cause cracking of softer units, and since its grey color, contributed by the grey portland cement, rarely matches the more buff colors typical of historic mortars. New mortar should have a high lime content, and be prepared from a mix of lime and sand in water. White portland cement may be substituted for up to 20 percent of the lime, if desired. Color mix can be achieved by the use of carefully selected colored sand, or by the addition of pigment. Proper techniques for repointing are critical. At least ½-inch (1.3 cm) of mortar must be installed in order to assure a lasting repair. Joints must be finished with a profile matching the original. Joints must be held back from the face of the stone, and struck to shed water. Face grouting, where new mortar is less than ½-inch (1.3 cm) in depth, is not appropriate.

Replacement Units- Where stone replacement is required, replacement in kind is the preferred option. In some instances, the use of substitute materials may be considered acceptable. Care must be used to select sound and matching stones for all repairs. Stone masonry is available from a variety of sources, and efforts to identify matching stone units should be required.

7. -- Structural facing tile is a *hollow masonry* building unit composed of burnt clay, shale, fire clay or mixtures thereof, with parallel cells or cores within a single tile. At Picatinny, hollow clay tile is used for interior and exterior unplastered walls and partitions. Most of the exterior tile at the installation appears to be in sound condition.

Isolated areas of deterioration do exist, primarily as a result of impact or water abrasion. Most of the clay tile is unpainted.

Repair/Replacement- The most common repairs to hollow clay tile are repointing, repairs and replacement of damaged units

Repointing- Also known as tuckpointing, this method involves installation of mortar at joints eroded or mechanically removed. In general, 100% repointing of a building is not recommended. Instead, only those joints where mortar is missing or unsound should be repointed. Repointing mortar should match the original as closely as possible in all visual and physical characteristics. Premixed, bagged mortar commonly available is not appropriate for historic masonry, since it is too hard and can cause cracking of the (softer) brick units, and since its grey color rarely matches the more buff colors typical to historic mortars. New mortar should have a high lime content, and be prepared from a mix of lime and sand in water. White portland cement may be substituted for up to 20% of the lime if desired. Color mix can be achieved by the use of carefully selected colored sand, or by the addition of pigment. The strength of mortar for a structural tile wall is typically between 70 and 85 psi. Proper techniques for repointing are critical. At least ½-inch of mortar must be installed in order to assure a lasting repair. Joints must be finished with a profile matching the original. Joints must be held back from the face of the brick, and struck to shed water. Face grouting, where new mortar is less than ½-inch in depth, is not appropriate.

Isolated Repairs- In instances where only a small area of the tile unit is deteriorated, a plastic repair will be appropriate for creating the necessary patch. The repair should match the original tile in color and sheen as closely as possible. Further, the repair should be comprised of lime, sand, and aggregate. Pulverized salvaged or new tile units may be an appropriate additive to provide a color match to the existing tile.

Replacement Units- Where structural facing tile is required, replacement in kind is the preferred option. Where new tile units are specified, the dimension, color and surface texture of the new tile should match the existing tile to the greatest extent possible. Structural clay tile is also available in a variety of dimensions. New tile units matching the existing in dimension, color, and visual characteristics should be sought. Since scoring and detailing vary by manufacturer, the details of existing tile units should be matched, or provisions made for the integration of the new into the existing.

Installation of salvaged tile is also an appropriate option. Salvaged tile units should carefully be selected to ensure sound units provide an acceptable match in color, texture and dimension.

Suggested resources for locating specialty materials for working with historic masonry are as follows:

Berryman, Nancy D., and Susan M. Tindall

1984 *Terra Cotta: Preservation of an Historic Building Material*. Landmarks

Preservation Council of Illinois, Chicago.

Clark, Elizabeth J., Paul G. Campbell, and Geoffrey Frohnsdorff

1975 *Waterproofing Materials for Masonry*. NBS Technical Note 883. National Bureau of Standards, U.S. Department of Commerce, Washington, D.C..

Grimmer, Anne E.

1979 *Preservation Briefs 6: Dangers of Abrasive Cleaning to Historic Buildings*. U.S. Department of the Interior, Washington, D.C.

1984 *A Glossary of Historic Masonry Deterioration Problems and Preservation Treatments*. National Technical Information Service, U.S. Department of Commerce, Washington, D.C.

Fielden, Bernard M.

1982 *Conservation of Historic Buildings*. Butterworth & Co., London.

Lynch, Michael F., and William J. Higgins

1982 *The Maintenance and Repair of Architectural Sandstone*. New York Landmarks Conservancy, New York.

Mack, Robert C.

1975 *Preservation Briefs 1: The Cleaning and Waterproof Coating of Masonry Buildings*. U.S. Department of the Interior, Washington, D.C.

Mack, Robert C., de Teel Patterson Tiller, and James S. Askins

1980 *Preservation Briefs 2: Repointing Mortar Joints in Historic Brick Buildings*. U.S. Department of the Interior, Washington, D.C.

McKee, Harley J.

1973 *Introduction to Early American Masonry: Stone, Brick, Mortar and Plaster*. National Trust/Columbia University Series on the Technology of Early American Building 1. National Trust for Historic Preservation and Columbia University, Washington, D.C.

Strangstad, Lynette

1982 Patching Limestone and Marble: A Step-by-Step Guide. In *The Old-House Journal*, Vol. X, No.7 (July), 244, 254-257.

1982 Patching Brownstone. In *The Old-House Journal*, Vol. X, No.8 (August), 161-164.

Weaver, Martin

1981 Cleaning Masonry: A Look at Water and Chemical Treatments. In *Canadian Heritage* (December), 39-42.

8. -- Cast iron is used for fencing, gates and other site elements at Picatinny. It is generally in good condition, although isolated elements exhibit rusting and damage. In rare instances, it is also used for building façades and windows (hollow metal windows were used from ca.1890-1950s). Cast iron is an extremely durable material, although vulnerable to water and rust damage.

Repair/Replacement- Much damaged cast iron can be readily repaired or replaced. Filling of missing sections of iron should be conducted with polyester filler such as “Bondo” or equal. New bolts, nuts, screws and other connection devices should be made of stainless steel, ASI Type 302/304. Where cast iron requires replacement, new castings should be made comply with ASTM A48. The manufacture of new cast iron elements should produce components without surface blemishes where exposed to view, and without pitting, seam marks, or signs of cold runs.

Full restoration should include the removal of existing paint to bare metal by commercial blast cleaning in accordance with SSPC-SP6 or by application of chemical paint remover as directed by Mil Spc TT-R-251. Chemical removals must be followed by blast cleaning just prior to surface preparation. Sandblasted cast iron must be primed with a zinc-rich primer and repainted with the following, or equal: initial primer —Tnemec 90-97 Tnemec Zinc; Intermediate primer—Tnemec 66 high build Epoxoline; Finish Coat—Tnemec 73 Endurashield. A single manufacturer should supply all materials for priming and painting. Aluminum castings may be an acceptable alternative if replication in cast iron is not feasible. Aluminum replacement components should be cast from A-356 aluminum alloy and in all other respects match the original cast iron. Painting should incorporate the following preparation process and paint, or approved equal: Aladine for pre-treatment, de-gassing, a primer coat of Tnemec 66 Hi-Build Epoxoline: 4-6mills, and two top coats of Tnemec 71 Endurashield: 1.5-2.5 mills.

Suggested resources for locating specialty materials for working with historic metals are as follows:

Gayle, Margot, David W. Look, and John G. Waite

1980 *Metals in America's Historic Buildings: Part I. A Historical Survey of Metals: Part II. Deterioration and Methods of Preserving Metals.* U.S. Department of the Interior, Washington, D.C.

1992 *Metals in America's Historic Buildings: Uses and Preservation Treatments.* U.S. Department of the Interior, Washington, D.C.

Howell, J. Scott

1987 Architectural Cast Iron: Design and Restoration. In *The Journal of the Association for Preservation Technology*, Vol XIX, Number 3, 51-55.

Park, Sharon D.

1988 *Preservation Briefs 16: The Use of Substitute Materials on Historic Building Exteriors.* U.S. Department of the Interior, Washington, D.C.

Waite, John G.

1991 *Preservation Briefs 27: The Maintenance and Repair of Architectural Cast Iron*. U.S. Department of the Interior, Washington, D.C.

9. -- Many historic buildings at Picatinny have *wood* cornices, window and door trim, and wood siding. Much of the wood siding has been covered with aluminum or vinyl, and many original windows and doors, including their casings and decorative features, replaced. Another common occurrence is the retention of original doors and windows, but with metal storms covering them. Exterior wood elements of a building are significant to its character, and these items should be repaired, or, if necessary, replaced in kind. Covering these elements with aluminum or other materials is not recommended due to the adverse visual impact of this solution. In addition, the rotting of covered wood members is common due to the entry of moisture behind the covering and the lack of ventilation. The only exception to the above is where metal or vinyl storm windows are installed over retained, original or significant windows, as further discussed in that section.

Repair/Replacement- A range of techniques exists to repair damaged wood elements. Isolated deteriorated elements can be replaced with new wood matching the species and durability of the original wood. Where only small areas are deteriorated, the use of wood “dutchmen” can be employed. This procedure involves the careful cutting out of the deteriorated section and the replacement of only that missing area with new wood exactly matching the original. Small areas of wood deterioration can also be repaired with traditional wood fillers. In addition, epoxy consolidants or surface treatments are possible, although proper execution of the epoxy work is critical and should only be undertaken by those with specific experience. Most deterioration is caused by an extended exposure to water. Paint not only protects wood from deterioration associated with moisture penetration, but also protects underlying structural members from damage. Paint is not a permanent treatment, and reapplication on a five-to-eight year cycle should be anticipated. The ideal sequence for proper repainting of wood includes: cleaning of surfaces; light scraping to remove loose and scaling paint; feathering of edges; priming of bare wood; and applying two finish coats. In most instances, complete removal of paint prior to repainting is unnecessary, and is not recommended. However, complete paint removal may be necessary where a heavy build up of multiple layers of hardened brittle paint, surface crazing or alligatoring, or intercoat peeling or blistering have been observed.

Cleaning- Where wood is dirty and sooty or is covered with cobwebs, insects, etc., paint can be loosened with a strong, direct stream of water from the nozzle of a garden hose. Stubborn dirt can be scrubbed with a medium soft bristle brush using ½-cup of household detergent per gallon of water. Cleaned surfaces should be thoroughly rinsed prior to further inspection to determine if repainting is necessary. Mildew, which thrives where dampness and lack of sunshine are problems, can be identified if a drop of household bleach is placed on the surface: mildew will immediately turn white. Removal of mildew should include scrubbing the surface with a medium soft brush using a mixture of 1 cup of non-ammoniated detergent, 1 quart of bleach, and 1 gallon of water. Once

mildew-free, the wood should be completely rinsed. Mildew-resistant primer is recommended for repainting. Further measures available to limit the recurrence of mildew include pruning of trees and bushes and improvements to roof and site drainage. The removal of chalking—the powdering of previous paint surfaces—can be accommodated with a mix of ½-cup of household detergent to 1 gallon of water. The surface should subsequently be completely rinsed. Staining is a surface deposit of colored matter which is commonly caused by the oxidation or rusting of iron nails or metal anchorage devices or by a chemical reaction between moisture and the natural extractives in certain woods. Once the source of staining has been identified, the metal objects should be coated with a rust-inhibitive primer and repainted, to the extent possible. Discoloration can be usually cleaned with a solution of equal parts denatured alcohol and water.

Paint Removal- Where limited paint removal is to occur, scraping and hand, or careful mechanical, sanding to a sound layer is appropriate. All scraping is to be followed by sanding. Sandblasting is never recommended for exterior woodwork since it will damage the wood as well as remove the paint. Thermal methods using heat plates may be successful in limited applications, although extreme caution is necessary to limit the potential for unintended fire. The use of a blow torch should never be allowed. Some solvent-based or caustic chemicals may be appropriate; although their use should be limited since they present potential health and safety hazards, and can leave residues on the wood impacting the success of the new paint applications.

Painting- The recommended paint treatment is the use of an oil-based primer over an oilbased (alkyd) paint. (A latex finish coat may also be acceptable, even if applied over the oilbased primer.) For special circumstances, such as heavily chalked surfaces, a latex primer is appropriate. Top quality paints should always be used, and a single manufacturer should supply both primer and paint.

Environmental and Safety Concerns- Pre-existing, older paint on historic buildings is likely to contain lead. All appropriate provisions should be made for the collection, removal and disposal of such waste in accordance with federal, state and local guidelines for environmental and occupational health.

Suggested resources for locating specialty materials for working with historic exterior woodwork are as follows:

Philips, Morgan, and Judith Selwyn

1978 *Epoxies for Wood Repairs in Historic Buildings*. Technical Preservation Services, U.S. Department of the Interior (GPO), Washington, D.C.

Weeks, Kay D., and David W. Look

1982 *Preservation Briefs 10: Exterior Paint Problems on Historic Woodwork*. U.S. Department of the Interior, Washington, D.C.

10. -- This section discusses historic period *roofing* materials, including slate, metal, asbestos, and asphalt shingles, as well as associated architectural features, such as flashing, and gutters and down spouts.

Slate roofs are among the most distinctive elements of building exteriors. In general, their deterioration is attributed to the failure of the fasteners holding the slate or the flashing at roof valleys and chimneys. Cracking of slate most often occurs as a result of impacts by objects, such as fallen trees, or by walking on the slate by construction workers. In general, grey slate from Pennsylvania is a softer material than green or purple slate from Vermont.

Repair/Replacement- Repairs to existing slate roofs can readily be made by qualified roofers with expertise in slate roofs. Replacement of individual slates, or removal for repairs to existing flashing or installation of new flashing, can occur using a slate (shingle) ripper to remove the slate, and using copper clips to fasten the new or salvaged slate. Slate replacement should be made using new or sound salvaged slate matching the existing in color and dimensions. In highly visible locations to assure visual consistency, it may be appropriate to salvage sound slate from other, less visible areas of the roof. New or salvaged slate less perfect in match can be installed at the less visible areas. Only roofers with specific experience in slate should be retained for slate replacement. Where it has been determined asphalt shingles are an acceptable replacement for a slate roof, new shingles should match the color of the original. Shingles marketed for their slate-like appearance should be given consideration.

Metal roofs are usually lead, tin, copper, stainless steel. Usually, these materials were not originally painted, although metal roofs are often coated with bituminous or other coatings. Once a coating has been applied lasting repairs are difficult.

Repair/Replacement- The application of coatings and patching compounds should be considered a temporary solution only. Repair of metal roofs can be conducted using metal matching the original and appropriate solder. Only roofers with specific experience with metal roofs should be retained for metal repairs and replacement. In addition, precautions should be taken to prevent an accidental fire during soldering operations.

In the first decades of the twentieth century, *asbestos shingles* were commonly selected as roofing materials for their durability and fire resistance.

Repair/Replacement- Asbestos shingles are no longer commonly available, although in some instances larger roofing suppliers may have stockpiles of matching shingles in storage. Due to its classification as a potentially hazardous material, asbestos shingles must be removed following legal abatement procedures related to environmental and occupational safety. It is recommended existing shingles or panels be salvaged from buildings proposed for alteration or demolition, and be reused in isolated repairs in individual structures. The variety of dimensions of the existing panels will need to be accounted for. Where complete replacement is determined necessary, alternative

corrugated materials, such as metal or fiberglass, should be considered. These will be more compatible with the character of the original roof treatment than replacement with asphalt shingles or other modern materials.

Most roof replacement on gabled structures has been undertaken with *asphalt or fiberglass composition shingles*. These new shingles have generally altered the visual characteristics of roofs originally covered with other materials.

Repair/Replacement- Existing asphalt shingle roofs should continue to be repaired and replaced with new asphalt shingles. Where it has been determined asphalt shingles are an acceptable replacement for roofing of a different material, new shingles should match the color of the original. Shingles marketed for their appearance to the original material should be given consideration.

Flashing is used at intersections of roofs with other roofs and walls, and around penetrations, such as chimneys, dormers, and stacks. The flashing is the most vulnerable area of roof, and often the source of water penetration. Flashing materials include copper, terne, stainless steel, aluminum, lead, and galvanized steel.

Repair/Replacement- In most installations the best choices are copper or, if color is a concern, lead-coated copper. Copper flashing must be attached with copper nails or clips, and must be separated from bituminous coatings which will cause deterioration of the metal.

11. -- *Gutters and down spouts* are critical architectural components that convey water away from the building. In historic buildings, these are often significant exterior features part of the original design.

Repair/Replacement- All components of the rain water disposal system must be kept in operating condition. Gutters must be cleaned regularly and checked to assure no blockages exist. When repairs are necessary, they should be executed in original materials to match all existing/original details. Where such maintenance is not possible, complete removal of the gutters may be beneficial, providing the grade is pitched so water flows away from the building.

Suggested resources for locating specialty materials for working with historic roofing materials are as follows:

Grimmer, Anne E., and Paul K. Williams

1992 *Preservation Briefs 30: The Preservation and Repair of Historic Clay Tile Roofs*. U.S. Department of the Interior, Washington, D.C.

Heim, David

1984 Roofing With Slate. In *Fine Homebuilding*, No. 20 (April/May), 38-43.

Labine, Clem

1988 How to Repair an Old Roof. In *The Old-House Journal*. Vol. XI, No.3 (April), 64-69.

Levine, Jeffrey S.

1992 *Preservation Briefs 29: The Repair, Replacement, and Maintenance of Historic Slate Roofs*. U.S. Department of the Interior, Washington, D.C.

McKee, Harley J.

1970 Slate Roofing. In *APT Bulletin*. Vol. 2, Nos. 1-2, 77-84.

Pierpont, Robert N.

1987 Slate Roofing. In *APT Bulletin*. Vol. 19, No.2, 10-23.

Poore, Patricia

1987 Tile Roofs. In *The Old-House Journal*, Vol XV, No.5 (September/October), 22-29.

Sweetser, Sarah M.

1978 *Preservation Briefs 4: Roofing for Historic Buildings*. U.S. Department of the Interior, Washington, D.C.

The Old-House Journal

1983 Special Roof Issue. *The Old-House Journal*, Vol XI, No.3 (April).

12. -- Windows, an architectural element visible from the interior and exterior of the building, are important character-defining components of historic buildings. They provide light, air, and ventilation to the interior, provide a barrier against undesirable ambient (exterior) conditions, give a view to the exterior, and enhance the architectural appearance of the exterior. Single- and double-hung wood windows have been used since the early eighteenth century. Steel windows have been commonly used in industrial, commercial, and mid- and large scale residential projects since the 1890s, and consist of casement, double-hung, pivot, projecting or austral operations. After World War II, aluminum replaced steel as the dominant metal used in window applications.

Proposed window repair or replacement projects are either the result of extensive deterioration that prohibits the window from performing its tasks or the desire to upgrade the energy performance of the building. Both deterioration prevention and energy conservation goals can be addressed either by repairing or upgrading the existing sash and frames, or through the replacement of those elements, where warranted. Evaluation of the window should include consideration of the following elements: the prominence of the window location; the condition of the paint, frame, sill, and sash (rails, stiles and muntins); glazing problems; hardware; and the overall condition of the window. The results of this evaluation should be documented on a window survey addressing the individual components of (generally) each window at a building.

As with all historic materials, it is generally acceptable to repair rather than replace. The decision to replace should be based on an extensive evaluation of all (or typical) windows, a comparison of costs relative to repairs versus replacement (including life cycle costs), and the ability to exactly replicate the existing conditions in the original material. Replacement in substitute materials is generally not acceptable.

Repair/Replacement- Repair of wood windows is usually labor intensive, but not complicated. Repairs usually involve removal of interior and/or exterior paint; removal and repair of sash; repairs to the frame; weatherstripping and reinstallation of the sash; and repainting. Where damage of the sash is extensive, repairs may include treatment of decayed wood with a fungicide, waterproofing, filling of cracks and holes with putty, and painting. Isolated deteriorated members may be replaced in kind, repaired with small “dutchmen” inserts, or repaired with epoxy in limited areas. The decision to replace wood windows can only be made following the completion and analysis of the window survey. Replacement windows should match the original exactly in method of operation, daylight opening, light configuration, molding and frame profile, and sill detail. It is always preferable to use wood windows when replacing existing wood windows.

Steel Windows were selected for their fire resistant qualities, durability, and standardization. Most windows of this type are constructed of 1/8-inch (.32 cm) thick and 1½- inch (3.8 cm) wide, rolled steel used for the sash, frame and subframe. When evaluating the significance of a building’s steel windows, the same criteria and level of detail as specified above for wood windows should be followed. Decisions regarding repair and replacement should similarly be based on a thorough analysis of existing conditions as well as a detailed comparison of the costs for both repair and replacement, including life cycle cost analysis.

Repair/Replacement- Corrosion is the controlling factor that impacts a decision to repair or replace an historic steel window. If only surface rusting or flaking occurs, the corrosion is light and can be readily repaired. It is only with heavy corrosion, when the rust has penetrated deep into the metal that some form of structural damage has occurred. This damage can be patched or spliced. Patching involves filling small holes and uneven areas with a steel fiber/epoxy binder. Steel sections bowed or misaligned can often be repaired. Following all necessary repairs, hinges can be cleaned and lubricated, cracked glass and deteriorated glazing compound repaired, missing screws and broken fasteners replaced, and masonry surrounds caulked. Priming with two coats of a zinc-rich primer and two coats of a compatible finish coat should follow preparation of surfaces as recommended by the paint/primer manufacturer. Metal cleaning/corrosion removal can occur using manual and mechanical (sandblasting) abrasion, or using chemicals or anti-corrosive acid compounds. Adequate precautions must be provided to protect adjacent materials.

12. -- Like windows, *doors* have significant roles in the interior and exterior of the building. Front entrance doors are most important, in particular those with transoms or sidelights. Original doors should be retained wherever possible, and upgraded with

hardware (as required by ADA), new weatherstripping, and appropriate storm panels completely fill the door openings.

Repair/Replacement- Repair techniques for doors are generally similar to those specified for wood and steel windows described above.

Suggested resources for locating specialty materials for working with historic wood and metal windows and doors are as follows:

Fisher, Charles E., III, Deborah Slaton, and Rebecca A. Shiffer

1997 *Window Rehabilitation Guide for Historic Buildings*. Edited by Charles E. Fisher, III. Historic Preservation Education Foundation, Washington, D.C.

Gayle, Margot, David W. Look, and John G. Waite

1992 *Metals in America's Historic Buildings: Uses and Preservation Treatments*. Revised ed. Technical Preservation Services, U.S. Department of the Interior, Washington, D.C.

Myers, John H.

1981 *Preservation Briefs 9: The Repair of Historic Wooden Windows*. U.S. Department of the Interior, Washington, D.C.

Park, Sharon C.

1984 *Preservation Briefs 13: The Repair and Thermal Upgrading of Historic Steel Windows*. U.S. Department of the Interior, Washington, D.C.

Philips, Morgan W., and Judith E. Selwyn

1978 *Epoxies for Wood Repairs in Historic Buildings*. Technical Preservation Services, U.S. Department of the Interior, Washington, D.C.

Smith, Baird M.

1978 *Preservation Briefs 3: Conserving Energy in Historic Buildings*. U.S. Department of the Interior, Washington, D.C.

Weeks, Kay D., and David W. Look

1982 *Preservation Briefs 10: Exterior Paint Problems on Historic Woodwork*. U.S. Department of the Interior, Washington, D.C.

13. -- Suggested resource for obtaining additional information on the *maintenance* of historic buildings:

Chambers, J. Henry

1979 *Cyclical Maintenance for Historic Buildings*. Rpt. of 1976 ed. U.S. Department of the Interior, Washington, D.C.

14. -- In general, alterations should be undertaken in a manner compatible with the character of the original or significant *interior*. To the greatest extent possible, original/significant volumes should be retained, and character defining features, such as doors, wainscot, trim, and exposed structural systems, where extant, should be preserved. Modifications should be made in compatible materials, and in a manner reversible, i.e., can be removed without damaging historic materials.

Additional information on the maintenance of historic interiors:

Historic Preservation Education Foundation

- 1995 *Preserving the Recent Past*. Historic Preservation Education Foundation, Washington, D.C.
- 1993 *The Interiors Handbook for Historic Buildings, Volume II*. Historic Preservation Education Foundation, Washington, D.C.
- 1988 *The Interiors Handbook for Historic Buildings*. Historic Preservation Education Foundation, Washington, D.C.

For further information, guidance and requirements see <http://www.nps.gov/history/hps/tps/briefs/presbhom.htm>.

15. -- Plants and trees are very fluid elements of a Historic Property and district, and have constantly changed over the years that obviously, most of the original *landform features* and plantings historically part of Picatinny have been removed or added to over time. Individual features in a property's *landscape* should never be viewed in isolation, but rather in relationship to its surrounding setting and overall fabric.

Existing plantings should be maintained by fertilizing, pruning, treating for disease, weeding or in other appropriate ways. Dead and diseased plants should be removed and replaced with healthy specimens of identical or similar species.

The simplest means of preserving landscape features and plantings is replacement in-kind or with similar types of plants, if feasible. This sort of seasonal planting occurs most likely during the spring if annuals and flowerbeds are being planted and does not involve external SHPO consultation. The replacement of shrubs, herbaceous or woody plants or perennials, and even small deciduous trees with a different variety or exotic species in their place would involve coordination with the CRM and consultation with SHPO. Whenever a tree is removed, whether it is diseased, storm damaged, or healthy, the overall property's setting is diminished. The planting of a similar replacement tree in its place or nearby helps perpetuate the surrounding landscape features. Overall, it is not recommended to remove healthy plantings significant to defining the character of a Historic Property or replace missing, diseased or deteriorated plantings with very different species.

River rocks, installing excess soil, bricks and/or pavers, mulching, reseeding of yards and other decorative ornamental features are allowed at historic residential housing areas, as long as the surrounding landscape formation itself, contour, or overall fabric is

not degraded from.

Vegetable gardens are allowed in the backyards of historic houses on the installation, however the installation recommends instead for residents to use the installation garden located along Parker Road adjacent to the existing ballfields before planting their own vegetable gardens.

Lastly, any reformation or change to manicured lawns and the surrounding landscape features, repaving of sidewalks, installation of exterior lighting, and realigning of cul-de-sacs and road patterns within historic districts would most definitely involve coordination with the CRM and consultation with SHPO. Overall, landscaping should not overwhelm a property, nor conceal or obscure its primary facades, along with properties adjacent to it.

Suggested resources for locating specialty materials for protecting historic landscapes are as follows:

Birnbaum, Charles A.

1994 *Preservation Briefs 36: Protecting Cultural Landscapes: Planning, Treatment, and Management of Historic Landscapes*. U.S. Department of the Interior, Washington, D.C.

Buggey, Susan, Guest editor

1992 Special Issue: Conserving Historic Landscapes. *APT Bulletin*. Volume XXIV, No. 3-4.
Association for Preservation Technology International, Fredericksburg, VA.

CRM, Cultural Resource Management

1991 *Thematic Issues: The Preservation of Cultural Landscapes*. Volume 14, No.6.

Appendix G: Standard Operating Procedures

These SOPs were developed to address the Cultural Resources concerns relevant to proposed or planned installation activities at Picatinny Arsenal. The Point of Contact for these SOPs is the CRM for Picatinny with Chugach Industries, Inc., Mr. Jason Huggan, Tel. (973) 724-3664, fax (973) 724-8020, and email: jason.j.huggan@us.army.mil.

SOP #1- National Historic Preservation Act, Section 106 Review

The U.S. Army, as a Federal agency, has management responsibilities concerning the identification, protection and preservation of Cultural Resources on land it controls or uses. Federal statutes require the Army to identify, evaluate and protect significant Cultural Resources on these Properties. Primary among these statutes is the NHPA and the Section 106 implementing regulation 36 CFR 800. Failure to take the effects of an undertaking on Historic Properties into account in accordance with NHPA Section 106 and 36 CFR Part 800 can be used by litigants against the Army in a manner that can halt or delay critical mission activities. Whenever practical, Section 106 review should be incorporated into any reviews being conducted under the National Environmental Policy Act (NEPA) [see SOP #9]).

The procedures outlined below are drawn from 36 CFR Part 800 (December 12, 2000) and DoD 4715.uu, "Cultural Resources Management". Additional useful information is presented in the ACHP Guidelines "Identification of Historic Properties: A Decision-making Guide for Managers."

The Picatinny Arsenal CRM must carry out Section 106 review if the proposed action is an undertaking and if it has the potential to affect Historic Properties.

Undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; those requiring a Federal permit, license or approval; and those subject to state or local regulation administered pursuant to a delegation or approval by a Federal agency. Examples of undertakings include

- construction, demolition, rehabilitation and/or renovation of buildings. Maintenance and recurring upgrades performed on buildings evaluated on a case-by-case basis through the inspection of Service Work Orders and IJOs by the CRM. General maintenance Service Order undertakings are usually not part of the installation Master Plan and/or Annual Work Plan and include, for example, routine (minor) exterior maintenance, emergency roof repairs, caulking, minimally destructive electrical and plumbing work, water line break/leak repair, interior painting, etc. Unless these activities are performed on NRHP-eligible structures (Appendices E-G) and they are significantly destructive (e.g., removal or replacement of a wall or window), they usually will not require much further internal review;
- construction of any kind involving ground disturbance, including new facilities, additions, staging/storage areas, and new roads and parking areas;
- utility systems installation, repair, or upgrade including construction work to potable water, waste water and sanitary sewer, electrical, steam, gas, air conditioning, fire prevention, telecommunication, fuel, and high pressure air;
- landscaping, including routine maintenance and upkeep, grading, clearing, and long-term alterations. This is especially a concern to Picatinny's five

- historic districts;
- hazardous material cleanup/remediation, including UXO surveys, installation of ground monitoring wells, and contaminated soil removal;
- wetlands mitigation for new wetland areas replacing impacted ones;
- forestry activities, including timber harvesting, uprooting and grubbing, and the construction of access roads;
- property leases, transfers, and exchanges;
- military training, including research and development, testing, detonation and blasting, and bunker excavation;
- and any other construction projects involving ground disturbances not mentioned above (ie. road cuts, etc.)

If a specific project type is not listed here or within these SOPs, consult with the CRM to determine the potential for effects.

Historic property means any prehistoric or historic district, archaeological site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term also includes artifacts, records, and remains related to and located within such properties.

Area of potential effects (APE) means the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of Historic Properties, if any such properties exist.

Generically, the Section 106 process is as follows:

1. Before an undertaking can take place on or near any Historic Property (known or unknown) at Picatinny, it must be brought to the immediate attention of the CRM and the Environmental Affairs Division. Picatinny Arsenal has 130 structures eligible for listing on the NRHP and five eligible historic districts (see Table 5.1, this document), and therefore they must be treated as if they are so listed, including the landscape surrounding them. Additionally, little archaeological investigation has taken place at Picatinny Arsenal; therefore the CRM shall take the necessary steps to identify Historic Properties within the APE. If the undertaking has the potential to cause ground disturbance, an investigation may be required to determine if the undertaking will affect NRHP eligible archaeological resources. This identification includes the CRM determining if the undertaking will have no effect, no adverse effect, or an adverse effect upon the Historic Properties.
2. The CRM should be provided with full documentation including drawings, specifications, detailed descriptions, sketches and a written report of what the proposed action entails (see Internal Coordination, Section 5.5 of the ICRMP). **If deemed appropriate**, the CRM will then coordinate with the NJ HPO and forward the information to them. The NJ HPO is entitled to a 30-day period to review the information of the proposed action. If the NJ HPO fails to respond

within 30 days of receipt of a request for review of a finding or determination, the CRM may either proceed to the next step in the process based on the finding or determination or consult with the ACHP in lieu of the NJ HPO. The CRM shall also identify the appropriate points for seeking public input and for notifying the public of proposed actions, consistent with 36 CFR 800.2 (d).

3. If previously unevaluated Cultural Resources are discovered, the CRM will then apply the NRHP criteria (36 CFR 63, see Section 4.2.3 of the ICRMP) to Historic Properties identified within the area of potential effects. If no Cultural Resources are identified within the APE or if Cultural Resources are identified but not NRHP eligible (with NJ HPO concurrence), the CRM can notify the NJ HPO and (provided the ACHP is not reviewing the finding) proceed with the undertaking.
4. If NRHP eligible Historic Properties are within the APE of the undertaking, the CRM applies the criteria of adverse effect:

An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a Historic Property that qualify the property for inclusion in the NRHP in a manner diminishing the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Examples of adverse effects include physical destruction, alteration or neglect of the Historic Property, removal of the Historic Property from its original location, change of the character of the Historic Property's use or physical features, introduction of visual, atmospheric or audible elements that diminish the integrity of the Historic Property's significant features, or transfer, lease, or sale of the Historic Property out of Federal ownership or control.

If it is found the undertaking will have an adverse effect, then the CRM shall consult with the NJ HPO and other consulting parties to seek ways to avoid minimize or mitigate the adverse effects. For this purpose, the CRM may use standard treatments outlined in the ICRMP and other sources. If the CRM and the NJ HPO agree on how the adverse effects will be resolved, they shall execute a Memorandum of Agreement (MOA) and provide the documentation to the ACHP and interested parties prior to approving the undertaking. An MOA executed and implemented evidences Picatinny's compliance with Section 106 and shall govern the undertaking and all of its parts. If the CRM and the NJ HPO fail to agree on the terms of an MOA, then the CRM will work to seek ways to avoid or reduce the effects of the proposed action on the Historic Property. Failing this, the CRM shall request the ACHP to join the consultation and provide them with the documentation specified in 36 CFR 800(11).

If neither the CRM nor the NJ HPO can agree on resolving adverse effects

(i.e. the NJ HPO terminates consultation per 36 CFR 800[7]) then the installation may execute the MOA with the ACHP and without NJ HPO involvement. If the installation and the ACHP cannot agree, the ACHP then renders advisory comments to Picatinny, which must be considered when the final decision on the undertaking is made. The ACHP may recommend further consultation to attempt to resolve the matter. In all cases where termination of consultation occurs, Picatinny must document the process and consider comments before approving the undertaking. Any major change to the proposed action after the MOA is final shall require resubmission of another proposed action package to the NJ HPO.

5. If there is no adverse effects to Historic Properties and the NJ HPO agrees, then Picatinny Arsenal may proceed with the undertaking unless the ACHP is reviewing the finding pursuant to 36 CFR 800.5. If the NJ HPO or any consulting party disagrees within the review period, it shall specify the reasons for disagreeing with the finding. The CRM shall either consult with the party to resolve the disagreement, or request the ACHP to review the finding.

TREATMENT PLAN FOR ARCHAEOLOGICAL SITES

At present, archaeological sites that have been identified within the installation boundaries have either been ineligible for listing to the NRHP or not had their eligibility evaluated entirely by archaeological fieldwork. As identified in the five-year work plan and based on the availability of funding, once the development of an archaeological inventory of Picatinny Arsenal is completed, areas sensitive for the presence of archaeological resources will be clearly demarcated; then, all NRHP eligible archaeological sites in these sensitive areas will have to be identified to the greatest practical extent ensuring their overall protection and preservation.

If no ground disturbing activities are to occur in these areas, then no particular protective measures will be required. If new construction or some other ground disturbing undertaking is to take place in an area sensitive for the presence of archaeological resources at some time in the future, then impacts to the NRHP listed or eligible sites will be considered. Additionally, protective measures will be required when erosion by natural or man-made processes have the ability to adversely affect an archaeological site along a stream bank or through soil deflation. The first priority will be avoidance through project redesign. If cultural avoidance considerations are implemented early enough in the planning process, then avoidance need not impose any undue burden on the project. Depending on the nature of the construction project, physical barriers (i.e. temporary fences) may be required to protect the site from harm along with archaeological monitoring of the project. If avoidance is economically prohibitive or impractical from a design or engineering perspective, then mitigation measures will be undertaken.

These mitigation procedures, sometimes referred to as data recovery, often involve the controlled excavation of part of the site that may be impacted by construction

or a sample of the entire site. The direction the data recovery takes is based in large part on the relevant research questions. Any mitigative measures will be formulated in consultation with the NJ HPO and ACHP.

SOP #2- Unexpected Cultural Resources Discoveries during Undertakings

Unanticipated discoveries happen most often with projects involving ground disturbance, although sometimes they involve unforeseen effects on a known Historic Property. In all cases of unanticipated discovery, the CRM should initiate consultation in accordance with 36 CFR Part 800.13. If the unexpected discovery involves a Native American cultural item as defined by NAGPRA, SOP #4 should be sought. The accidental discoveries of Cultural Resources during an undertaking can include but are not limited to: undiscovered/undocumented structural and engineering features; and undiscovered/undocumented archaeological resources such as foundation remains, burials, artifacts, or other evidence of human occupation or activity. This includes Cultural Resources identified or not previously identified.

When such Cultural Resources are discovered during an undertaking, the CRM will proceed with the treatment of such properties in accordance with the following Discovery Plan (Note: Abiding by these steps ensures adequate protection and compliance with Sections 106 and 110 of the NHPA, among other SOPs discussed below):

- the contractor or project manager shall notify the CRM immediately of the discovery, who will then notify the NJ HPO (and the ACHP) within 48 hours. The CRM will provide assessments of NRHP eligibility and actions to resolve adverse effects. The NJ HPO and ACHP shall respond with comments within 48 hours;
- all work shall cease in the area of the discovery;
- the Historic Property is to be treated as NRHP eligible and avoided until an eligibility determination is made. The CRM will continue to make reasonable efforts to avoid or minimize harm to the Historic Property until the NHPA, Archeological Resources Protection Act (ARPA) and including Section 110 of the NHPA, or NAGPRA requirements are met (see SOPs #4, 5 and 6 below for ARPA and NAGPRA requirements); and
- the CRM will develop and implement actions taking into account the adverse effects of the undertaking on the Historic Property to the extent feasible and any comments provided by the NJ HPO (and ACHP) pursuant to 36 CFR Part 800.13(b).

In the event unintentional partial damage occurs to an NRHP eligible archaeological site or previously unidentified/unknown eligibility archaeological site, the project manager or construction supervisor will notify the CRM of any damage immediately.

1. the CRM will document any damage both photographically and in a written

- summary report;
2. the CRM, will determine if limited excavation should be conducted to collect available data or if the site context may be stabilized. If disturbance was the result of construction plans not accounting for a known site and such construction will further damage the site, the CRM will ensure that no further damage occurs until consultation with the NJ HPO is completed concerning appropriate mitigation actions;
 3. the CRM will develop a treatment plan for the limited data recovery stabilization;
 4. the CRM shall submit the treatment plan for review and concurrence by the NJ HPO and to ensure it meets the Secretary of the Interior's Standards. If the NJ HPO agrees, then the treatment plan may be implemented. If the NJ HPO does not concur, then the Section 106 compliance procedures described in SOP #1 should be followed;
 5. if stabilization only is planned, then the CRM will inform the project manager and contracting officer of the appropriate specifications must be included within the contract;
 6. if data recovery is recommended, then the CRM will implement a data recovery plan. All work in the immediate area of the discovery shall cease until the archaeological investigations are completed.
 7. the project manager will familiarize the contractor with significant archaeological features (both above ground and below ground) for necessary protective measures;
 8. the project manager and/or the CRM will monitor the contractor's activities to ensure the integrity of the Historic Property,;
 9. the CRM should make sure the artifact collection is retained and properly curated in accordance with 36 CFR Part 79 (SOP #8);
 10. the CRM will submit a thorough report with photographs of the investigation taken upon completion of the fieldwork and the project to the NJ HPO to document compliance; and
 11. the CRM shall retain all documentation of the project, including work write-ups, field reports, and photographs, as part of the permanent project records.

SOP #3- Unintentional Damage to an NRHP Eligible Architectural Resource, including Buildings, Structures, or Features

In the case of unintentional/accidental damage to an NRHP eligible architectural resource, including buildings, structures, engineering materials, and/or features, the CRM should be notified of the damage immediately and all work in the immediate area of the damage should cease. The following treatment plan should then be put into place:

1. the CRM will document any damage in a written summary report with photographs;
2. the CRM, in consultation with a qualified historic architect, will determine whether repair or reconstruction can be accomplished in accordance with the Secretary of the Interior's Standards for Rehabilitation and thereby have no

- adverse effect;
3. the project manager and a qualified historic architect, under the direction of the CRM, will develop a treatment plan for repair or rehabilitation, including architectural specifications and photographs;
 4. the CRM will submit this treatment plan for review of the NJ HPO and to ensure it meets the Secretary of the Interior's Standards. If the NJ HPO concurs, then the treatment plan shall be implemented. If the NJ HPO does not concur, then the Section 106 compliance procedures described in SOP #1 should be followed.
 5. after consultation, the CRM will inform the project manager and contracting officer of the appropriate specifications within the treatment plan which must be included and adhered to within the contract;
 6. the project manager will familiarize the contractor with significant historic features for necessary protective measures;
 7. the project manager and/or the CRM will monitor the contractor's activities to ensure the integrity of the historic features and the property itself;
 8. the CRM shall submit photographs of the Historic Property taken upon completion of the project to the NJ HPO to document compliance with the Secretary of the Interior's Standards for Rehabilitation;
 9. the CRM shall retain documentation of rehabilitation, including work write-ups and photographs, as part of the permanent project records.

SOP #4- Native American Graves Protection and Repatriation Act (NAGPRA)

This procedure implements the provisions of the NAGPRA (PL 101-601; 25 USC 3013); U.S. Army Guidelines for Consultation with Native Americans, Native Alaskans, and Native Hawaiians; and as amended, 43 CFR Part 10, NAGPRA Regulations. NAGPRA mandates Federal land managers must consult with Federally recognized Indian tribes regarding planned excavations on Federal lands, and establishes procedures Federal agencies must follow in the event of inadvertent discovery of Native American human remains and cultural items. It is important to note, NAGPRA applies only to human remains culturally associated with a modern Native American group, and not identified as the remains of a historic settler, murder victim, or like individual. The statute provides a mechanism for determining the disposition for such human remains or cultural items. NAGPRA also forbids the sale of Native American human remains or of cultural items obtained in violations of the statute.

In the past, Picatinny Arsenal has sent consultation letters to three Federally recognized tribes: Delaware Tribe of Indians of Oklahoma, Delaware Tribe of Western Oklahoma, and the Stockbridge-Munsee Community of Mohican Indians of Wisconsin. Additional tribes may be added to this list in the future as they apply for Federal recognition. Currently, none of these tribes have responded to Picatinny to notify the installation they may be possible descendants of aboriginal people culturally affiliated with the lands now occupied by the installation. If a Federally recognized Native American tribe is identified that will have an on-going interest in installation activities effecting possible descendant remains, funerary objects, sacred objects, or objects of

cultural patrimony, then Picatinny Arsenal may choose to execute a Comprehensive Agreement with the tribe.

Some prehistoric materials have been identified at Picatinny but the likelihood of uncovering Native American burials at the installation is low. However, if burials are uncovered, AR 200-1 states the GC must ensure intentional excavation and response to any inadvertent discovery of NAGPRA-related cultural items be carried out in compliance with all applicable statutory and regulatory requirements of NAGPRA, ARPA, and the NHPA. Compliance with one statutory requirement, therefore, may not satisfy other applicable requirements. All Picatinny activities will strictly avoid the disturbance of human burials, whether marked or unmarked. In all instances where avoidance is not possible, the installation shall consult, as outlined by NAGPRA, with the Native American tribes culturally affiliated with the remains or items on a case-by-case basis. Under no circumstances will any Arsenal activity be allowed to proceed if it will intentionally disturb a known burial and/or sacred site until such time as consultation between the installation and the involved Native American tribes is completed in accordance with 25 USC 3002(d), Sec. 3.

In accordance with 43 CFR Part 10.3 and AR DoD 4715.uu, the GC shall take reasonable steps to determine whether a planned activity may result in the intentional excavation or inadvertent discovery of cultural items from the installation. When it is determined these cultural items, which are covered under NAGPRA as determined by Picatinny in consultation with Native American representatives, may be encountered, and, prior to issuing approval to proceed with the activity, the Commander shall carry out the consultation procedures and planning requirements at 43 CFR Parts 10.3, 10.4, and 10.5 as part of the intentional excavation or inadvertent discovery of cultural items, a written Plan of Action must be prepared in accordance with 43 CFR Part 10.5(e).

In accordance with 43 CFR Part 10.5(e), the intentional excavation of human remains, funerary objects, sacred objects, or objects of cultural patrimony from Federal or tribal lands (after November 16, 1990) is permitted only if:

1. the objects are excavated or removed following the requirements of ARPA and its implementing regulations; and
2. The objects are excavated after consultation with, or in the case of tribal lands, with the consent of, the appropriate Native American tribe(s) or Native Hawaiian organization pursuant to 43 CFR Part 10. The disposition of the objects is consistent with their custody as described in 43 CFR Part 10.6. Proof of the consultation or consent is shown to the Federal agency GC or other official (the CRM) responsible for the issuance of the required permit.

The Picatinny Arsenal employee or contractor who inadvertently discovers human remains must notify the responsible Federal official (i.e. the GC or CRM, in accordance with 43 CFR Part 10.4[b]; SOP #4). Certification of receipt of notification by the GC or designated representative (the CRM) initiates the 30-day waiting period.

If the inadvertent discovery occurred in connection with an ongoing activity at the

installation, the person providing the initial notice described above must stop the activity in the area of the inadvertent discovery and make a reasonable effort to protect the human remains, funerary objects, or objects of cultural patrimony.

Upon having received notification of the actual or potential disturbance or the discovery of a human burial site, human remains, or burial/sacred goods, Picatinny Arsenal shall, as soon as possible, but no later than three (3) working days after receipt of the notification: Report the receipt of such notification by telephone, with written confirmation, to the appropriate Native American tribal contact and the NJ HPO. The notification shall include pertinent information as to the kinds of human remains, funerary objects, sacred objects, or objects of cultural patrimony inadvertently discovered, their condition, and the circumstances of their inadvertent discovery,

Repatriation

In accordance with NAGPRA, Sections 5, 6, and 7

- if the cultural affiliation of Native American human remains and associated funerary objects with a particular Native American tribe is established, Picatinny Arsenal shall upon the request of a known lineal descendant of the Native American, or of the tribe or organization expeditiously return such remains and associated funerary objects and materials; and
- if the cultural affiliation with a particular Native American tribe is shown with respect to unassociated funerary objects, sacred objects or objects of cultural patrimony, Picatinny Arsenal shall upon the request of the Native American tribe expeditiously return such objects.

In the event Picatinny Arsenal or the coroner's duly designated representative has reason to suspect that the burial contains a victim of a recent prosecutable crime or accidental death, the proper military authorities (Security Police) and the Arsenal TJAG office will be notified.

SOP #5- Procedures for the Recovery of Human Remains

In the event human remains are encountered, the project manager, construction supervisor or project archaeologist will cease activities in the immediate area of discovery and make an effort to protect the resources while notifying the CRM. The CRM will then inform the security office of the discovery.

The CRM, with the help of a coroner or physical or forensic anthropologist will determine if the remains are human, and whether or not they are associated with an archaeological deposit. If the remains are not human and are not associated with an archaeological deposit, the work may continue. If the remains are human, the appropriate law enforcement officials should be notified. These officials will visit the site with the CRM and determine, with the aid of a coroner or physical/forensic anthropologist, if the remains are recent or ancient. If the remains are recent, then the matter becomes the responsibility of law enforcement officials who will determine when project activities

will resume. If the remains are not modern and not Native American, then the provisions described above for inadvertently discovered archaeological remains are to be followed (SOP #2).

If the remains are determined to be of Native American origin, specific NAGPRA regulations must be followed pursuant to 43 CFR 10.4 (SOP #4). NAGPRA requires, upon an unexpected discovery of Native American human remains, funerary objects, sacred objects, or objects of cultural patrimony, further construction or archaeological activities in the area of discovery should cease for 30 days after the appropriate Federally recognized tribes and/or lineal descendants have been officially notified.

The removal of the Native American human remains may proceed when:

1. the consent of the appropriate Federally recognized tribal group is obtained;
2. ownership and right-of-control of such items is not in dispute; and
3. proof of consultation and notification is documented.

The CRM will be responsible for the security of the site pending resumption of the testing operations or resolution of site mitigation.

SOP #6- Compliance with the Archeological Resources Protection Act of 1979 (ARPA) and Section 110 of the NHPA

The purpose of this act is to prevent vandalism and unregulated excavation and removal of archaeological resources on publicly owned and Indian lands. Typically, a permit is required for the excavation and removal of artifacts from Federal lands, if the activity is not sponsored by a Federal agency. This permit-granting authority resides with the land manager responsible for the property; permits for Army installations are granted by U.S. Army Corps of Engineers District, Real Estate Division (AR 405-80). Obtaining an ARPA permit does not constitute compliance with Section 106 of the NHPA, however. For ARPA compliance, the installation should coordinate with the New York District Planning and Real Estate Divisions to meet permit granting requirements.

All archaeological sites and Cultural Resources are protected under this act and within Section 110 of the NHPA to include sites both known and eligible for listing in the NRHP as well as those properties not yet known or evaluated. As a result, land managers must balance site protection with the needs of the installation's established policies, plans, and mission. Archaeological investigations provide a means for identifying and potentially avoiding site impacts. If project actions have the potential to harm or destroy any Native American tribal, religious or cultural sites, the installation must notify and consult with the appropriate tribes before issuing ARPA permits (SOP #4). If projects or individuals impact archaeological resources, care must be taken to ensure the CRM, and possible other qualified individuals or institutions conduct the necessary archaeological investigations or evaluations, and subsequent archaeological material receives adequate curatorial care (SOPs #2 and 8).

If it appears individuals or institutions fail to meet or violate the conditions of the permit, Federal land managers must suspend the permit and investigate the reputed violation. Violations of ARPA can result in financial penalties or jail.

Section 110 and Historic Property Monitoring

Section 110 of the NHPA charges Federal agencies with the protection of Historic Properties, along with encouraging agencies to compile inventories and integrate information on Historic Properties into project planning and other undertakings. In accordance with Section 110 of the NHPA and to ensure ARPA violations are not occurring to archaeological sites, the CRM should actively monitor all archaeological sites either eligible or of unknown eligibility. This also includes sites not in direct threat by development, activities, or any other undertakings. Monitoring should occur at least once every six (6) months to Historic Properties at Picatinny Arsenal, including historic buildings and districts. This increased surveillance should also be coordinated with the Picatinny police and security offices to ensure the apprehension of individuals and seizure of stolen materials from the installation by artifact collectors. This includes the enforcement of the utilization of metal detectors for any other activity other than UXO survey and clearance authorized by the security office. ARPA training will also be given to police personnel by the CRM every two years depending on employee turnaround.

If degradation, vandalism, erosion, or some other threat or deterioration is noted during these monitoring instances it is considered an adverse effect and the CRM should act quickly to ensure adequate protection and restoration to the property in consultation with the NJ HPO and ACHP and for applicability to the Secretary of Interior's Standards. This can include restricting access to the archaeological site(s) and immediate areas by fencing, installing security cameras, establishing vegetation like greenbrier and other thorny plants, and intentionally burying the site with clean fill to render visibility and future threats and impacts.

SOP #7- Mothballing Eligible Historic Properties

When all means of finding a productive use for an eligible historic building have been exhausted or funds are not currently available to render a deteriorated structure into a usable building, it may be necessary to close the building temporarily to protect it from the weather as well as to secure it from vandalism. Mothballing, as the process is known, is a necessary and effective way to protect a building while its future is being determined (see also Section 6.4.2).

A project team should first be established, in conjunction with the CRM consisting of at least an architect, historian, preservation specialist, structural engineer, and a contractor. The project team shall then follow the proper procedures for mothballing a building including:

- Documentation- of the architectural and historical significance of the building along with the preparation of a condition assessment of the building;

- Stabilization- of the building(s) structurally, based on the condition assessment, along with the extermination or control of pests, including termites and rodents, and protecting the exterior from moisture penetration; and finally
- Mothballing- by securing the building and its component features to reduce vandalism or break-ins, along with providing adequate ventilation to the interior. Secure or modify utilities and mechanical systems. Develop and implement maintenance and monitoring plan for protection. Mothballing measures should not result in damage and each treatment should be weighed in terms of its reversibility and overall benefit to the structure.

The three highest priorities for a structure while it is mothballed are: to protect it from sudden loss; to weatherize and protect the building to stop moisture penetration; and to control the humidity levels inside once the building has been secured (see Preservation Brief No. 31: Mothballing Historic Buildings for further information).

If a vacant property has been declared unsafe, like many at Picatinny have been, stabilization and mothballing may be the only way to protect the building from demolition. Also, providing temporary protection and stabilization for vacant historic buildings can slow deterioration while a compatible use for the building is found.

SOP # 8- Curation of Cultural Materials (36 CFR 79)

All cultural materials (i.e. artifacts) collected during archaeological inventory within Picatinny Arsenal should be curated in compliance with 36 CFR Part 79- Curation of Federally Owned and Administered Archaeological Collections, including field records and photographs. Picatinny should develop a curation agreement with a facility meeting the standards cited in 36 CFR Part 79(9) or establish a facility and/or storage space on the installation adequate to meet this regulation (in process). Assistance in preparing an agreement and evaluating the appropriateness of a repository can be obtained from the HQDA Federal Preservation Officer (FPO), NJ HPO, NJSM, or the NPS.

Part 79(9) regulates the facility be specifically designed to serve as a physical repository where artifacts are sorted, repackaged, assessed for conservation needs, and then placed in an appropriate, environmentally controlled storage area. The overall goal of the Federal program, as set forth in 36 CFR Part 79, is to ensure the preservation and accessibility of artifacts for use by members of the public interested in the archaeology of the region. Artifact data is entered into a database, which is an important management and research tool.

Archaeological material has been collected at Picatinny Arsenal and will continue to be collected in the future. AR 200-1 requires the GC to ensure all archaeological collections and associated records, as defined in Part 79 are processed, maintained, and preserved in accordance with the requirements.

SOP # 9- National Environmental Policy Act (NEPA) Coordination

Whenever practical, effort should be made to coordinate the Section 106 and NEPA review processes. This can result in savings of time and funds by eliminating duplication of effort on a given project. There are some general principles and procedures as per 36 CFR 800.8 (a and b). These are:

- *Early coordination-* The compliance processes of both reviews should be meshed as early as possible and be conducted so the requirements of both are met. Furthermore, the determination as to whether the undertaking is a NEPA major action requiring an EIS should consider the likely effects on Historic Properties. On the other hand, an adverse effect on Historic Properties does not necessarily trigger an EIS.
- *Consulting party roles-* The NJ HPO, public, and other concerned entities (ie. township municipalities, and local historical societies and commissions) should be prepared to consult early in the NEPA process when the project's need, scope and alternatives are being discussed.
- *Inclusion of historic preservation issues-* The CRM and other environmental professionals at Picatinny should ensure NEPA review, whether it is an EA, FONSI or a REC, includes the identification, evaluation, assessment of effects and consultation which lead to a resolution of adverse effects on Historic Properties.
- *Actions categorically excluded under NEPA-* An undertaking categorically excluded under NEPA may still require Section 106 review. In these cases, the CRM should determine if the action still qualifies for review under Section 106 using procedures outlined in SOP #1.
- *Use of the NEPA process for Section 106 purposes-* The CRM may use the NEPA documentation process in lieu of Section 106 documentation providing the CRM notifies the NJ HPO and the ACHP that he or she intends to do so.

With these general principles and procedures in mind, the CRM may then proceed with the following:

1. Develop environmental documentation to comply with Section 106 during EA or EIS preparation. The CRM should:
 - a. identify consulting parties during the NEPA scoping process but consistent with 36 CFR 800.3(f);
 - b. identify Historic Properties and assess the effects of the undertaking on such properties in a manner consistent with the standards and criteria of 36 CFR 800.4 through 800.5, provided the scope and timing of these steps may be phased to reflect Picatinny's consideration of alternatives under NEPA;
 - c. consult with the NJ HPO and the ACHP, when appropriate, regarding the effects of the undertaking on Historic Properties during the NEPA scoping and environmental analysis phases;
 - d. involve the public in accordance with the agency's published NEPA

- procedures and Section 106 public participation plan;
- e. based on consultation, discuss in the EA or EIS alternatives and measures to avoid, minimize or mitigate adverse effects to Historic Properties.
2. Review of environmental documents:
 - a. if the environmental document is an EA, submit it to the NJ HPO and consulting parties for review. If it is a EIS, submit it to the NJ HPO, consulting parties, and the ACHP.
 - b. During or prior to the NEPA public comment period, the NJ HPO, ACHP or other consulting parties may object to the EA or EIS has not met standards to fulfill Section 106 requirements or the measures to mitigate the effects of the undertaking on Historic Properties is inadequate. In the case of the latter, the CRM will submit the matter to the ACHP for review and comment.
 3. Resolution of objections: Within 30 days of referral to the ACHP, they must notify the CRM whether they agree with the objections (2b) in which case the CRM must enter into consultation as outlined in SOP #1 [36 CFR 800.6(b)(2) or 800.7(a)]. If the ACHP disagrees with the objections or does not respond within 30 days, the CRM can continue compliance under NEPA.
 4. Approval of the undertaking: If during the preparation of the EA or EIS, the CRM determines Historic Properties will be adversely affected, then he or she will develop alternatives and measures that may avoid, minimize or mitigate the adverse effects in accordance with Section 106 described above in SOP #1. Picatinny's responsibilities under Section 106 are satisfied when either:
 - a. a binding commitment to such proposed measures is incorporated in the ROD, if such measures were proposed in a EIS, or an MOA, drafted in compliance with 36 CFR 800.6(c); or
 - b. the ACHP has commented under 36 CFR 800.7 and received the installation's response to such comments.
 5. Modification of the undertaking: If the action is modified after the approval of the FONSI or ROD in a way altering its effect on Historic Properties or if the installation fails to ensure that the mitigation measures specified in the FONSI, ROD or MOA are carried out, then the CRM will notify the ACHP, NJ HPO and consulting parties that supplemental NEPA documentation will be prepared or the procedures in 36 CFR 800.3 through 800.6 will be followed as necessary. Also see SOP # 1 for further information.

Appendix H: Environmental Setting and Cultural History Summary

This appendix discusses Picatinny's present physical landscape and environmental setting (physiography, topography, soils, hydrology, climate, flora, and fauna).

H.1 ENVIRONMENTAL SETTING/PHYSICAL LANDSCAPE

Located approximately 30 miles northwest of New York City, Picatinny Arsenal is situated in the northwestern portion of Morris County in the Townships of Rockaway and Jefferson (Figure 1.1), in the Highlands region of north-central New Jersey. Within the New England physiographic province (see Figure 1 below), the Highlands are part of a mountainous prong running in a southwest-northeast direction between Bear Mountain, New York, and Reading, Pennsylvania. Much of the area in the northern portion of the county comprises rugged upland, with the extreme northwestern section consisting of forest areas and mountains. Some areas in the southeastern portion and most of the far western areas are suitable for agriculture. Contained within the Green Pond Brook Valley, Picatinny Arsenal covers approximately 5,850-acre (2,367-hectare) and is flanked by uplands to the west and east. Steep slopes, stony soils and rocky outcrops characteristic of the region precluded much field crop agriculture except for cattle-raising and dairying on small valley farms. While the Highlands include undeveloped tracts, economic development historically focused on mineral extraction and iron production (Rutsch 1999: 4-5; WES 1996:7; Eby 1976:1; Klein et al. 1986:1-4; Fitch and Glover 1990: B-145).

H.1.1 *Topography*

The land on which Picatinny is located stretches northeast from the terminal moraine deposited at the southern boundary of the furthest advance of the Wisconsin Glaciation. Glacially scarred mountains, the Highlands are part of the Reading Prong of the New England uplands and consist of rugged ridges cresting in elevation between 1,000 and 1,400 feet (305 and 427 meters) above mean sea level (amsl). These ridges are separated by long, narrow valleys, which lie between 300 to 600 feet (91 to 183 m) and below the ridges (Eby 1976:105-107; Klein et al. 1986:2-1; Fitch and Glover 1990: B-123-125; Rutsch 1999:2-3; WES 1996:12). Picatinny is positioned in a valley between two of these ridges: "To the west are rugged, rocky slopes and rough, stony land with little soil. Slopes at the southern end of the western range and on the east side of the valley are less rugged" (Klein et al. 1986: 3-1), but rise to an elevation of 1,160 feet (354 m) amsl. With near vertical slopes, Green Pond and Copperas Mountains, on the northwestern boundary of the installation, rise over 1,200 ft (366 m) amsl (WES 1996:7). While large stones and rock-outcroppings are conspicuous, the generally level Highlands valleys are drained by numerous small streams, ponds and wetlands. Picatinny Arsenal land is drained by Green Pond Brook, which flows southwest into the Rockaway River.

GEOLOGIC MAP OF NEW JERSEY

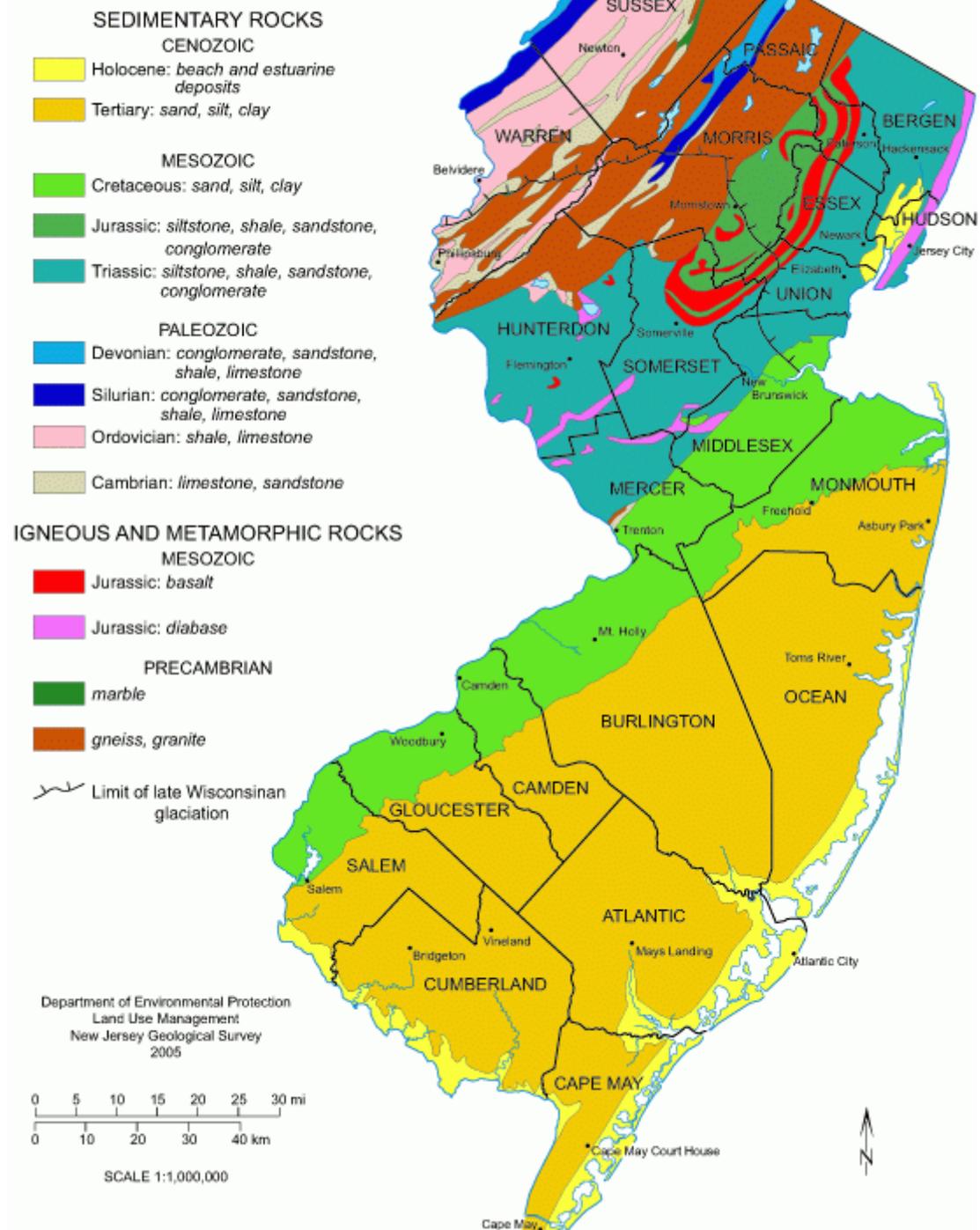


Figure H.1. Physiographic provinces of New Jersey (2007, <http://www.state.nj.us/dep/njgs/index.html>).

H.1.2 *Geology (Physiography)*

The ridges and valleys of the Highlands are generally underlain by bedrock of Pre-Cambrian gneiss. This type of rock predominates the eastern half of the installation, underlying more than half of the installation, especially the ridges. The gneissic bedrock of the New Jersey Highlands has a mixed mineralogy comprising magnetite, quartz and oligoclase, with lesser amounts of biotite, orthoclase, and hornblende (Eby 1976:107). Other, younger rock formations from the Cambrian and Silurian ages underlie the western half of Picatinny, and include Green Pond Conglomerate, along the western edge of the installation, Leithsville Formation, in a weathered band running southwest from Picatinny Lake, and Hardyston Quartzite, in a thin band separating the Leithsville Formation rocks from the gneiss. The lack of continuity among the bedrock is attributable to erosion and several phases of glaciation, ending with the Wisconsin phase between 14,000 and 16,000 years ago (WES 1996:7-12; Fitch and Glover 1990:B-123-124).

Moreover, the interplay between at least three glaciations and the properties of the bedrock determined the topography described above. The location of softer Cambrian era rocks (Leithsville Formation and Hardyston Quartzite) between harder pre-Cambrian and Silurian era rocks (Gneiss and Green Pond Conglomerate, respectively), impacted by glaciations and retreats, resulted in the creation of a parallel landscape of narrow valleys between steep ridges (WES 1996:12, 26; Eby 1976:107).

H.1.3 *Soil Characteristics*

Dislodged pre-existing soils pushed south during glacial advance, the terminal moraine deposited by the last glaciation (Wisconsin) divides Morris County into two soil regions: generally infertile soil north of the moraine and more arable soil south of the moraine. Picatinny is north of the moraine, which lies in an east-west direction along Route 80 where ice covered the valleys and ridges. Layers of till and sediments derived from glaciation or glacial Lake Picatinny cover the Green Pond Brook valley within the installation (Rutsch and van Voorst 1991:12-13; WES 1996:7, 12). These layers of glacial till range from gravelly loamy sand to silt loam, while the predominant soils in the vicinity of the installation are gravelly and extremely stony sandy loams with outcrops common along steep slopes (Eby 1976:3).

The *Soil Survey of Morris County* identifies 21 soil types contained within Picatinny Arsenal (Figure 2a-c). The most common of these soil types belong to the Rockaway and Hibernia soil series (Eby 1976: Sheets 4, 5, 8, 9, 14). These soil types comprise six soil groups including two humaquept soils, two muck soils, three fragiaquept soils, nine fragiudult soils, five dystrochrept soils, and three soils classified as made land. The most common type of soil at Picatinny Arsenal, fragiudult, occur on the glacial till areas on the valley side slopes and ridge crest. The fragiudult soils include both the Hibernia and Rockaway soils series. Dystrochrept soils occur in the valley bottom and include Riverhead, Pompton, Otisville, and Nekong soil series. The fragiaquept soils include the Ridgeberry and Whitman soil series and occur in low narrow drainage areas within the glacial till covered uplands. The fragiaquept soils are all hydric

[prone to wetlands]. In the lowermost part of Picatinny Valley near the southern end of the Arsenal, two muck soils occur, the Adrian and the Carlisle, both of them hydric. The two humaquept soils that occur are both of the Preakness series and also occur in the lower end of Picatinny Valley in association with the muck soils. Both of the humaquept soils are also hydric" [WES 1996:18]. While soils of the Rockaway-Hibernia-Urban Land association predominate, almost all of the other soils within Picatinny are stony, shallow and poorly developed (Rutsch et al. 1986:13). Occurring on the lower portion of ridges, Rockaway-Hibernia soils are deep, upland soils formed in deposits of glacial till and range from well drained to somewhat poorly drained, gravelly to extremely stony loams and sandy loams. These deep soils can have slopes ranging from 3 to 25 percent. Rockaway gravelly to extremely stony sandy loams and Rockaway-Rock outcrop complex characterize the ridges near the installation. These deep, upland soils are moderately well to well drained and have slopes ranging from strongly sloping to steep (25 to 45 percent slopes). Rock outcrops within this association consist of large stones of either granitic gneiss or Green Pond Conglomerate. These soils also occur on ridges, especially around Lake Denmark (Eby 1976:3, 49-52, 28-29; Fitch and Glover 1990:B-125-126; Rutsch et al. 1986:13; WES 1996:91-94).



Legend

- Soil Classifications**
- Adrian muck (Ad)
 - Carlisle muck (Cm)
 - Hibernia stony loam (HbC)
 - Hibernia very stony loam (15-25% slopes; HID)
 - Made land, sanitary land fill (Ma)
 - Otisville gravelly loamy sand (OtC)
 - Pits, sand and gravel (Ps)
 - Pompton sandy loam (PtB)
 - Preakness sandy loam (PvA)
 - Ridgebury extremely stony loam (RiB)
 - Ridgebury very stony loam (RbB)
 - Riverhead gravelly sandy loam (RmB)
 - Rock outcrop (Rt)
 - Rock outcrop-Rockaway complex (steep; RvF)
 - Rockaway extremely stony sandy loam (15-25% slopes; RrD)
 - Rockaway gravelly sandy loam (RoC)
 - Rockaway very stony sandy loam (RpC)
 - Rockaway-Rock outcrop complex (RsC)
 - Urban land (Ua)
 - Urban land-Rockaway complex (UrD)
 - Water
 - Whitman very stony loam (Wm)
 - 10ft. Contour Topography
 - Buildings
 - Roads
 - Restrictive Easements
 - Installation Boundary

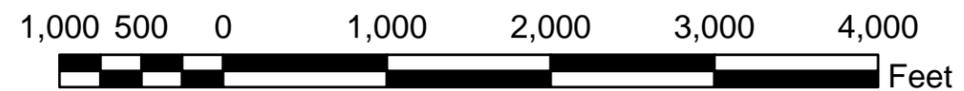
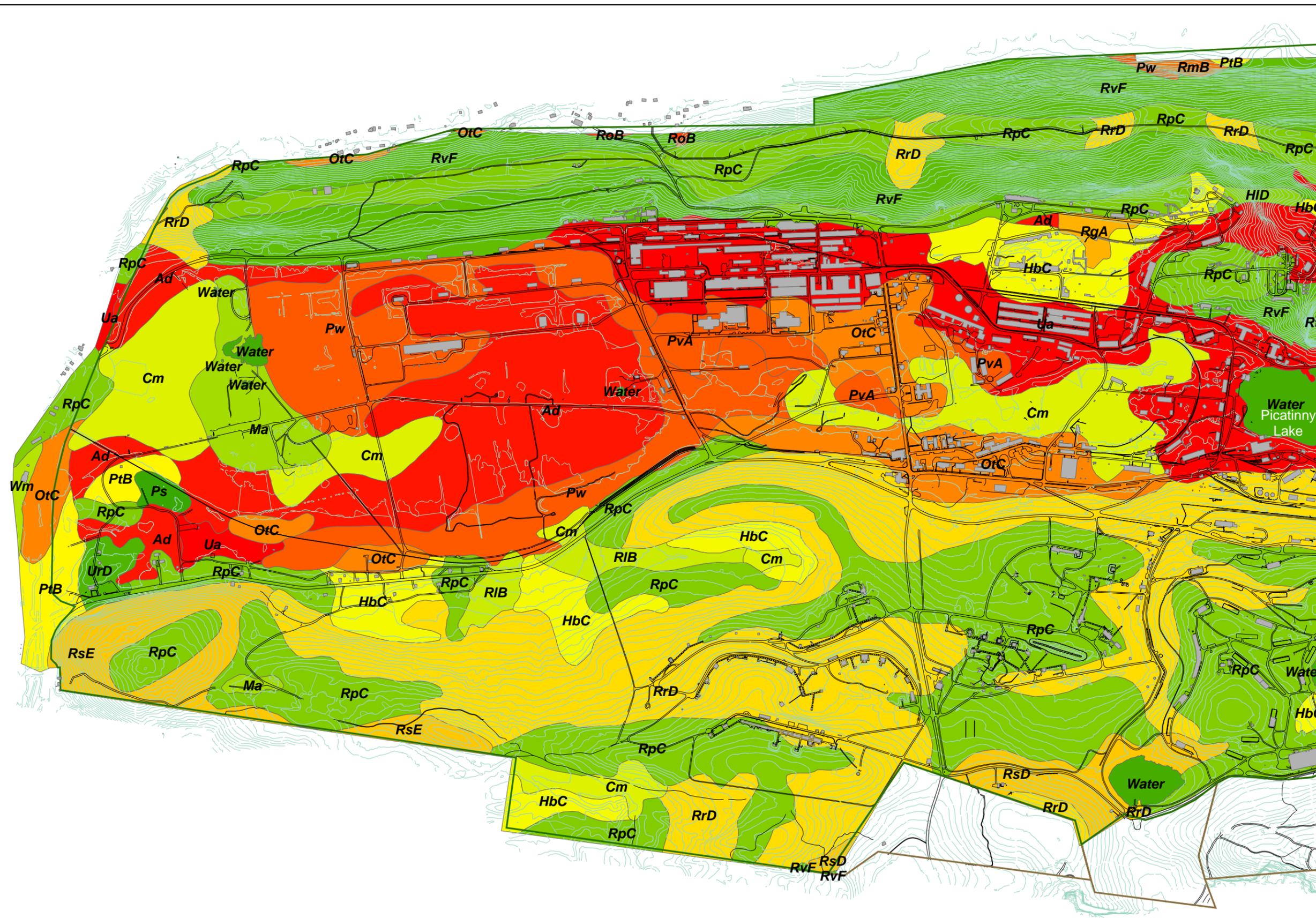
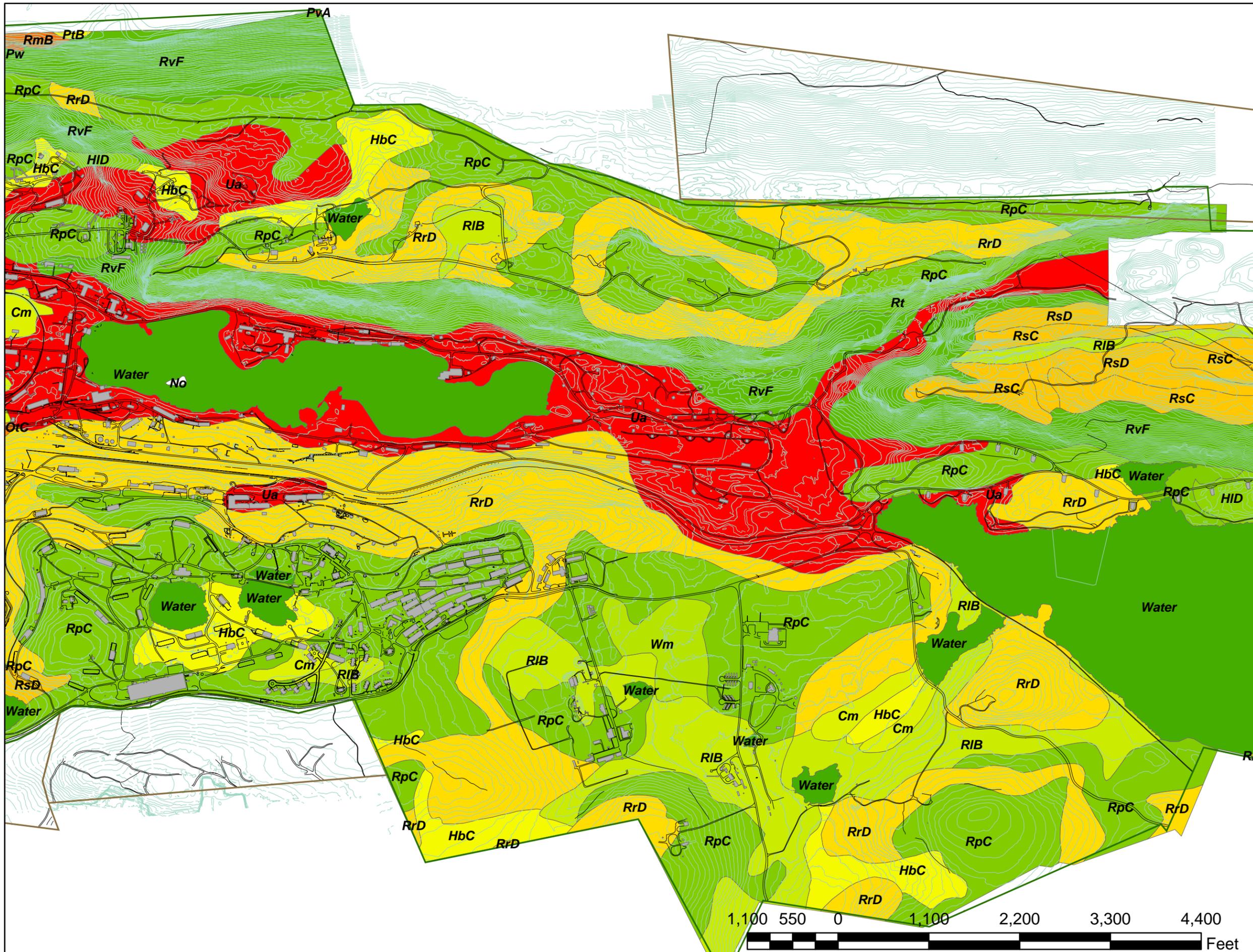


Figure H.2a
Soils Within Southwestern
Sections of Picatinny.



Legend

- Soil Classifications**
- Adrian muck (Ad)
 - Carlisle muck (Cm)
 - Hibernia stony loam (HbC)
 - Hibernia very stony loam (15-25% slopes; HID)
 - Made land, sanitary land fill (Ma)
 - Otisville gravelly loamy sand (OtC)
 - Pits, sand and gravel (Ps)
 - Pompton sandy loam (PtB)
 - Preakness sandy loam (PvA)
 - Ridgebury extremely stony loam (RiB)
 - Ridgebury very stony loam (RbB)
 - Riverhead gravelly sandy loam (RmB)
 - Rock outcrop (Rt)
 - Rock outcrop-Rockaway complex (steep; RvF)
 - Rockaway extremely stony sandy loam (15-25% slopes; RrD)
 - Rockaway gravelly sandy loam (RoC)
 - Rockaway very stony sandy loam (RpC)
 - Rockaway-Rock outcrop complex (RsC)
 - Urban land (Ua)
 - Urban land-Rockaway complex (UrD)
 - Water
 - Whitman very stony loam (Wm)
 - 10ft. Contour Topography
 - Buildings
 - Roads
 - Restrictive Easements
 - Installation Boundary



Figure H.2b
Soils Within Central Sections
of Picatinny.



Legend

- Soil Classifications**
- Adrian muck (Ad)
 - Carlisle muck (Cm)
 - Hibernia stony loam (HbC)
 - Hibernia very stony loam (15-25% slopes; HID)
 - Made land, sanitary land fill (Ma)
 - Otisville gravelly loamy sand (OtC)
 - Pits, sand and gravel (Ps)
 - Pompton sandy loam (PtB)
 - Preakness sandy loam (PvA)
 - Ridgebury extremely stony loam (RiB)
 - Ridgebury very stony loam (RbB)
 - Riverhead gravelly sandy loam (RmB)
 - Rock outcrop (Rt)
 - Rock outcrop-Rockaway complex (steep; RvF)
 - Rockaway extremely stony sandy loam (15-25% slopes; RrD)
 - Rockaway gravelly sandy loam (RoC)
 - Rockaway very stony sandy loam (RpC)
 - Rockaway-Rock outcrop complex (RsC)
 - Urban land (Ua)
 - Urban land-Rockaway complex (UrD)
 - Water
 - Whitman very stony loam (Wm)
 - 10ft. Contour Topography
 - Buildings
 - Roads
 - Restrictive Easements
 - Installation Boundary

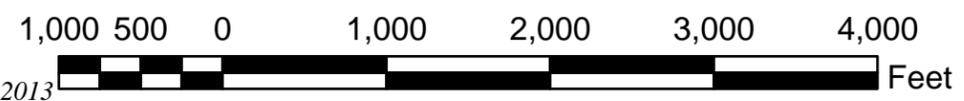
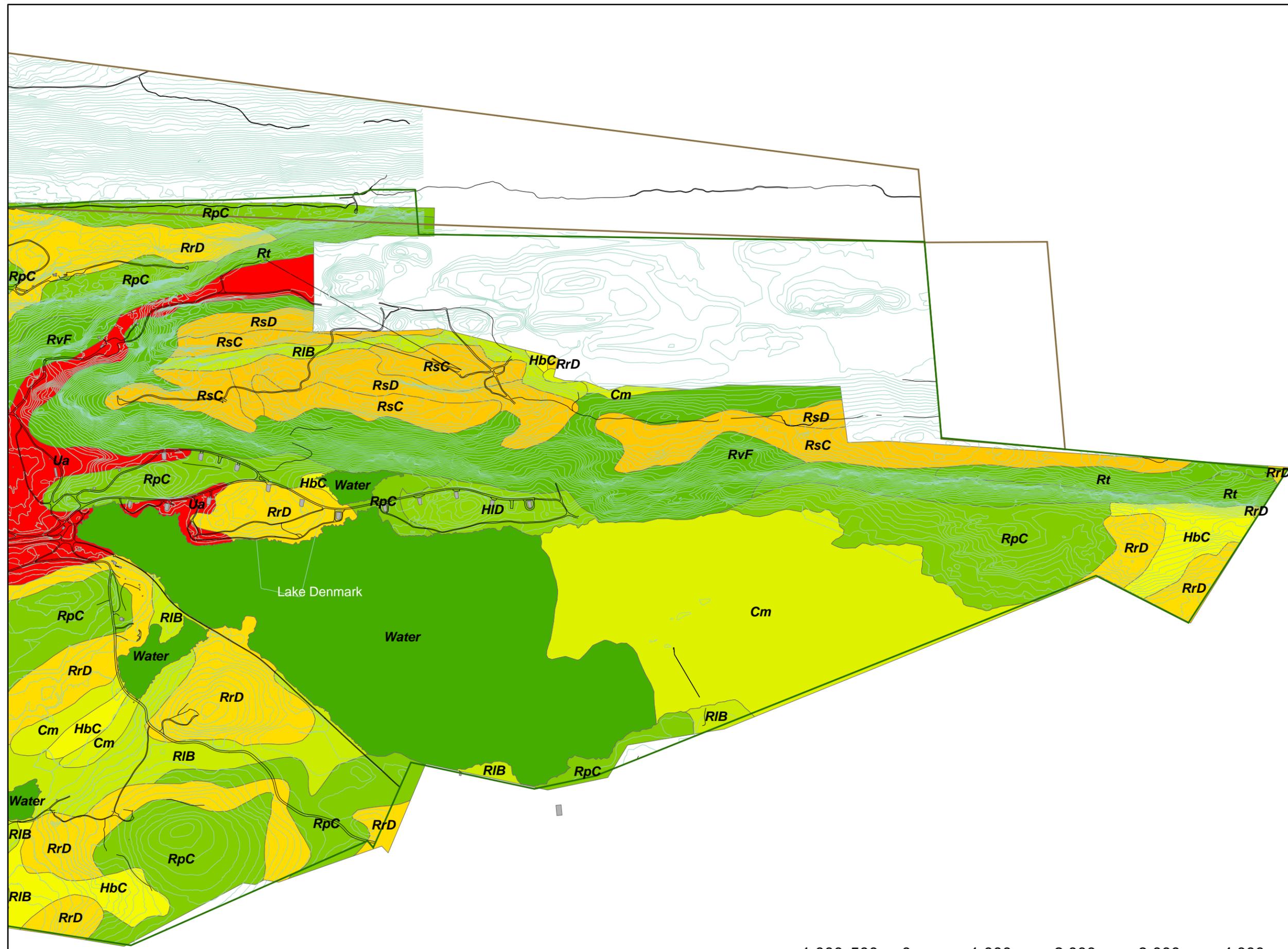


Figure H.2c
Soils Within Northeastern Sections of Picatinny.

Secondary soil associations within Picatinny include soils formed in deposits of glacial outwash or glacial lake sediment south of Picatinny Lake. These level or nearly level soils include the Carlisle-Parsippany-Preakness association and Preakness and Pompton sandy loams. Found near depressions and low gradient streams, Carlisle-Parsippany-Preakness soils comprise deep, poorly and very poorly drained mucks, silt loams and sandy loams which are underlain by stratified glacial lake sand, silt and clay. Formed in glacial fluvial deposits, Preakness and Pompton sandy loams are deep, somewhat poorly drained soils found on nearly level outwash plains, east of Green Pond Brook (Eby 1976:6, 41; Fitch and Glover 1990:B-126; Rutsch et al. 1986:13; WES 1996: 90).

Within the central valley section of the installation, organic soils like Carlisle muck and Adrian muck can be found. These deep, nearly level organic soils are poorly drained in depressions and near streams and are prone to flooding due to a permanent high water table. Carlisle muck is located north of Lake Denmark, while Adrian muck is located south of Picatinny Lake (Eby 1976: 12, 22; WES 1996:89-91). Prior to historic land use changes associated with the development of the installation in the 19th Century, the lower third of Green Pond Brook valley within the installation was classified as primarily wetlands (WES 1996:17).

Disturbed and unassociated soils also exist within Picatinny. These soils include areas of made land associated with a sanitary landfill, which consists of fill of varying composition. An area of reclaimed swampland along Green Pond Brook in the southeast is known as a "burning ground" and consists of unexploded ordnance, explosive scrap and miscellaneous materials (Eby 1976:31; Fitch and Glover 1990: B-127; Mr. Vernon Shankle, personal communication 1995). Another category of soil within Picatinny is Urban land. Generally having a nearly level to gently sloping landscape, these soils have been impacted by activities related to the construction of buildings, houses, parking lots and roads. The very deep soils in this complex are typically well drained with a texture varying from fine to coarse. The Urban land component consists of variably sloping areas where over 85 percent of the land surface has been covered with concrete, asphalt or other impervious materials and where soils have been disturbed by grading or smoothing. This kind of land can consist of several feet of fill to cover poorly drained areas (Eby 1976:53-55; Fitch and Glover 1990:B-127).

H.1.4 *Hydrology*

Picatinny Arsenal is situated in the Green Pond drainage, which is a tributary to the Rockaway River, the major drainage of this section of the Highlands. Three small streams flow through the installation: Green Pond Brook, Burnt Meadow Brook and Bear Swamp Brook. A fresh water impoundment, Green Pond lies northwest of the installation and is drained by Green Pond Brook, which flows into the installation from the northeast. Burnt Meadow Brook joins Green Pond Brook below Lake Denmark and both flow southwest into Picatinny Lake. Continuing from this lake where it is joined from the west by Bear Swamp Brook, Green Pond Brook flows southwest through the installation to the Rockaway River.

Additional hydrologic features of Picatinny include two small lakes, Lake Denmark and Picatinny Lake. Both impoundments are artificial reservoirs created in the 18th Century to supply water for the nascent iron industry. Lake Denmark, the larger of the two, was created by damming Burnt Meadow Brook to supply power for the Upper Forge industrial complex. Picatinny Lake, slightly more than half the size of Lake Denmark, was created to supply power for the Middle Forge industrial complex. The U.S. Army enlarged Picatinny Lake after 1881 (WES 1996:16-17; Fitch and Glover 1990: B-129-130). Since taking over the property in 1881, the Army has conducted extensive land-altering activities to reclaim wetlands and improve drainage channels, including the placement of storm drains and culverts throughout the southern portion of the central valley (Fitch and Glover 1990:B-130-131). A southeastern portion of the installation and an area contiguous with the northern shore of Lake Denmark are in wetlands.

H.1.5 *Climate*

While Morris County is generally humid and temperate, conditions vary as the topography changes gradually from the undulating lowlands of the south and east to the steeply-sloped uplands of the northwest. The area's continental climate is characterized by dramatic seasonal temperature changes with only slight influences from the ocean. As one might expect, the summers in the Green Pond Brook basin are warm and the winters are cold. Despite an average of approximately 69°F, summer temperatures reach the middle 90s frequently, although rarely reaching 100°F. Strong late afternoon thunderstorms are common during the summer with the wind generally prevailing from the southwest (Eby 1976:89, 108-109; Klein et al. 1986:2-2; WES 1996:14-16).

While winter temperatures average about 30°F, low temperatures can fall below 10°F for periods. Average seasonal snowfall amounts hover around 40 inches (101 cm), with double digit snowfalls in a single storm uncommon. Annual precipitation averages between 46 and 49 inches (116 and 125 cm), with over half the total falling during the spring and summer, although precipitation is generally well distributed over the year (Eby 1976:108; Klein et al. 1986:2-2). While hard frosts frequently cease during early May, they can occur as late as the middle of May. These frosts generally arrive during early October, though an occasional killing frost occurs during late September (Eby 1976:109; Lev Zetlin Associates 1992:1.8).

H.1.6 *Flora*

Forests dominated the original landscape of Morris County and the slopes of the Highlands ridges. Much of the area's forests were cleared during the 18th Century to utilize the plentiful magnetite ore deposits and in the charcoal-making process to facilitate the smelting of iron (Eby 1976:62; Rutsch and van Voorst 1991:13). As a result, the existing forest is largely secondary growth. The predominant tree species among this secondary growth within the installation is a mixed oak type with an understory including mountain laurel, great rhododendron, and flowering dogwood (Fitch and Glover 1990:B-127, B-129; Eby 1976:58-59, 62). Oak and hickory dominate the

ridge areas, Red Maple predominates the wetter valley soils, and a mixture of Northern Hardwoods, including sugar maple, beech and birch, are common throughout the rest of the valley area (STV/Lyon Associates, Inc. 1994:1.3.4). While approximately 75 percent of the installation acreage is forested, areas of the installation are also landscaped and maintained on a regular basis. These areas include lawns and a golf course, and are planted with trees of spruce, ash, cherry willow and apple. Shrubs include azalea, barberry, lilac and forsythia (Fitch and Glover 1990: B-129).

Micro-environments within Picatinny contain differing and specific plant-types. The wetlands environment near Picatinny and Denmark Lakes are home to species of pondweeds, bladderworts and broadleaf cattail, while shrublands are dominated by red maple, swamp azalea, speckled alder, upright sedge and marsh fern. Areas considered wet meadow support common reed grass and goldenrod, among others. The valley's forested areas contain green ash, red maple, American elm, yellow birch, hemlock and various ferns, reeds and sedges (WES 1996:100-107).

H.1.7 *Fauna*

Morris County's varied landscape provides a rich habitat for a variety of wildlife types, including populations of deer, rabbit and song birds. While specific environmental settings host different species, Picatinny Arsenal encompasses several distinct environments, including wetland and woodland. Within the Green Pond Brook valley, forests, streams and ponds support a variety of smaller mammals and fish. The *Future Development Master Plan for U.S. Army ARDEC* notes, "A total of 375 vertebrate species are known to occur on the installation. This vertebrate fauna consists of 34 species of mammals, 181 species of birds, 19 species of reptiles, 15 species of amphibians, and 26 species of fish" (Lev Zetlin Associates 1992:2.3). White-tailed deer, muskrat, skunk, opossum and beaver are known to inhabit the areas in the vicinity of the installation, and are joined by migratory waterfowl, pheasant, hawks and owls (Eby 1976:58; Klein et al. 1986:2-3). These species are being undermined by the increasing development and suburbanization of the county. WES (1995:137) noted several threatened or endangered species inhabit the area enclosed by Picatinny, including bald eagle, peregrine falcon, Indiana bat, bog turtle, timber rattlesnake, long-tailed shrew, cerulean warbler, eastern woodrat, New England cottontail, and long-tailed salamander.