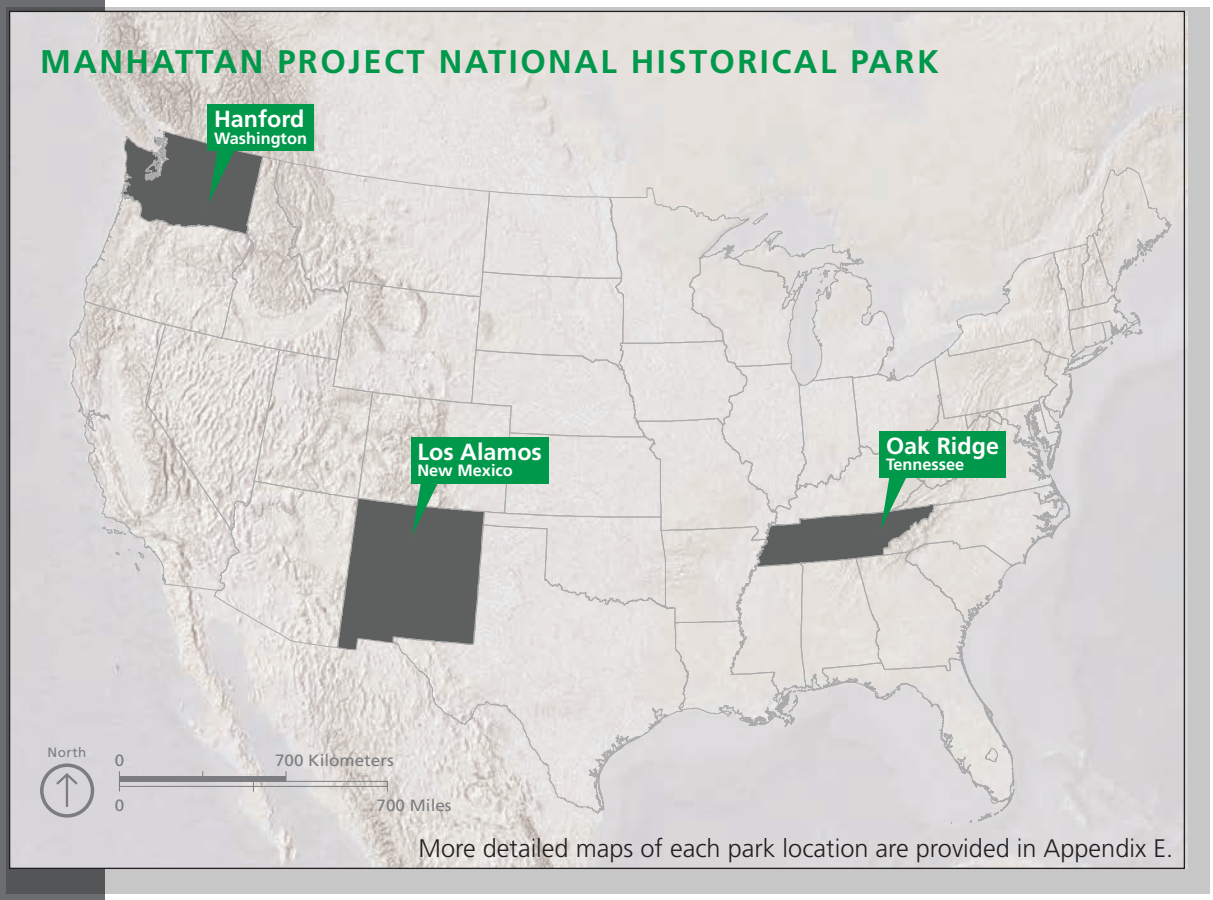
NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR

Foundation Document

Manhattan Project National Historical Park

Tennessee, New Mexico, Washington

January 2017



More detailed maps of each park location are provided in Appendix E.

Contents

Mission of the National Park Service

The National Park Service (NPS) preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

The NPS core values are a framework in which the National Park Service accomplishes its mission. They express the manner in which, both individually and collectively, the National Park Service pursues its mission. The NPS core values are:

- **Shared stewardship:** We share a commitment to resource stewardship with the global preservation community.
- **Excellence:** We strive continually to learn and improve so that we may achieve the highest ideals of public service.
- **Integrity:** We deal honestly and fairly with the public and one another.
- **Tradition:** We are proud of it; we learn from it; we are not bound by it.
- **Respect:** We embrace each other's differences so that we may enrich the well-being of everyone.

The National Park Service is a bureau within the Department of the Interior. While numerous national park system units were created prior to 1916, it was not until August 25, 1916, that President Woodrow Wilson signed the National Park Service Organic Act formally establishing the National Park Service.

The national park system continues to grow and comprises more than 400 park units covering more than 84 million acres in every state, the District of Columbia, American Samoa, Guam, Puerto Rico, and the Virgin Islands. These units include, but are not limited to, national parks, monuments, battlefields, military parks, historical parks, historic sites, lakeshores, seashores, recreation areas, scenic rivers and trails, and the White House. The variety and diversity of park units throughout the nation require a strong commitment to resource stewardship and management to ensure both the protection and enjoyment of these resources for future generations.

The arrowhead was authorized as the official National Park Service emblem by the Secretary of the Interior on July 20, 1951. The sequoia tree and bison represent vegetation and wildlife, the mountains and water represent scenic and recreational values, and the arrowhead represents historical and archeological values.

Mission of the Department of Energy

The mission of the U.S. Department of Energy (DOE) is to enhance U.S. security and economic growth through transformative science, technology innovation, and market solutions to meet the nation's energy, nuclear security, and environmental challenges. The Department of Energy achieves its mission through an operational and programmatic framework that supports the following goals:

- **Science and Energy:** Advance foundational science, innovate energy technologies, and inform data driven policies that enhance U.S. economic growth and job creation, energy security, and environmental quality, with emphasis on implementation of the President's Climate Action Plan to mitigate the risks of climate change and enhance resilience to it.
- **Nuclear Security:** Strengthen national security by maintaining and modernizing the nuclear stockpile and nuclear security infrastructure; reducing global nuclear threats; providing nuclear propulsion; improving physical and cyber security; and strengthening key science, technology, and engineering capabilities.
- **Management and Performance:** Position the Department to meet the challenges of the 21st century and the nation's Manhattan Project and Cold War legacy responsibilities by employing effective management and refining operational and support capabilities to pursue Department missions. Managing assets in a sustainable manner that supports the DOE mission is a strategic objective under this goal.

The department executes its mission at more than 50 sites throughout the U.S. covering more than 2.2 million acres of land.

The DOE seal was authorized on May 15, 1978. The eagle represents the care in planning and the purposefulness of efforts required to respond to the nation's increasing demands for energy. The sun, atom, oil derrick, windmill, and dynamo serve as representative technologies whose enhanced development can meet these demands. The rope represents the cohesiveness in the development of the technologies and their link to our future capabilities. The lightning bolt represents the power of the natural forces from which energy is derived and the nation's challenge in harnessing the forces.

Introduction

Every unit of the national park system will have a foundational document to provide basic guidance for planning and management decisions—a foundation for planning and management. The core components of a foundation document include a brief description of the park as well as the park's purpose, significance, fundamental resources and values, and interpretive themes. The foundation document also includes special mandates and administrative commitments, an assessment of planning and data needs that identifies planning issues, planning products to be developed, and the associated studies and data required for park planning. Along with the core components, the assessment provides a focus for park planning activities and establishes a baseline from which planning documents are developed.

A primary benefit of developing a foundation document is the opportunity to integrate and coordinate all kinds and levels of planning from a single, shared understanding of what is most important about the park. The process of developing a foundation document begins with gathering and integrating information about the park. Next, this information is refined and focused to determine what the most important attributes of the park are. The process of preparing a foundation document aids park managers, staff, and the public in identifying and clearly stating in one document the essential information that is necessary for park management to consider when determining future planning efforts, outlining key planning issues, and protecting resources and values that are integral to park purpose and identity.

While not included in this document, a park atlas is also part of a foundation project. The atlas is a series of maps compiled from available geographic information system (GIS) data on natural and cultural resources, visitor use patterns, facilities, and other topics. It serves as a GIS-based support tool for planning and park operations. The atlas is published as a (hard copy) paper product and as geospatial data for use in a web mapping environment. The park atlas for Manhattan Project National Historical Park can be accessed online at: http://insideparkatlas.nps.gov/.

Part 1: Core Components

The core components of a foundation document include a brief description of the park, park purpose, significance statements, fundamental resources and values, and interpretive themes. These components are core because they typically do not change over time. Core components are expected to be used in future planning and management efforts.

Brief Description of the Park

Established on November 10, 2015, Manhattan Project National Historical Park is managed through a collaborative partnership by the National Park Service and the U.S. Department of Energy to preserve, interpret, and facilitate access to key historic resources associated with the Manhattan Project. The Manhattan Project was a massive, top secret national mobilization of scientists, engineers, technicians, and military personnel charged with producing a deployable atomic weapon during World War II. The project began as a multifaceted effort requiring the rapid advancement of nuclear physics and multiple engineering strategies to produce functional weapons designs and critical quantities of fissile materials, and produced weapons of unprecedented destructive capacity. The project included the Trinity Test on July 16, 1945, a few weeks before the United States dropped atomic bombs on Hiroshima and Nagasaki, Japan. Coordinated by the U.S. Army, Manhattan Project activities were located in numerous locations across the United States. The park incorporates three of the most significant locations, each of which played an essential role in the Manhattan Project: Oak Ridge, Tennessee; Los Alamos, New Mexico; and Hanford, Washington. As part of the enabling legislation, Congress identified facilities and areas eligible to be included in the park, some of which are currently included in the park, and others which may be included in the future. The Secretary of the Interior, in consultation with the Secretary of Energy, determines which of these areas to include in the park.

Oak Ridge, Tennessee

The Oak Ridge Reservation served as the administrative headquarters for the Manhattan Project. Initially known as the Clinton Engineer Works, the reservation also produced the enriched uranium used in the "Little Boy" bomb. Uranium was separated or enriched here through multiple methods in discrete plant areas isolated by the ridges and valleys common to East Tennessee, and several key structures associated with these activities are included in the park. Located within the Y-12 National Security Complex, buildings 9731 and 9204-3 housed large arrays or "racetracks" of calutrons, which separated uranium isotopes with powerful electromagnets. On the western edge of the reservation, the enormous K-25 plant site (now demolished) separated uranium isotopes using the gaseous diffusion method pioneered in Oak Ridge. Oak Ridge also demonstrated the production of plutonium in a uranium reactor at the X-10 Graphite Reactor, where the first gram quantities of human-produced plutonium were created and separated from the reactor fuel. The world's first continuously operating nuclear reactor, and designated a national historic landmark in 1966, the X-10 Graphite Reactor served as a proof of concept for the much larger reactors at the Hanford Site, including the B Reactor. Outside of the park boundary at Oak Ridge are important related resources such as the Alexander Inn (Guest House) (which is included in the park legislation), "Alphabet Houses" (not included in the legislation) that were built for scientists and engineers in Oak Ridge, and other buildings (please see the description of park related resources in the "Related Resources" section of this foundation document).

The area making up the Oak Ridge Reservation includes evidence of human settlement dating back at least 14,000 years, long prior to the creation of the Clinton Engineer Works. Various American Indian tribes settled the area. European settlement began in what is now East Tennessee when the Long Hunters arrived in the second half of the 1700s. Subsequently, waves of settlers followed, including many Scots-Irish. By 1942, the nearly 60,000 acres along the north bank of the Clinch River taken for the Manhattan Project were occupied by a few sparsely populated farming communities in three valleys only a few tens of miles west of Knoxville. These communities included Scarborough (known as Scarboro by 1942), the Wheat community, Robertsville, New Bethel, New Hope, and Elza.

The Tennessee Valley Authority completed the Norris Dam in 1936 on the Clinch River, providing electricity and flood control to the area and the project. In November 1942, approximately 3,000 people were required to be displaced in very short order to make way for construction of the Clinton Engineer Works. For a variety of reasons the location of the Clinton Engineer Works was considered at the time ideal, and when General Leslie Groves was put in charge of the Manhattan Project he selected the site as the location of the project's first plant. Interesting to note, Tennessee Governor Prentice Cooper initially declined to cede sovereignty over the land to the federal government, which gained the Clinton Engineer District a military restricted area designation rather than a military reservation.

Los Alamos, New Mexico

Los Alamos was the location of the wartime laboratory where prominent scientists, engineers, technicians, and support personnel collaborated to design and fabricate the first nuclear weapons. Military personnel, laboratory staff, and family members lived in the downtown area, which was located at the site of the former Los Alamos Ranch School. The laboratory's Main Technical Area, a fenced complex of office buildings and research facilities, was also established in the Los Alamos townsite but no longer exists. The park includes several sets of structures widely dispersed within the grounds of the present-day national laboratory south of town.

On the eastern side of the grounds, the Pajarito Site includes the Battleship Bunker (TA-18-2), which protected scientists conducting implosion diagnostic tests; the Slotin Building (TA-18-1), which hosted criticality research; and the Pond Cabin (TA-18-29), which was built in 1914 and supported Emilio Segrè's plutonium fission research. Located on the western side of the laboratory grounds, the three bunkered buildings (TA-8-1, TA-8-2, TA-8-3) and a portable guard shack (TA-8-172) are collectively known as the "Gun Site." These structures supported the development and final assembly of the "Little Boy" uranium gun-type bomb. Located just to the south is V-Site, an area within the lab that consists of two structures (TA-16-516 and TA-16-517) built for the testing and assembly of the high-explosives spheres used in plutonium implosion-type bombs. While not within the park boundary as of September 2016, the Los Alamos Scientific Laboratory National Historic Landmark District in downtown Los Alamos includes a group of houses and community buildings where project scientists and their families lived and gathered during the Manhattan Project era. (The district could be evaluated for inclusion in the park as part of the general management planning process, but any land acquisition would occur not by condemnation but by donation, purchase, or exchange from a willing seller.)

The occupation and use of New Mexico's Pajarito Plateau began as early as 10,000 BC, when foraging groups used the area for hunting and gathering. During the Coalition and Classic periods (AD 1150 to 1600), large pueblo villages were built on the plateau. The Pajarito Plateau was no longer used as a year-round residential area beginning in the mid-1500s. At this time, new pueblos were constructed along the Rio Grande. The pueblo of Tsirege, occupied during the Classic period (AD 1325 to 1600), is on lands appropriated by the U.S. government during World War II and is ancestral to the Tewa speakers of the Pueblo de San Ildefonso. In 1680, the Pueblo peoples revolted against the Spanish. At this time, several Ancestral Pueblo sites located on the isolated Pajarito Plateau were reoccupied, as they offered natural protection and defense for groups of refugees. Evidence for Navajos and Jicarilla Apaches in the northern Rio Grande begins with the Spanish Colonial Period (AD mid-1500s to early 1800s). Pueblo, Athabaskan, Anglo, and Hispanic groups continued the seasonal use of the plateau for hunting, gathering, and grazing during the late 19th and early 20th centuries.

Formal homesteading on the Pajarito Plateau began in the late 1880s. By the late 1930s, 36 individuals had patented claims under the terms of the Homestead Act or related land legislation. During the homesteading years, families used the Pajarito Plateau for seasonal farming, ranching, and resource gathering. Many of these dry-land farmers—primarily Hispanic Americans from the nearby Rio Grande Valley settlements of San Ildefonso, Pojoaque, El Rancho, and Española—did not live on their claims year-round. Notable exceptions to the seasonal occupation of the Pajarito Plateau by Hispanic homesteaders included a few permanent ranches such as the Anchor Ranch, located on land now occupied by the Los Alamos National Laboratory. The most well-known of the pre-Manhattan Project properties, the Los Alamos Ranch School, was established in 1917 by Ashley Pond, Jr. and the availability of its buildings was a substantial factor in the decision to locate the weapons laboratory here.

In late 1942, the U.S. government appropriated U.S. Forest Service land and private property on the Pajarito Plateau for its secret atom-bomb project, including several large ranches and more than 30 homesteads. For security reasons, fences and checkpoints were subsequently established that barred American Indians and former land owners from returning.

Hanford, Washington

Initially known as the Hanford Engineer Works, the Hanford Site produced plutonium on an industrial scale. Isolated from major population centers, its location offered a margin of safety given the dangerous nature of its activities, and the nearby Columbia River provided cooling water for its powerful nuclear reactors. The park includes the B Reactor, the first production-scale nuclear reactor in the world, which is a national historic landmark. Along with two identical reactors at the Hanford Site, B Reactor produced the plutonium used in the Trinity Test and the "Fat Man" implosion-type bomb. The 221-T Building (T Plant) is eligible for inclusion in the park, but is excluded at present due to ongoing DOE mission requirements. It was the first structure built at Hanford for the chemical separation of plutonium, and could be added to the park once the department's ongoing mission requirements have been completed.

The park also includes several sites from the communities of Hanford and White Bluffs that existed on the grounds before their residents were displaced by the Manhattan Project in 1943. These structures include the remnants of Hanford High School with a small portion of the former Hanford Construction Camp Historic District, the river-cobble structure of Bruggemann's Agricultural Complex Warehouse, the White Bluffs Bank, and the Hanford Irrigation District "Allard" Pump House. In 2000, Hanford Reach National Monument was created by presidential proclamation and is managed by the U.S. Fish and Wildlife Service. This national monument is immediately adjacent to that of the Manhattan Project National Historical Park at Hanford, and a small portion of the two boundaries overlap in the vicinity of the Hanford High School and Hanford Construction Camp Historic District.

Archeological evidence demonstrates the presence of American Indian tribes in the area for more than 10,000 years. The near-shore areas of the river contain village sites, fishing and fish processing sites, hunting areas, plant gathering sites, and religious sites, while upland areas were used for hunting, plant gathering, religious practices, and overland transportation. The first European American trappers and traders began arriving in the region around 1800. Lewis and Clark arrived in 1805 to establish the United States' territorial claim to the region, and were followed by missionaries, military units, and settlers passing through on river passageways. The Treaties of 1855 relocated most area tribes to permanent reservations elsewhere but reserved for the tribes certain rights of use. The Wanapum people did not sign a treaty. They lived on the site until its federal acquisition.

In the 1860s merchants set up stores, a freight depot, and a ferry at White Bluffs. Chinese miners began to work the gravel bars for gold, cattle ranches were established in the 1880s, and farmers, the railroads, and extensive government-sponsored irrigation followed soon after. Several small, thriving towns, including Hanford, White Bluffs, and Richland grew up along the river banks in the early 20th century. A spur line of the transcontinental railroad was completed in 1913, and local businesses sprang up, along with churches and schools, grange halls, and a cemetery.

In the early months of 1943 about 1,500 people in the three towns had their property condemned for a top secret war project. Property owners were compensated, but many felt the appraised value of their land, which reflected expansive infrastructure and improvements, was less than fair. At the same time, the government set up fences and checkpoints to keep out anyone not working on the top-secret project. Former land owners and tribes were barred from returning.

Park Management

Manhattan Project National Historical Park is administered by the Department of Energy and National Park Service under a memorandum of agreement that specifies the roles and responsibilities of both agencies. The National Park Service will provide administration, interpretation, education, and technical assistance in support of resource preservation efforts. The Department of Energy will continue to be responsible for management, operations, maintenance, access, and historic preservation activities of the historic Manhattan Project sites, as all current sites included in the park are currently under its custody and control. The two agencies will collaborate in the identification and development of partnership arrangements and other strategies to tell the complete story of the Manhattan Project and its legacy.

Visitor Access

Due to ongoing national security requirements and cleanup activities, some sites included in the park are not currently accessible, specifically, buildings 9731 and 9204-3 at Oak Ridge and all sites at Los Alamos. All other park sites are accessible only via organized bus tours, including the X-10 Graphite Reactor, the K-25 plant site, B Reactor, and Hanford pre-Manhattan Project historic structures. As part of their ongoing collaboration, the National Park Service and the Department of Energy will endeavor to develop innovative and virtual approaches to connect park visitors with key resources, as they work to expand safe physical access to these sites.

Brief History of the Manhattan Project

Introduction

The Manhattan Project is the story of some of the most renowned scientists of the 20th century combining with industry, the military, and tens of thousands of Americans working at locations across the country to translate scientific discoveries and theories into an entirely new kind of weapon. When the existence of this nationwide, secret project was revealed to the American people following the atomic bombings of Hiroshima and Nagasaki, most were astounded to learn that such a far-flung, government-run, top-secret operation existed, with physical properties, payroll, and a labor force comparable to the automotive industry. At its peak, the project employed 130,000 workers and, by the end of the war, had spent $2.2 billion.

Neutrons, Fission, and Chain Reactions

The road to the atomic bomb began with revolutionary discoveries in physics. In the early 20th century, physicists conceived of the atom as a miniature solar system, with extremely light negatively charged subatomic particles, called electrons, in orbit around a much heavier positively charged nucleus.

In 1919, Ernest Rutherford, working in the Cavendish Laboratory at Cambridge University, detected a high-energy particle with a positive charge being ejected from the nucleus of an atom. He named this subatomic particle the proton. The number of protons in the nucleus of the atom defines the element. Hydrogen, with one proton and an atomic number of one, came first on the periodic table and uranium, with ninety-two protons, last. However, many elements existed at different weights even while displaying identical chemical properties. This discovery would have important implications for nuclear physics, as these isotopes of the same element could have markedly different nuclear properties.

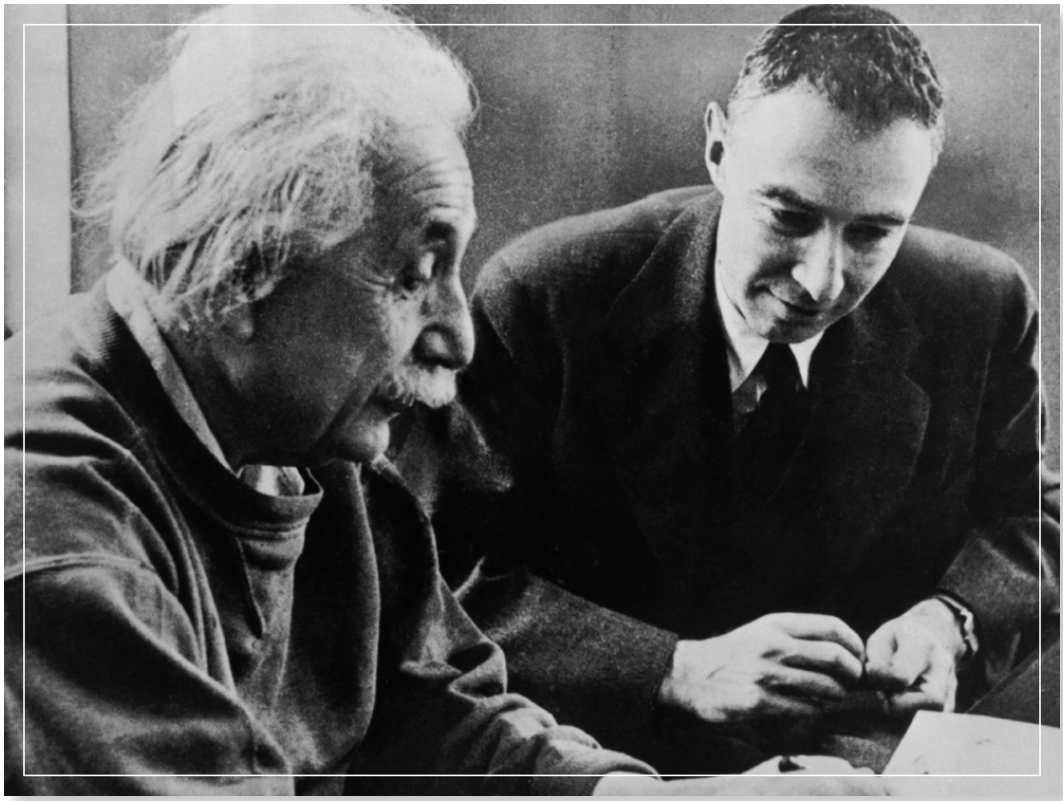
A third subatomic particle, first identified in 1932 by James Chadwick at Cambridge University, explained this difference in mass. Named the neutron because it has no charge, the number of neutrons could vary among nuclei of atoms of the same element. Atoms of the same element but with varying numbers of neutrons are called isotopes. For instance, all uranium atoms have 92 protons in their nuclei and 92 electrons in orbit. Uranium–238, which accounts for more than 99% of natural uranium, has 146 neutrons in its nucleus. Uranium–235 has 143 neutrons in its nucleus, and this isotope makes up less than 1% of naturally occurring uranium.

An unexpected discovery by researchers in Nazi Germany in late 1938 radically changed the direction of both theoretical and practical nuclear research. The radiochemists Otto Hahn and Fritz Strassmann found that when they bombarded uranium with neutrons emitted from a mixed radium-beryllium source, the products of the experiment weighed less than that of the original uranium atom. Albert Einstein's formula, E=mc2, which states that mass and energy are equivalent, suggested the loss of mass resulting from this process must have been converted into energy. Hahn communicated these findings to Lise Meitner, a former colleague who fled to Sweden to escape the Nazis. Meitner and her nephew, Otto Frisch, calculated that the nucleus of the uranium atom had been split, creating two lighter elements. They concluded that so much energy had been released that a previously undiscovered process must be at work. Borrowing the term for cell division in biology, Frisch named the process fission.

Fission of the uranium atom had another important characteristic besides the immediate release of energy. This was the emission of neutrons. When fission occurred in uranium, splitting the atom, several neutrons were also emitted. Physicists speculated that these secondary neutrons might collide with other uranium atoms and cause additional fission, creating a self-sustaining "chain reaction" if the mass of uranium was of appropriate size, shape, and density, which would emit a continuously increasing amount of energy. Such a reaction could generate a large amount of energy, and if uncontrolled could create an explosion of huge force.

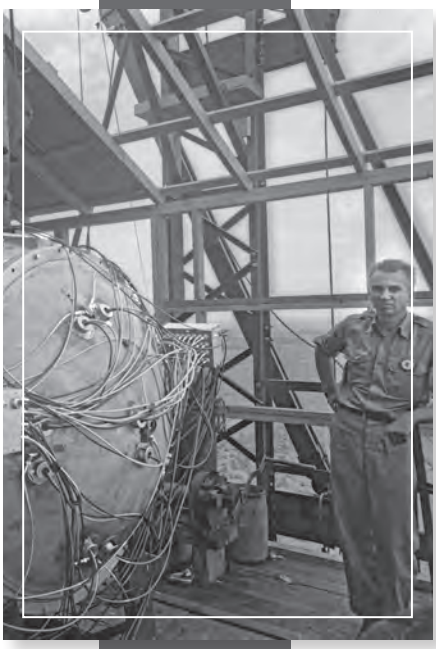
The Atomic Bomb and the Manhattan Project

The possible military uses for uranium fission were apparent to the world's leading physicists. In August 1939, Albert Einstein and physicist Leo Szilard wrote a letter to President Franklin D. Roosevelt to warn him that recent uranium fission research suggesting a chain reaction in a sufficiently large mass of uranium could conceivably lead to the construction of "extremely powerful bombs." A single bomb, Einstein warned, could potentially destroy an entire seaport. Einstein called for government support of uranium research, noting ominously that German physicists were engaged in uranium research and that Germany had stopped the export of uranium.



President Roosevelt and his advisers reacted cautiously to the Einstein letter, initially providing only limited federal funding for this research. No one as yet knew whether an atomic weapon was even possible, or whether a bomb could be produced in time to affect the outcome of the war. Researchers discovered early on that uranium–238 could not sustain a chain reaction required for a bomb, but theorized that the much less abundant uranium–235 might be able to do so. Natural uranium consists of less than 1% uranium–235. Separating uranium–235 from uranium–238 also proved to be extremely difficult and expensive. The two isotopes are chemically similar and therefore separation by chemical means was infeasible. With their masses differing by less than 1%, other means of separation were problematic at best. No proven efficient method existed for physically separating the two isotopes in any quantity.

At the same time, a second possible path to a bomb gradually emerged. Researchers studying uranium fission products at the University of California, Berkeley, discovered a new, "transuranium" element by subjecting uranium–238 to deuteron bombardment (deuterons are stable particles consisting of a proton and neutron). During this process, transuranium nuclei captured neutrons and through a process known as beta decay yielded a new chemical element with an atomic number of 93. This element was named neptunium, which itself, over time, decayed to yet another transuranium element. The chemist Glenn T. Seaborg identified this as element 94 in February 1941, which he later named plutonium. He subsequently proved that the plutonium–239 isotope was 1.7 times as likely as uranium–235 to fission. His discovery suggested the possibility of producing large amounts of the fissionable plutonium in a uranium pile, or reactor, as it later came to be called, using natural, unseparated uranium and then chemically separating the plutonium. Seaborg and others believed this process might be less expensive and simpler than building uranium isotope separation plants.



In early 1942, the United States decided to proceed with a full-scale program to build an atomic weapon. This project was assigned to the U.S. Army Corps of Engineers. The Corps set up the Manhattan Engineer District—so called because the initial headquarters was in Manhattan, New York—commanded by Brigadier General Leslie R. Groves. Secrecy and concern of a major accident dictated that the production facilities be located in rural areas. Due to ongoing uncertainties as to which processes for producing fissionable material would work, both of the paths explored by scientists—isotope separation of uranium-235 and production of plutonium in a uranium pile—were given approval. By the end of the war, Groves and his staff expended approximately $2.2 billion on production facilities, towns, and research laboratories scattered across the nation.

Groves located the production facilities for uranium isotope separation at the Clinton Engineer Works, a 92–square–mile parcel carved out of the Tennessee hills just west of Knoxville. (The name "Oak Ridge" was not widely used for the reservation until the summer of 1943 and was chosen for its rural location.) Groves placed three separation methods into production: gaseous diffusion, electromagnetic separation, and liquid thermal diffusion. These processes each separated uranium-235 and uranium-238, and ultimately provided highly enriched in uranium-235 that would be used in an atomic weapon.

Meanwhile, much of the research work on producing plutonium, including design of the piles, took place at the Metallurgical Laboratory (Met Lab) at the University of Chicago. On December 2, 1942, on a squash court on campus, researchers headed by the Italian-émigré physicist Enrico Fermi achieved the world's first self–sustaining chain reaction in a graphite and uranium pile. Groves authorized construction of a pilot reactor and plutonium separation facility at the X-10 area of the above-described Clinton Engineer Works. Due to space and power generating limitations, Groves then chose a more permanent location near Hanford, Washington, on the Columbia River, because of its isolation from large population centers, long construction season, and access to cooling water and hydroelectric power. Three water-cooled reactors, designated by the letters B, D, and F, and corresponding chemical separation facilities were built at the Hanford Engineer Works.

Bomb Design

Design and fabrication of the first atomic weapons became the responsibility of the newly established Los Alamos Laboratory, located at a virtually inaccessible location high on a mesa in northern New Mexico. Headed by J. Robert Oppenheimer, the laboratory assembled a remarkable array of scientists from universities across the United States. Designing the bomb was not an easy task. Precise calculations and months of experimentation were required to obtain the optimum specifications of size and shape. For the bomb to work, sufficient fissionable material needed to be brought together in a critical mass, which would initiate a chain reaction that released the greatest possible amount of energy before being blown apart and dispersed in the explosion. The most direct approach became known as the gun method, which used conventional artillery technology to fire one subcritical mass at high speed into the other, forming a supercritical mass. The gun method was used for the uranium–235 bomb.

Los Alamos scientists discovered that the gun method would not work for plutonium. Impurities in the plutonium would set off a predetonation after a supercritical mass had been reached but before the optimum configuration for a chain reaction had been attained. As an alternative, scientists turned to the relatively uncertain implosion method. With implosion, conventional explosives would create symmetrical shockwaves directed inward to compress a subcritical mass of plutonium, resulting in a supercritical mass and causing a chain reaction.

Two bomb models were developed by mid-1944, and were drop-tested (without fissionable materials) from a specially modified B–29 bomber. The plutonium implosion prototype was named "Fat Man" and the uranium gun prototype was named "Little Boy." Field tests with the uranium prototype eased doubts about the design, so that a full-scale test prior to combat use was deemed unnecessary. The plutonium device was more problematic. It would have to be tested before use.

The Trinity Test

The test shot was dubbed "Trinity" by Oppenheimer. Test planners chose a flat, desert scrub region in the northwest corner of the isolated Alamogordo Bombing Range in southern New Mexico. The site was several hundred miles from Los Alamos, and the nearest offsite habitation was 20 miles away. Scientists, workers, and other observers would be withdrawn almost 6 miles and sheltered behind barricades during the test to protect them from dangers from blast, fragments, and heat.

Scientists were well aware that the blast would create potential radiation hazards. Plutonium fission products from the device, as well as the now-radioactive ground debris, would be swept into a growing fireball and lifted high into the air, posing a serious hazard from radioactive fallout. Groves feared legal culpability if the fallout was severe, so Army intelligence agents located and mapped everyone within a 40-mile radius of the test site. Test planners set up an elaborate offsite monitoring system and prepared evacuation plans if exposure levels became too high.

On July 16, 1945, the Trinity device, positioned on top of a 100-foot steel tower, containing just over 13 pounds of plutonium, detonated over the New Mexico desert with an explosive yield of approximately 21 kilotons of TNT. The predawn blast, which temporarily blinded the nearest observers 10,000 yards away, created an orange and yellow fireball about 2,000 feet in diameter. The initial fireball flattened into a dense white mushroom cloud 25,000 feet in height. The blast left a shallow crater 10 feet deep and some 400 yards across. Due to the thermal updraft that drew the cloud so high, little fallout was dropped on the test site beyond 1,200 yards of ground zero, but the mushroom cloud dropped a large amount of radioactive fallout as it dispersed toward the north-northeast.

Hiroshima and Nagasaki, Japan

The Manhattan Project owed its existence to fear that Nazi Germany was developing an atomic weapon, but the surrender of Germany in spring 1945 turned the focus of the program to perfecting a device that could be used against Japan in the ongoing war in the Pacific. American strategists thought that an invasion of the Japanese Home Islands might be required to end the conflict, and planning and preparation for the invasion, codenamed Operation Downfall, began more than a year before the Trinity test. Estimates of casualties resulting from an invasion and defeat of Japan varied widely, with the upper range numbering in the millions for the United States, its allies, and the Japanese military and civilians.

President Harry S Truman and his advisors were well aware that successful development and deployment of an atomic weapon could alter strategic calculations for ending the war. Plans were made for launching an attack with these weapons from recently captured Tinian Island (now part of the Commonwealth of the Northern Mariana Islands) in the Pacific, within striking distance of Japan by B-29 bombers. Truman formed an Interim Committee of top officials charged with recommending the proper use of atomic weapons. The group considered whether a demonstration of the bomb might possibly convince the Japanese to surrender. This was rejected, however, out of fear that the bomb could malfunction, the Japanese might put U.S. prisoners of war in the area, or they might manage to shoot down the plane. In addition, the shock value of the new weapon could be lost. These reasons and others convinced the group that the bomb should be dropped without warning on a "dual target"—a war plant surrounded by workers' homes.

On August 6, 1945, just three weeks after the Trinity test, the United States dropped the "Little Boy" uranium bomb on Hiroshima, Japan. A B-29 bomber named *Enola Gay* lifted off in the predawn hours from Tinian Island and released the first atomic weapon in history over Hiroshima. "Little Boy" detonated with a yield of 13 kilotons at nearly 2,000 feet above the city, to maximize its destructive effects.

The effects of the explosion were both devastating and indiscriminate, a lethal combination of blast overpressure, extreme heat, and radiation effects that killed between 90,000 and 166,000 people. Half of the fatalities came from the initial blast and firestorm, and those who did not perish immediately in the blast suffered for days or weeks before finally succumbing to gruesome burn injuries or acute radiation sickness. More than one-third of Hiroshima's people died, and two-thirds of its buildings were completely destroyed.

Three days later, on August 9, 1945, another B-29 bomber named *Bock's Car* lifted off from Tinian Island carrying the "Fat Man" plutonium implosion-type bomb. Unable to attack its primary target of Kokura due to poor visibility, the crew released "Fat Man" over its secondary target, the city of Nagasaki. "Fat Man" detonated 1,700 feet above the city with a yield of 22 kilotons. The explosion was contained by the steep hills that surrounded ground zero; still, between 60,000 and 80,000 people were killed by the combined effects of the bomb. Those who survived the bombings faced the loss of family members, destroyed livelihoods, and a lifetime of significantly increased risk of leukemia and other cancers due to radiation exposure.

The destructive effects of the two atomic bombs, combined with the Soviet invasion of Japanese-occupied Manchuria on August 9, led Japan to surrender on August 14. The United States and its allies began their occupation of Japan on August 28, the first foreign occupation in the history of the Japanese nation.

From the Second World War to the Cold War

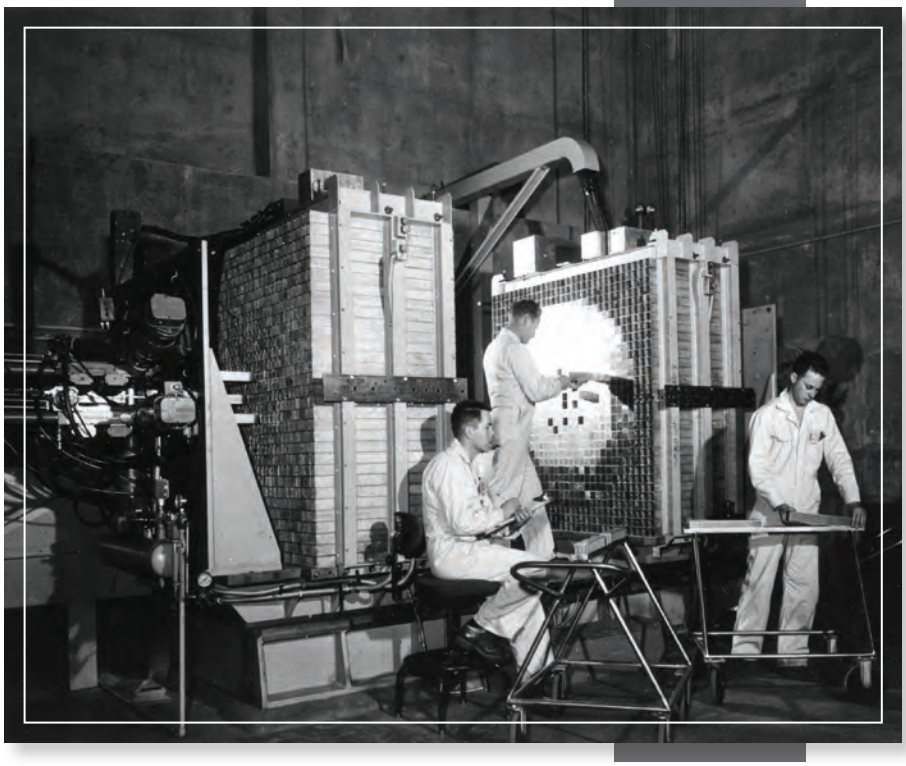
The end of World War II brought with it a whole new set of issues and problems, not least of which revolved around the dilemma of what to do with the nuclear genie now that it had been let out of the bottle. The discovery of nuclear energy, as President Truman told Congress in October 1945, "began a new era in the history of civilization." While this new era held the promise of perhaps limitless energy for peaceful purposes, the prospect of the proliferation of atomic weapons was alarming. Controls over nuclear energy were clearly desirable. In the immediate aftermath of the war, the United States sought with mixed success to implement regimes for controlling and regulating the atom at both the domestic and international levels.

On the domestic front, Truman called for the establishment of an Atomic Energy Commission to take over the Manhattan Project's material resources and "to control all sources of atomic energy and all activities connected with its development." Congress passed the Atomic Energy Act of 1946, creating the new agency, and Truman signed it into law on August 1. The act transferred authority from the Army to the new Atomic Energy Commission and continued the government monopoly in the field of atomic research and development.

Efforts to implement international control were less fruitful. The United States proposed the establishment of an international atomic development authority that would control all atomic research and development activities that might pose a danger to world security and possess the power to license and inspect all other such projects. This effort was rejected by the Soviet Union, then in the midst of its own atomic weapons development effort.

This impasse was part of the onset of a new global struggle between the United States and the Soviet Union. The breathing space between the Second World War and the Cold War was very brief. Already in March 1946, Winston Churchill warned of an "iron curtain" that had descended across Eastern Europe as the Soviet Union sought to maintain its influence over territories it occupied. A year later, President Truman asked for funds for overseas economic and military assistance for nations threatened by Communism, known as the Truman Doctrine. The United States refused to surrender its atomic deterrent without adequate controls, believing that Soviet troops posed a threat to Western Europe and recognizing that American conventional forces had rapidly demobilized. In this atmosphere of mutual suspicion, the Cold War set in.

Atomic weapons, as a result, rapidly became the cornerstone of Cold War military strategy. Oak Ridge and Hanford continued to produce nuclear materials. Los Alamos continued research, design, and construction of useable weapons. To learn more about weapons effects, the military held a test series called Operation Crossroads, during the summer of 1946 at Bikini atoll in the Marshall Islands. Many more tests would follow. In 1949, the Soviet Union successfully tested its first atomic device. In the 1950s, the United States and Soviet Union developed thermonuclear weapons, which increased the potential destructive power of nuclear weapons one thousand fold and more. The number of weapons on both sides increased exponentially.



Legacy

The legacy of the Manhattan Project is both enormous and complex. The development and use of atomic weapons helped bring an end to World War II, the largest and most destructive war in human history. In doing so, the bombings of Hiroshima and Nagasaki took an enormous physical and economic toll on the people of those cities. Manhattan Project activities also left behind impacts in the United States, including a significant number of people displaced from their homes, lands and waters; traditional use areas used for hunting, fishing, and gathering; and sacred sites; to make way for the various Manhattan Project sites. Nuclear processing and testing activities had impacts on human health and the surrounding environment.

The Manhattan Project and use of atomic weapons set the stage for the Cold War. The next half century would feature the United States and Soviet Union vying for global supremacy, with vast arsenals of nuclear weapons possessed by both sides poised to end civilization in an instant. Proliferation of nuclear weapons in more recent years has made the global security environment more complex, and arguably much more dangerous.

The Manhattan Project was also responsible for a number of monumental advancements in science, engineering, and technology, becoming the organizational model behind the remarkable achievements of American "big science" during the second half of the 20th century. Manhattan Project research significantly advanced the understanding of nuclear physics and led to a number of nonmilitary applications of nuclear science, including nuclear power and improvements in nuclear medicine.

Park Purpose

The purpose statement identifies the specific reason(s) for establishment of a particular park. The purpose statement for Manhattan Project National Historical Park was drafted through a careful analysis of its enabling legislation and the legislative history that influenced its development. Enabled by legislation signed into law by Congress on December 19, 2014, the park was established by the Secretary of Energy and the Secretary of the Interior on November 10, 2015 (see appendix A for enabling legislation). The purpose statement lays the foundation for understanding what is most important about the park.

Managed in partnership by the Department of Energy and the National Park Service, Manhattan Project National Historical Park preserves and interprets the nationally significant historic sites, stories, and legacies associated with the top-secret race to develop an atomic weapon during World War II, and provides access to these sites consistent with the mission of the Department of Energy.

Park Significance

Significance statements express why a park's resources and values are important enough to merit designation as a unit of the national park system. These statements are linked to the purpose of Manhattan Project National Historical Park, and are supported by data, research, and consensus. Statements of significance describe the distinctive nature of the park and why an area is important within a global, national, regional, and systemwide context. They focus on the most important resources and values that will assist in park planning and management.

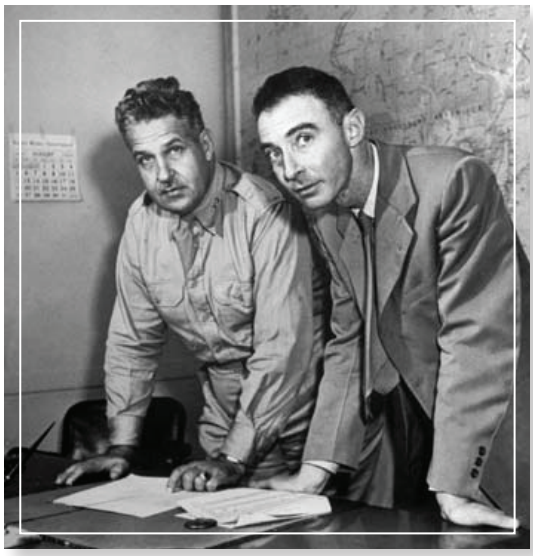
The following significance statements have been identified for Manhattan Project National Historical Park. (Please note that the sequence of the statements does not reflect the level of significance.)

1. The Manhattan Project was an unprecedented, top-secret World War II government program in which the United States rushed to develop and deploy atomic weapons before Nazi Germany. The use of these weapons by the United States against Japan in August 1945 ultimately became one of the most important historical events of the 20th century.

2. During the Manhattan Project, the U.S. Army directly or indirectly employed nearly 600,000 workers and some of the world's leading scientists at more than 30 sites nationwide, including three primary centers of operations established at Los Alamos, New Mexico; Oak Ridge, Tennessee; and Hanford, Washington. This effort channeled revolutionary scientific and engineering innovations into an entirely new kind of weapon, ushering in the nuclear age.

3. Initially identified as the primary location for the Manhattan Project, the Oak Ridge Reservation eventually produced enriched uranium and housed the management of the nationwide project. Three revolutionary enrichment processes were developed and implemented simultaneously at the reservation, where thousands worked in cavernous industrial facilities to produce incremental amounts of weapons-grade uranium. Oak Ridge provided the fissile material for the "Little Boy" atomic weapon dropped on Hiroshima, Japan.

4. Los Alamos became the location where world-renowned scientists and engineers led by J. Robert Oppenheimer gathered in laboratories to design and develop the world's first atomic weapons. Merely 26 months after the start of the project, the Los Alamos team conducted the first successful nuclear test at the Trinity Site in southern New Mexico on July 16, 1945, and assembled the two atomic weapons the United States dropped on Japan in August 1945.



5. At a massive industrial complex at Hanford, Washington, the United States engineered and built the world's first full-scale nuclear reactor, uranium fuel fabrication facilities, and plutonium separation plant in only 18 months. Hanford's facilities produced the plutonium used in the first successful test of a nuclear device at Trinity Site, and the "Fat Man" plutonium bomb dropped on Nagasaki, Japan, on August 9, 1945.

6. The wartime urgency surrounding the Manhattan Project led to the displacement of generations-old settlements and tribal communities as many people were forced to sacrifice homes, lands and waters, sacred sites, and the access to sacred sites to make way for covert military industrial sites and communities.

7. The two atomic weapons used by the United States on the Japanese cities of Hiroshima and Nagasaki unleashed an enormous and unprecedented amount of death and devastation for an individual weapon. An estimated 90,000–166,000 people were killed or died within months after the "Little Boy" uranium bomb was dropped on Hiroshima on August 6, 1945. An estimated 60,000–80,000 people were killed or died within months after the United States bombed Nagasaki using the "Fat Man" plutonium bomb three days later.

8. The colossal destructive power of nuclear weapons became a fundamental dynamic of the ensuing Cold War between the United States and the Soviet Union, a concept commonly referred to as deterrence through Mutual Assured Destruction, and spurred other nations to develop nuclear weapons of their own.

9. The development and production of nuclear weapons in the United States and around the world has had profound consequences for human health and the environment, from radiation exposure from the use and testing of nuclear weapons to the chemical and radiological waste that remains from decades of nuclear weapons development.

10. Scientific and technological advances made during the Manhattan Project in the pursuit of nuclear weapons contributed to progress in many areas, such as environmental and materials science, biology, nuclear medicine, nuclear energy, the nuclear Navy, supercomputing, precision machining, astronomy, and the Department of Energy's National Laboratory System.

Fundamental Resources and Values

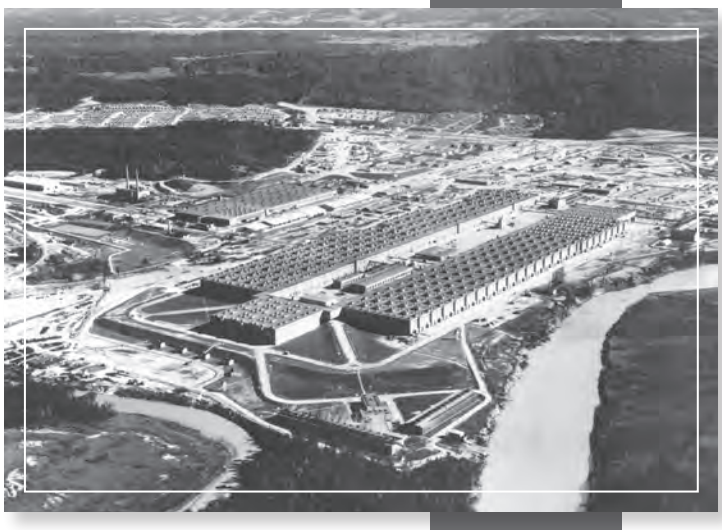
Fundamental resources and values (FRVs) are those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management processes because they are essential to achieving the purpose of the park and maintaining its significance. Fundamental resources and values are closely related to a park's legislative purpose and are more specific than significance statements.

Fundamental resources and values help focus planning and management efforts on what is truly significant about the park. One of the most important responsibilities of NPS managers is to ensure the conservation and public enjoyment of those qualities that are essential (fundamental) to achieving the purpose of the park and maintaining its significance. If fundamental resources and values are allowed to deteriorate, the park purpose and/or significance could be jeopardized.

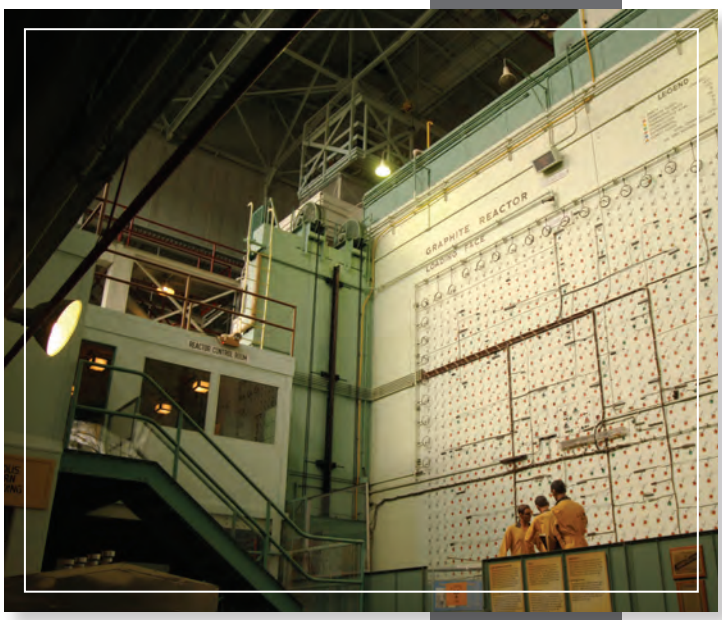
There are other resources that are currently not included within the boundary of Manhattan Project National Historical Park (and therefore cannot be considered fundamental resources), but are nonetheless important to consider as part of the broader context and setting of the park. These related resources, found later in this document, represent a thematic connection that could enhance the experience of visitors or the interpretation of the story of the Manhattan Project. Some specific sites such as buildings in the Los Alamos Scientific Laboratory National Historic Landmark District and sites associated with the Manhattan Project in Oak Ridge could be evaluated for incorporation into the park as part of the general management planning process. Any inclusion in the park in the future would require consent of building or property owners.

The following fundamental resources and values have been identified for Manhattan Project National Historical Park:

Oak Ridge, Tennessee



- **K-25 Building Site.** The K-25 building pioneered industrial-scale uranium enrichment using the gaseous diffusion method. Built in March 1945, the mammoth 44-acre building produced enriched uranium feed material for the Y-12 electromagnetic separators for further enrichment, including some of the uranium used in the "Little Boy" weapon that was dropped on Hiroshima. The U-shaped building, which measured a half-mile long and 1,000 feet wide, continued to produce highly enriched uranium used in thermonuclear weapons during the Cold War until production ceased in 1964. The K-25 building has since been demolished, and its footprint will remain undeveloped.



- **X-10 Graphite Reactor.** The world's first continuously operating nuclear reactor, the X-10 Graphite Reactor produced the first significant amounts of plutonium ever made and served as a proof of concept for the B Reactor at Hanford. The engineered reactor is a "pile" of graphite blocks measuring 24 feet per side, penetrated by horizontal air-cooled channels that contained the uranium fuel slugs. The graphite blocks served as a neutron moderator, which helped to sustain a nuclear chain reaction. Designed and built in less than 10 months, it went into operation on November 4, 1943. After the war, X-10 was used for a wide variety of scientific purposes, including the production of radioisotopes, until being shut down in 1963. Today, the reactor face and control room are accessible to the public. The reactor building is a national historic landmark.

- **Y-12 Plant Buildings 9731 and 9204-3.** Buildings 9731 and 9204-3 at the Y-12 National Security Complex pioneered the electromagnetic separation method for uranium enrichment. Building 9731 was the first building constructed at the Y-12 site, and contains the world's only three alpha calutron magnets as well as three beta calutron magnets. These calutrons were used as test beds for the rest of the Y-12 complex. Building 9204-3 contains the last two remaining Beta racetracks in America. One of these racetracks was in use as recently as 1998 for the separation of stable isotopes, and remains on standby for potential future use.

Los Alamos, New Mexico

- **Pond Cabin (TA-18-29).** The Pond Cabin (TA-18-29), a log structure, was built in 1914 by settler Ashley Pond and supported Emilio Segrè's plutonium fission research. The Pond Cabin is at the Pajarito site, in Pajarito Canyon, on the Los Alamos National Laboratory grounds.
- **Battleship Bunker (TA-18-2).** The Battleship Control Building was constructed to support implosion diagnostic tests for the plutonium implosion-type bomb design. A cast-in-place concrete bunker, it is known as the "battleship building" because the west end of the building is shaped like a bow of a ship, shielded with a steel plate. This Battleship Control Building is at the Pajarito site, in Pajarito Canyon, on the Los Alamos National Laboratory grounds.
- **Slotin Building (TA-18-1).** The Slotin Building was constructed at the end of the Manhattan Project. It was the location of the criticality accident that led to the death of scientist Louis Slotin. The accident significantly influenced future criticality safety programs. The building remained in use during the Cold War. The Slotin Building is at the Pajarito site, in Pajarito Canyon, on the Los Alamos National Laboratory grounds.
- **Gun Site Buildings.** The Gun Site area of Los Alamos was used during World War II to test the gun-type weapon designs known as "Thin Man" and "Little Boy." Gun Site buildings consist of three concrete, earth-covered bunkers (Laboratory and Shop [TA-8-1], Shop and Storage [TA-8-2], Diesel Generator Building [TA-8-3]) and a portable guard shack (TA-8-172). Components of "Little Boy" were also assembled at the Gun Site before being shipped to the Pacific.
- **V-Site.** The V-Site buildings include the Assembly Building (High Bay) (TA-16-516) and Workshop (TA-16-517), and were constructed to support the assembly of the plutonium implosion-type bomb. They were also used to assemble the high-explosives sphere for the Trinity device, known as the Gadget. V-Site buildings in use during the war also included several storage and shop buildings that were destroyed by the Cerro Grande Fire in May of 2000. The V-Site was located well away from other facilities at Los Alamos, for safety as well as security reasons.

Hanford, Washington

- **B Reactor.** The B Reactor is the first full-scale production nuclear reactor in the world. Together with the D and F Reactors, the B Reactor produced the plutonium used in the Trinity Test and the "Fat Man" bomb dropped on Nagasaki, Japan. The reactor's core consists of a "pile" of graphite blocks which held uranium fuel slugs and served as a neutron moderator, sustaining a nuclear chain reaction. B Reactor is a national historic landmark and is accessible via guided tours. Also located on the B Reactor grounds are two locomotives and two cask cars, part of the rail system that hauled irradiated fuel rods from Hanford's reactors to the storage and chemical separation buildings for processing.
- **Hanford High School.** Hanford High School was a focal point of the pre-Manhattan Project community of Hanford, Washington. The school was vacated when the town of Hanford was condemned for the Manhattan Project, and was used for a short time as office space. Only the outer shell of the original structure remains intact. The current property within the park also includes a small portion of the Hanford Construction Camp, where more than 50,000 workers lived in tents and barracks during the construction of the Hanford Engineer Works.
- **White Bluffs Bank.** The White Bluffs Bank building is the only remaining structure of the pre-Manhattan Project community of White Bluffs, Washington. When first constructed, it was claimed to be robbery-proof, though it was robbed twice in its operating history due to an easily breached wooden roof. The bank building, a small 25-foot by 30-foot single-story concrete block structure, is currently undergoing a comprehensive rehabilitation to replicate the period appearance and facilitate public visitation.
- **Bruggemann's Agricultural Complex Warehouse.** Located within two miles of the B Reactor, the warehouse building at Bruggemann's Agricultural Complex is the only remaining structure on the approximately 530-acre farm property that was confiscated by the federal government. The structure is part of one of the few intact independent farming operations representing the pre-Manhattan Project era in the Northwest. The warehouse itself is a unique structure constructed of Columbia River cobblestone placed into a concrete matrix. While the facility itself is behind a fence awaiting stabilization and improvements, visitors can walk around it on existing roads.
- **Hanford Irrigation District Pump House.** The Hanford Irrigation District Pump House, also known as the "Allard" Pump House, was built by the Hanford Irrigation and Power Company to raise water more than 50 feet to a 36-mile irrigation network for farms in the Priest Rapids Valley. When completed, area newspapers called the project "the largest pumping plant in the world." The project enabled large scale farming and orchards in the area, which in turn supported individual farms and community business in the towns of Hanford and White Bluffs. The building shell and roof of the pump house are intact.

Related Resources

The following related resources are currently not included in the boundary of Manhattan Project National Historical Park, but are nonetheless important to consider as part of the broader context and setting of the park. These related resources represent a thematic connection that would enhance the experience of visitors or the interpretation of the story of the Manhattan Project. They have close associations with park fundamental resources and the purpose of the park and represent a connection with the park that often reflects an area of mutual benefit or interest, and collaboration, between the park and its stakeholders.

Some of the following related resources are buildings and structures managed by the Department of Energy that have been identified in the park's enabling legislation as eligible for inclusion in the park, but are currently not included in the park boundary. Other resources identified in this section are outside of the park boundary and are not owned or managed by the Department of Energy, but have connections to the broader history of the Manhattan Project at one of the park's three locations. The following does not constitute an exhaustive list of related resources and others may be identified in the future. Moreover, identification of these resources in this document does not suggest intent to acquire them; rather they are listed here to illustrate the broader landscape and historical context in which the park locations exist.

Oak Ridge, Tennessee

The following related resources at Oak Ridge were identified as park-eligible in the park legislation but are not within the current park boundary.

- **Alexander Inn (Guest House).** The Manhattan Project Guest House served as the only hotel for the Clinton Engineer Works. Visiting scientists, dignitaries, and many workers stayed here upon arrival in Oak Ridge. It was later known as the Alexander Inn, and in 2015 was restored as a senior living center known as the Alexander Guest House. Saved from ruin by a Department of Energy grant, the front façade of the Alexander Guest House has been restored to its 1944 appearance and is protected by preservation easements. The Alexander Inn received the Advisory Council on Historic Preservation's 2016 Chairman's Award for excellence in historic preservation.

Other related resources not specifically called out in the enabling legislation that are also connected to the history and significance of the Oak Ridge Reservation include buildings that pre-date the Manhattan Project as well as buildings that were constructed during the Manhattan Project. Some such resources include the Freels Bend Cabin, several pre-Manhattan Project churches at the Oak Ridge National Laboratory and East Tennessee Technology Park, Chapel on the Hill, Jackson Square, the "Alphabet Homes" built for scientists and engineers in Oak Ridge, the Children's Museum of Oak Ridge, the Weather Bureau building (formerly the Manhattan Project Medical Facility), the Midtown Community Center, the Red Cross building, and the American Museum of Science and Energy, and other resources associated with the Manhattan Project that are identified in two previous national register nominations: Oak Ridge Historic District (1991) and Oak Ridge Turnpike Checking Station (1992).

Los Alamos, New Mexico

The following related resources at Los Alamos were identified as park-eligible in the park legislation but are not within the current park boundary.

- **Quonset Hut (TA-22-1).** Manhattan Project scientists and engineers perfected the final "trap-door" design of the "Fat Man" weapon in the Los Alamos Quonset hut (TA-22-1). The high-explosives sphere and associated components of "Fat Man" were assembled in the Quonset hut and then transported to Tinian Island. After the war, the building was used as a detonator research facility for almost 40 years.
- **Concrete Bowl (TA-6-37).** The Concrete Bowl (TA-6-37) is an outdoor experimental area that was used to conduct plutonium recovery research. Scientists devised several methods to contain the Trinity device's plutonium in the event of failure. The 200-foot diameter concrete bowl was built for water recovery experiments where small-scale, high-explosives tests were detonated in a redwood water tank on an approximately 50-foot-high tower located in the center of the bowl, which would effectively contain the debris from the test shots.
- **Q-Site (TA-14-6).** TA-14-6 is a wood-frame building that was constructed as a darkroom and shop to support small-scale implosion tests. At Q-Site, scientists studied cylinder implosions using the flash photography method, a high-speed photographic technique that relied on the rotating prism camera.
- **K-Site (TA-11-1, TA-11-2, and TA-11-3).** K-Site supported experiments that were conducted using the betatron diagnostic method. This method involved the detonation of a test implosion between two buildings, one housing a betatron machine that emitted X-rays at the instant of the explosion and the other housing a cloud chamber to record the data. TA-11-1 served as the control building for the firing experiments at K-Site. Building TA-11-2 housed the betatron machine and TA-11-3 housed the cloud chamber.
- **L-Site (TA-12-4).** TA-12-4 is a firing pit that was used for high-explosives experiments that supported the development of the "Fat Man" implosion-type bomb. At the L-Site firing area, the physical remains of firing tests were examined after each shot as part of the terminal observation method of implosion diagnostics. The 12-foot-deep pit is lined with 3/4-inch steel plate and capped with a steel lid.
- **S-Site (TA-16-58).** TA-16-58 is a one-story, single-room, high-explosives storage magazine. This small building was constructed with reinforced concrete floor and walls. The magazine is encircled by a protective earthen berm and its roof is built of wood to serve as an upward path for the force of an accidental explosion.
- **Los Alamos Scientific Laboratory National Historic Landmark District.** The Los Alamos historic landmark district is located in the geographic and social center of the town of Los Alamos and is not managed by the Department of Energy. Notable buildings contributing to the historic landmark district include Bathtub Row residences, where top Project Y scientists lived, and Fuller Lodge, a large log building designed by architect John Gaw Meem that was used during the war as a center for community activities. Two additional Manhattan Project properties, the former East Cafeteria and the former Women's Army Corps dormitory, are located in the downtown area but are not part of the historic landmark district.
- **The Women's Army Corps Dormitory.** The dormitory building housed some of the Women's Army Corps members stationed at Los Alamos. The site is privately owned.
- **East Cafeteria.** The East Cafeteria was the favorite mess hall for the military members of the Manhattan Project. The structure is currently the Los Alamos Performing Arts Center.

The following related resources are owned by the Department of Energy but are not specifically called out in the enabling legislation, and are also related to the history and significance of the Los Alamos location.

- **Tunnel and Vault (TA-41-1).** TA-41-1 is a unique tunnel and vault facility and is one of the best examples of Cold War architecture at Los Alamos. TA-41-1 was built between 1948 and 1949, at the beginning of the Cold War era. Extending 230 feet into the north wall of Los Alamos Canyon, the vault functioned as a storage facility for components and nuclear material used in the nation's first nuclear weapon stockpile. The tunnel and vault facility also includes a small side room used during the early 1950s for initial experiments by Frederick Reines and Clyde Cowan that led to the discovery of the neutrino and the awarding of the Nobel Prize in Physics.

Hanford, Washington

The following related resources at Hanford were identified as park-eligible in the park legislation but are not within the current park boundary.

- **221-T Chemical Separation Building.** Completed in December 1944, the 221-T Chemical Separation Building, or T Plant, was the world's first large scale plutonium separation facility. Plutonium had to be chemically separated from irradiated uranium slugs that had passed through Hanford's production reactors. After further refinement, the plutonium was shipped to Los Alamos. Due to high radiation levels, workers were protected by seven feet of concrete and used periscopes, closed-circuit television sets, and remote control devices to operate equipment. A massive and open structure, measuring 800 feet long, 65 feet wide, and 80 feet high, the T Plant ceased chemical separation activities in 1956 but remains in use to support cleanup work at Hanford.
- **White Bluffs Historic District.** The town of White Bluffs was the first European American community on the Hanford Site and became a focal point in the Northwest for regional transportation of goods and agricultural development. The historic district includes all three locations of the town, as well as the former locations of the White Bluffs Cemetery, White Bluffs High School, White Bluffs Blacksmith Shop, numerous foundations, remnants of orchards, ornamental trees and shrubs, the original road system, and the sites of facilities associated with Manhattan Project operations.
- **Town of Hanford and Hanford Construction Camp Historic District.** This historic district comprises both the original Hanford town site, occupied between 1907 and early 1943, as well as facilities of the Manhattan Project era of 1943 to 1945. The area contains an extant road system, numerous foundations, rows of ornamental trees, remnants of orchards, and artifacts. The Hanford and White Bluffs historic districts are examples of the impact of U.S. government policies on the development of the West, including relocation of American Indian tribes, the Homestead Act, and the Newlands Water Reclamation Act, as well as the completion of a transcontinental rail link to the area.

- **Bruggemann's Agricultural Complex.** Operated from prior to 1900 through 1943, the agricultural complex is an abandoned irrigated farm, orchard, and fruit packing/shipping facility. The complex includes the Bruggemann Warehouse, which is in the Manhattan Project National Historical Park boundary, as well as foundations from a processing facility, grain silo, and assorted outbuildings, and about 23,000 feet of irrigation line of various types. It is one of the few remaining intact independent farming operations from the pre-war era in the Northwest and reflects the development of various irrigation techniques over the decades.

The following related resources are not specifically called out in the enabling legislation, but are also related to the history and significance of the Hanford location.

- **"Alphabet Homes" of Richland, Washington.** In 1943, the Army Corps of Engineers gave Spokane architect Albin Pherson less than 90 days to design a government-owned community to house thousands of Manhattan Project workers and their families. Each housing plan was given a letter of the alphabet for ease in identification. The community streets were named after veterans of previous American wars. Today, some of these homes are included in the City of Richland's Gold Coast Historic District. Some Manhattan Project-era commercial buildings remain near the Parkway area of Richland, notably the Players Theater and Ganzel's Barber Shop.

- **Portions of the Hanford Irrigation and Power Company's Irrigated Lands.** This discontinuous area includes historic resources most closely associated with the Hanford Irrigation District "Allard" Pump House, which is included in the national park. These include the headwall for and portion of the massive canal system (the Hanford Ditch), the farmstead owned and worked by the irrigation pump house's operator, Sam Allard, and portions of the irrigated lands that retain visual evidence of their past use, including plough lines and stumps from orchards that were cut down by the U.S. government after it acquired the land.

- **100-B Reactor Area.** This area contains the remains of the complex infrastructure that once supported operation of the B Reactor, including systems to pump water from the Columbia River to cool the reactor, water treatment facilities, power houses, cooling ponds, and security checkpoints. In addition to the B Reactor building, the River Pump House and Reservoir facilities are still intact and in use to support cleanup work at the Hanford Site.

Interpretive Themes

Interpretive themes are often described as the key stories or concepts that visitors should understand after visiting a park—they define the most important ideas or concepts communicated to visitors about a park unit. Themes are derived from, and should reflect, park purpose, significance, resources, and values. The set of interpretive themes is complete when it provides the structure necessary for park staff to develop opportunities for visitors to explore and relate to all park significance statements and fundamental resources and values.

Interpretive themes are an organizational tool that reveal and clarify meaning, concepts, contexts, and values represented by park resources. Sound themes are accurate and reflect current scholarship and science. They encourage exploration of the context in which events or natural processes occurred and the effects of those events and processes. Interpretive themes go beyond a mere description of the event or process to foster multiple opportunities to experience and consider the park and its resources. These themes help explain why a park story is relevant to people who may otherwise be unaware of connections they have to an event, time, or place associated with the park.

The following interpretive themes have been identified for Manhattan Project National Historical Park:

- The "secret cities" created for the Manhattan Project, and the sacrifice and displacement connected to them, exemplified this massive wartime effort and demonstrate remarkable opportunities to reflect on the extraordinary lengths to which people and nations go to protect their futures.
- The revolutionary science and engineering that fueled the race to create the world's first atomic weapon make these places a powerful illustration of technological innovation and collaboration, and offer guidance and insight into solving today's complex problems.
- From beginning to end, the Manhattan Project, its World War II context, and the many complex decisions that led to the incomprehensible destructive power of nuclear weapons prompts us to confront the profound choices and consequences that the world continues to struggle with today.
- The Manhattan Project thrust humanity into the nuclear age and forever changed the world, provoking consideration of dramatic scientific and technological advances as well as severe human costs and environmental consequences.

Part 2: Dynamic Components

The dynamic components of a foundation document include special mandates and administrative commitments and an assessment of planning and data needs. These components are dynamic because they will change over time. New special mandates can be established and new administrative commitments made. As conditions and trends of fundamental resources and values change over time, the analysis of planning and data needs will need to be revisited and revised, along with key issues. Therefore, this part of the foundation document will be updated accordingly.

Special Mandates and Administrative Commitments

Many management decisions for a park unit are directed or influenced by special mandates and administrative commitments with other federal agencies, state and local governments, utility companies, partnering organizations, and other entities. Special mandates are requirements specific to a park that must be fulfilled. Mandates can be expressed in enabling legislation, in separate legislation following the establishment of the park, or through a judicial process. They may expand on park purpose or introduce elements unrelated to the purpose of the park. Administrative commitments are, in general, agreements that have been reached through formal, documented processes, often through memorandums of agreement. Examples include easements, rights-of-way, arrangements for emergency service responses, etc. Special mandates and administrative commitments can support, in many cases, a network of partnerships that help fulfill the objectives of the park and facilitate working relationships with other organizations. They are an essential component of managing and planning for Manhattan Project National Historical Park.

Special Mandates

- **Enabling Legislation.** The December 2014 congressional legislation that established Manhattan Project National Historical Park mandates that the national park unit be managed through a collaborative partnership by the National Park Service and the U.S. Department of Energy to preserve, interpret, and facilitate access to key historic resources associated with the Manhattan Project. The legislation states that the park shall consist of facilities and areas as determined by the Secretary of the Interior in consultation with the Secretary of Energy.

- **Memorandum of Agreement.** The park's enabling legislation states that an agreement must be established between the Secretary of Energy and Secretary of the Interior within one year of the enactment of legislation to define each respective agency's role in administering the facilities, land, or interest in land under the administrative jurisdiction of the Department of Energy that is to be included in the park. To fulfill this mandate the agencies executed a memorandum of agreement on November 10, 2015, to outline the agencies' respective roles and responsibilities in co-managing the park. The National Park Service will provide administration, interpretation, education, and technical assistance in support of resource preservation efforts. The Department of Energy will continue to be responsible for management, operations, maintenance, access, and historic preservation activities of the historic Manhattan Project sites, as all current sites included in the park are currently under its custody and control. The two agencies will collaborate in the identification and development of partnership arrangements and other strategies.

Administrative Commitments

For more information about the existing administrative commitments for Manhattan Project National Historical Park, please see appendix B.

Assessment of Planning and Data Needs

Once the core components of part 1 of the foundation document have been identified, it is important to gather and evaluate existing information about the park's fundamental resources and values, and develop a full assessment of the park's planning and data needs. The assessment of planning and data needs section presents planning issues, the planning projects that will address these issues, and the associated information requirements for planning, such as resource inventories and data collection, including GIS data.

There are three sections in the assessment of planning and data needs:

1. analysis of fundamental resources and values
2. identification of key issues and associated planning and data needs
3. identification of planning and data needs (including spatial mapping activities or GIS maps)

The analysis of fundamental resources and values and identification of key issues leads up to and supports the identification of planning and data collection needs.

Analysis of Fundamental Resources and Values

The fundamental resource or value analysis table includes current conditions, potential threats and opportunities, planning and data needs, and selected laws and NPS policies related to management of the identified resource or value. Please refer to appendix C for the park fundamental resource or value analysis tables.

Identification of Key Issues and Associated Planning and Data Needs

This section considers key issues to be addressed in planning and management and therefore takes a broader view over the primary focus of part 1. A key issue focuses on a question that is important for a park. Key issues often raise questions regarding park purpose and significance and fundamental resources and values. For example, a key issue may pertain to the potential for a fundamental resource or value in a park to be detrimentally affected by discretionary management decisions. A key issue may also address crucial questions that are not directly related to purpose and significance, but that still affect them indirectly. Usually, a key issue is one that a future planning effort or data collection needs to address and requires a decision by NPS managers.

The following are key issues for Manhattan Project National Historical Park and the associated planning and data needs to address them:

- **Park Management.** In all three park locations, there is a need for an overall general management plan that organizes and provides a collaborative framework for managing three geographically separate locations as one park unit. Related to this plan, the park needs to assess, evaluate, and coordinate existing and potential visitor use, facilities, and related resources to support park visitation. This needs to be approached parkwide in light of the overall common story of the park, and also on a location-specific level to address the unique stories and visitor opportunities at Oak Ridge, Los Alamos, and Hanford. Awareness of the local resources that are a part of each location's contribution to the Manhattan Project story would help visitors understand its complexity. This plan would include NPS coordination with the Department of Energy to determine staffing needed to support tours and visitor facilities. There is a need to develop and document a process and criteria for determining when existing "park eligible" sites may be added to the park. There is also a need to have a process for identifying related resources outside the park boundary that are not currently "park eligible," for which the park could consider ways to support their preservation and future visitor access through partnerships or other means.

- *Associated Planning Needs:* General management plan (NPS and DOE); partnership strategy (NPS and DOE); historic structure reports and cultural resource reports for Oak Ridge, Los Alamos, and Hanford

- *Associated Data Needs:* Transfer GIS data from Department of Energy (NPS with DOE assistance); National Register of Historic Places documentation; inventory of 221-T and 221-B Buildings artifacts and equipment, and documentation of archival materials

- **Interpretive Planning.** To complement park planning, an interpretive plan, including a long-range interpretive plan, is needed for the entire park and also specific to each location. The park has new interpretive themes, but lacks an overall interpretive framework to guide park media, educational programming, visitor programs, and to support consistent interpretation and messaging across all three locations. The interpretive plan must also incorporate the park purpose and relate the complex significance statements to the interpretive themes.

  There are currently uncoordinated visitor centers that are not managed by the National Park Service that each tell portions of the overall story of the Manhattan Project (e.g., Y-12 New Hope Center at Oak Ridge and the Bradbury Science Museum at Los Alamos). A planning framework would aim to coordinate current and future interpretive programs across the park locations, and develop virtual interpretive programs to expand connections to sites not yet physically accessible to the public. This would include continuation of oral history collection, which is needed to support interpretive programming as well as to enhance understanding of park and park-related resources. Also, interpretive subthemes would be developed from the park's current primary interpretive themes to delve deeper into topics such as diverse groups of people involved in the Manhattan Project, the unusual role of women at all of the sites, and the development of a scientific core. The inclusion of more diverse stories related to the history of the Manhattan Project in each community would support additional interpretation of these stories. There is a need to understand potential audiences, including engaging youth and diverse audiences and community members. The plan would support curriculum-based education.

  - *Associated Planning Needs:* Interpretive plan (NPS with DOE assistance)

  - *Associated Data Needs:* Inventory of 221-T and 221-B buildings, artifacts, and equipment, and documentation of archival materials (DOE)

- **Collections Management.** The Department of Energy maintains collections at each location, but needs a comprehensive approach to artifacts and collections management that is an agreed upon scope for park purposes. This approach should be manageable and understandable for the department given the breadth and depth of items and material available. The scope of collections statement is needed to support interpretation of park significance and future research to expand knowledge of important park history and resources. The scope of collections statement would identify and potentially limit the items the National Park Service and Department of Energy may seek to acquire for the collection. The plan would address the need to identify long-term curatorial storage according to NPS museum collections management policy, and would serve as a reference for the Department of Energy, which is not required to adhere to NPS policy for the collections they manage. It would also outline a strategy for managing collections and archives across the park and three locations.

    - *Associated Planning Needs:* Collections management plan (NPS with DOE support)

    - *Associated Data Needs:* Document pre-Manhattan Project and Manhattan Project-related archives and artifacts (DOE with NPS assistance); ethnographic overview, assessment, and inventory (NPS and DOE, in collaboration with stakeholders)

- **Partnership Coordination.** Beyond the National Park Service and Department of Energy partnership in managing the park, park management may identify strategies for pursuing local partnerships with organizations that manage related resources and other interpretive sites related to the Manhattan Project, as well as tribes, pueblos, friends groups, cooperating associations, and appropriate community groups.

    - *Associated Planning Needs:* Partnership strategy (parkwide and location-specific; NPS and DOE)

- **Preserving the Cultural Legacy of Manhattan Project Communities.** The Manhattan Project affected many different lives, groups, and communities in profound and lasting ways. Construction and operation of Manhattan Project facilities at Oak Ridge, Los Alamos, and Hanford required the exclusion of American Indian tribes and pueblos, preventing the exercise of tribal treaty rights, as well as the eviction of generations of homesteaders and settlers who overcame extreme hardships to build communities, transportation systems, and economies. Displacement was absolute, and neither the European American (former) landowners nor the tribes were allowed access to sacred and familial sites, including tribal hunting, fishing and gathering sites, and traditional community places such as churches and grange halls. Others directly impacted by the Manhattan Project include site workers and their families, segregated African American and Hispanic site workers and communities, and the families who formed the towns that served Manhattan Project operations. In addition, Japanese people today, including survivors of the Nagasaki and Hiroshima bombs and their descendants, also identify strong cultural connections to the Manhattan Project sites. More information on all these groups, and potentially other groups not yet identified, is needed to gain a better understanding of their cultural associations with Oak Ridge, Los Alamos, and Hanford. An inventory of ethnographic resources at these three sites would support resource management and protection, as well as park interpretation.

  It might also reveal opportunities to link these cultural legacies to other sites, such as Japanese internment sites and other World War II sites, and to interpret these stories on a larger scale.

  - *Associated Planning Needs:* General management plan; interpretive plan; historic structure reports and cultural resource reports for Oak Ridge, Los Alamos, and Hanford; partnership strategy (NPS and DOE)

  - *Associated Data Needs:* Ethnographic overview, assessment, and inventory (DOE and NPS)

Planning and Data Needs

To maintain connection to the core elements of the foundation and the importance of these core foundation elements, the planning and data needs listed here are directly related to protecting fundamental resources and values, park significance, and park purpose, as well as addressing key issues. To successfully undertake a planning effort, information from sources such as inventories, studies, research activities, and analyses may be required to provide adequate knowledge of park resources and visitor information. Such information sources have been identified as data needs. Geospatial mapping tasks and products are included in data needs.

Items considered of the utmost importance were identified as high priority, and other items identified, but not rising to the level of high priority, were listed as either medium- or low-priority needs. These priorities inform park management efforts to secure funding and support for planning projects.

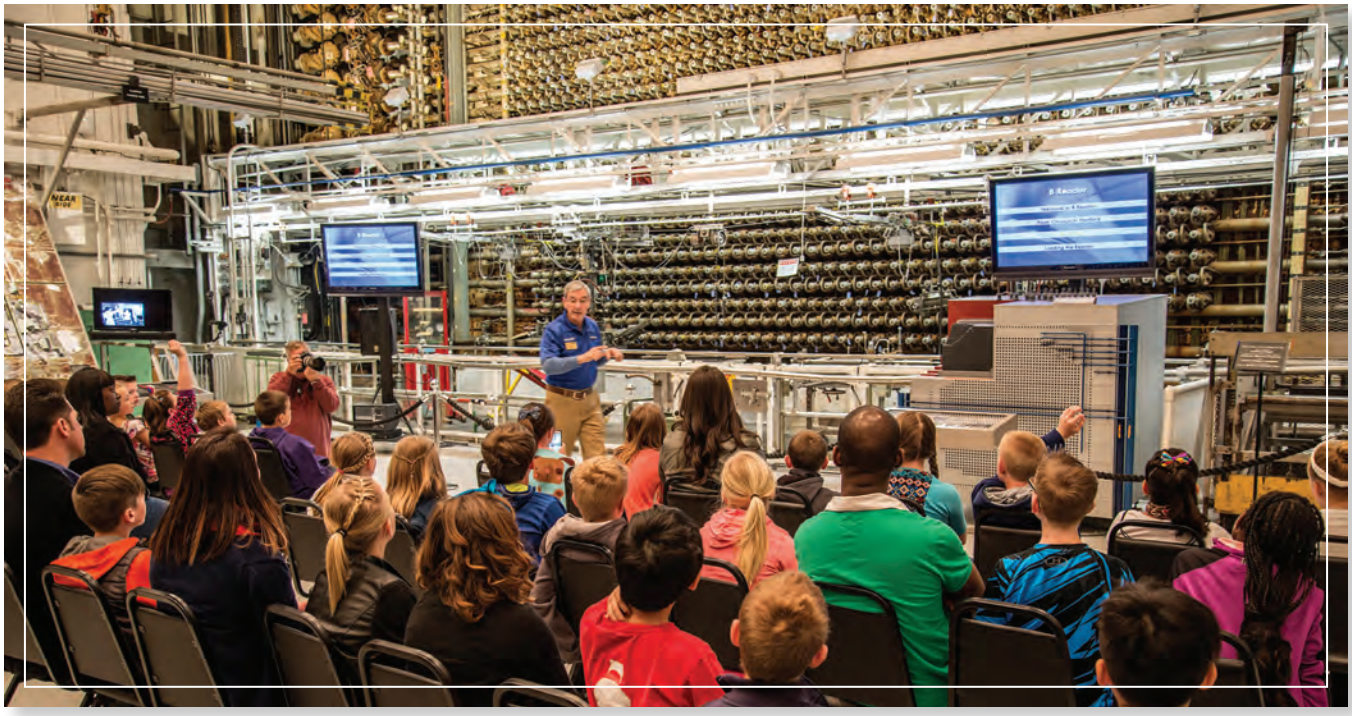
Parkwide Planning Needs – Where A Decision-Making Process Is Needed					
Related to an FRV or Key Issue?	**Planning Needs**	**Park Location**	**Lead Organization**	**Priority (H, M, L)**	**Notes**
Key Issue	General management plan	Parkwide	NPS and DOE	High	This plan would set forth a long-term collaborative framework for all aspects of managing three geographically separate units. It is required by enabling legislation and would assess whether any additional eligible facilities should be included in the park (boundaries) and address visitor access and facility needs and resource conditions.
Key Issue	Interpretive plan	Parkwide	NPS with DOE assistance	High	This plan would develop a parkwide interpretive framework, define key messages and audiences, include a long-range interpretive plan, and incorporate historic context reports for all three park locations.
Key Issue	Collections management plan	Parkwide	NPS and DOE	High	This plan would identify how the collections should be curated, who manages them, and where they are to be located. It would include a park scope of collections statement to identify items that could support interpretation and exhibits, guide who owns and manages the collections, and identify appropriate collections storage space. This plan would also address programmatic property disposition for deaccessioning items and include an approach for the management of surface artifacts and objects and a collaborative planning effort to determine the protection and management of artifacts and objects on the ground in the park and areas accessible by visitors.
Key Issue	Partnership strategy	Parkwide	NPS and DOE	Medium	This strategy would cover all three locations and include tribes, pueblos, friends groups, cooperating associations, and community stakeholders as well as local property owners. This effort would include developing a potential partner matrix.

Location-Specific Planning Needs – Where A Decision-Making Process Is Needed					
Related to an FRV or Key Issue?	**Planning Needs**	**Park Location**	**Lead Organization**	**Priority (H, M, L)**	**Notes**
Key Issue and multiple FRVs	Historic structure reports and cultural resource reports for Hanford	Hanford	DOE with NPS assistance	Medium	Reports would be prepared for Bruggemann's Agricultural Complex Warehouse, Hanford High School, Hanford Irrigation District Pump House, and White Bluffs Bank, and would include treatment plans and maintenance and preservation guides. The draft historic structure report for B Reactor would be completed.
Key Issue and multiple FRVs	Historic structure reports and cultural resource reports for Oak Ridge	Oak Ridge	DOE and NPS	Medium	This plan would develop the details for stabilization, preservation, and facility improvements. The park would seek support from the NPS regional office. Building 9731 might be used to tell the overall Y-12 story, including building 9204-3. Although this overall process is a medium priority, there is a more urgent need to complete reports for the K-25 building site.
Key Issue and multiple FRVs	Historic structure reports and cultural resource reports for Los Alamos	Los Alamos	DOE with NPS assistance	Medium	This plan would address critical landscape preservation issues and identify treatment recommendations. It would support site and visitor access planning in the general management plan. Although this overall is a medium priority, reports for the Pajarito sites and Gun Site would be prioritized at Los Alamos.

Parkwide Data Needs – Where Information Is Needed Before Decisions Can Be Made					
Related to an FRV or Key Issue?	**Data and GIS Needs**	**Park Location**	**Lead Organization**	**Priority (H, M, L)**	**Notes**
Key Issue and multiple FRVs	Document pre-Manhattan Project and Manhattan Project-related archives and artifacts	Parkwide	DOE with NPS assistance	High	This would be an inventory of existing archives and artifacts to determine the nature of material already on hand, and would support the development of the scope of collections statement. It would assess the need for export control review of materials identified for display. DOE and NPS staff would work together to ensure alignment with the interpretive program. This would support the interpretive plan and collections management plan.
Key Issue and multiple FRVs	Ethnographic overview, assessment, and inventory	Parkwide	NPS and DOE, in collaboration with stakeholders	High	This is a critical assessment that would support the development of a general management plan. This two-part report would provide an overview, analysis, and identification of park ethnographic resources and the groups who traditionally define certain cultural and natural features as significant to their ethnic heritage and cultural viability. Part 1 would include a literature review, interviews and consultation, and identify data gaps. Part 2 would involve an inventory of the cultural and natural features identified in part 1, and would document the location and boundaries of these resources; their condition; their forms and periods of use; and their significance and association. The report would note preferred treatments and confidentiality concerns and include recommendations for consultation and treatment strategies according to law and policy.
Key Issue and multiple FRVS	National Register of Historic Places documentation	Parkwide	DOE with NPS assistance	High	Nominations are needed for the T Plant and pre-Manhattan Project sites, including Bruggemann's Agricultural Complex Warehouse, Hanford High School, Hanford Irrigation District Pump House, and White Bluffs Bank. The Department of Energy would need to do due diligence for National Historic Preservation Act section 110 compliance.
Key Issue and multiple FRVs	Evaluation of existing exhibits and how they align with the interpretive themes	Parkwide	NPS	High	This information would support the interpretive plan for the park. This could include other associated museums and related resources.

Parkwide Data Needs – Where Information Is Needed Before Decisions Can Be Made					
Related to an FRV or Key Issue?	**Data and GIS Needs**	**Park Location**	**Lead Organization**	**Priority (H, M, L)**	**Notes**
Key Issue	Transfer GIS data from DOE	Parkwide	DOE with NPS assistance	Medium	This would support the park atlas. For the Oak Ridge K-25 building site it would obtain data for the original reservation size and current active DOE footprint.
Multiple FRVs	Historic resource study	Parkwide	DOE	Low	The Department of Energy would provide necessary documentation for this study. The information for the park locations is owned and managed by different functional DOE organizations and would be prepared independently.

Location-Specific Data Needs – Where Information Is Needed Before Decisions Can Be Made					
Related to an FRV or Key Issue?	**Data and GIS Needs**	**Park Location**	**Lead Organization**	**Priority (H, M, L)**	**Notes**
Key Issue	Inventory of 221-T and 221-B buildings, artifacts, and equipment, and documentation of archival materials	Hanford	DOE	High	This would identify future interpretive opportunities including artifacts and equipment that might be in 221-B. This would be high priority for inventory and removal of artifacts, which have potential to be included in exhibits for interpretation.



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Appendixes

Appendix A: Enabling Legislation for Manhattan Project National Historical Park

SEC. 3039. MANHATTAN PROJECT NATIONAL HISTORICAL PARK.

(a) PURPOSES.—The purposes of this section are—

(1) to preserve and protect for the benefit of present and future generations the nationally significant historic resources associated with the Manhattan Project;

(2) to improve public understanding of the Manhattan Project and the legacy of the Manhattan Project through interpretation of the historic resources associated with the Manhattan Project;

(3) to enhance public access to the Historical Park consistent with protection of public safety, national security, and other aspects of the mission of the Department of Energy; and

(4) to assist the Department of Energy, Historical Park communities, historical societies, and other interested organizations and individuals in efforts to preserve and protect the historically significant resources associated with the Manhattan Project.

(b) DEFINITIONS.—In this section:

(1) HISTORICAL PARK.—The term "Historical Park" means the Manhattan Project National Historical Park established under subsection (c).

(2) MANHATTAN PROJECT.—The term "Manhattan Project" means the Federal military program to develop an atomic bomb ending on December 31, 1946.

(3) SECRETARY.—The term "Secretary" means the Secretary of the Interior.

(c) ESTABLISHMENT OF MANHATTAN PROJECT NATIONAL HISTORICAL PARK.—

(1) ESTABLISHMENT.—

(A) DATE.—Not later than 1 year after the date of enactment of this section, there shall be established as a unit of the National Park System the Manhattan Project National Historical Park.

(B) AREAS INCLUDED.—The Historical Park shall consist of facilities and areas listed under paragraph (2) as

determined by the Secretary, in consultation with the Secretary of Energy. The Secretary shall include the area referred to in paragraph (2)(C)(i), the B Reactor National Historic Landmark, in the Historical Park.

(2) ELIGIBLE AREAS.—The Historical Park may only be comprised of one or more of the following areas, or portions of the areas, as generally depicted in the map titled "Manhattan Project National Historical Park Sites", numbered 540/108,834–C, and dated September 2012:

(A) OAK RIDGE, TENNESSEE.—Facilities, land, or interests in land that are—

(i) Buildings 9204–3 and 9731 at the Department of Energy Y–12 National Security Complex;

(ii) the X–10 Graphite Reactor at the Department of Energy Oak Ridge National Laboratory;

(iii) the K–25 Building site at the Department of Energy East Tennessee Technology Park;

(iv) the former Guest House located at 210 East Madison Road; and

(v) at other sites in Oak Ridge, Tennessee, that are not depicted on the map but are determined by the Secretary to be suitable and appropriate for inclusion in the Historical Park, except that sites administered by the Secretary of Energy may be included only with the concurrence of the Secretary of Energy.

(B) LOS ALAMOS, NEW MEXICO.—Facilities, land, or interests in land that are—

(i) within the Los Alamos Scientific Laboratory National Historic Landmark District, or any addition to the Landmark District proposed in the National Historic Landmark Nomination—Los Alamos Scientific Laboratory (LASL) NHL District (Working Draft of NHL Revision), Los Alamos National Laboratory document LA–UR 12–00387 (January 26, 2012);

(ii) the former East Cafeteria located at 1670 Nectar Street; and

(iii) the former dormitory located at 1725 17th Street.

(C) HANFORD, WASHINGTON.—Facilities, land, or interests in land on the Department of Energy Hanford Nuclear Reservation that are—

(i) the B Reactor National Historic Landmark;

(ii) the Hanford High School in the town of Hanford and Hanford Construction Camp Historic District;

(iii) the White Bluffs Bank building in the White Bluffs Historic District;

(iv) the warehouse at the Bruggemann's Agricultural Complex;

(v) the Hanford Irrigation District Pump House; and

(vi) the T Plant (221–T Process Building).

(d) AGREEMENT.—

(1) IN GENERAL.—Not later than 1 year after the date of enactment of this section, the Secretary and the Secretary of Energy (acting through the Oak Ridge, Los Alamos, and Richland site offices) shall enter into an agreement governing the respective roles of the Secretary and the Secretary of Energy

in administering the facilities, land, or interests in land under the administrative jurisdiction of the Department of Energy that is to be included in the Historical Park under subsection (c)(2), including provisions for enhanced public access, management, interpretation, and historic preservation.

(2) RESPONSIBILITIES OF THE SECRETARY.—Any agreement under paragraph (1) shall provide that the Secretary shall—

(A) have decisionmaking authority for the content of historic interpretation of the Manhattan Project for purposes of administering the Historical Park; and

(B) ensure that the agreement provides an appropriate advisory role for the National Park Service in preserving the historic resources covered by the agreement.

(3) RESPONSIBILITIES OF THE SECRETARY OF ENERGY.—Any agreement under paragraph (1) shall provide that the Secretary of Energy—

(A) shall ensure that the agreement appropriately protects public safety, national security, and other aspects of the ongoing mission of the Department of Energy at the Oak Ridge Reservation, Los Alamos National Laboratory, and Hanford Site;

(B) may consult with and provide historical information to the Secretary concerning the Manhattan Project;

(C) shall retain responsibility, in accordance with applicable law, for any environmental remediation or activities relating to structural safety that may be necessary in or around the facilities, land, or interests in land governed by the agreement; and

(D) shall retain authority and legal obligations for historic preservation and general maintenance, including to ensure safe access, in connection with the Department's Manhattan Project resources.

(4) AMENDMENTS.—The agreement under paragraph (1) may be amended, including to add to the Historical Park facilities, land, or interests in land within the eligible areas described in subsection (c)(2) that are under the jurisdiction of the Secretary of Energy.

(e) PUBLIC PARTICIPATION.—

(1) IN GENERAL.—The Secretary shall consult with interested State, county, and local officials, organizations, and interested members of the public—

(A) before executing any agreement under subsection (d); and

(B) in the development of the general management plan under subsection (f)(2).

(2) NOTICE OF DETERMINATION.—Not later than 30 days after the date on which an agreement under subsection (d) is entered into, the Secretary shall publish in the Federal Register notice of the establishment of the Historical Park, including an official boundary map.

(3) AVAILABILITY OF MAP.—The official boundary map published under paragraph (2) shall be on file and available for public inspection in the appropriate offices of the National Park Service. The map shall be updated to reflect any additions to the Historical Park from eligible areas described in subsection (c)(2).

(4) ADDITIONS.—Any land, interest in land, or facility within the eligible areas described in subsection (c)(2) that is acquired by the Secretary or included in an amendment to the agreement under subsection (d)(4) shall be added to the Historical Park.

(f) ADMINISTRATION.—

(1) IN GENERAL.—The Secretary shall administer the Historical Park in accordance with—

(A) this section; and

(B) the laws generally applicable to units of the National Park System, including—

(i) the National Park System Organic Act (16 U.S.C. 1 et seq.); and

(ii) the Act of August 21, 1935 (16 U.S.C. 461 et seq.).

(2) GENERAL MANAGEMENT PLAN.—Not later than 3 years after the date on which funds are made available to carry out this subsection, the Secretary, with the concurrence of the Secretary of Energy, with respect to land administered by the Secretary of Energy, and in consultation and collaboration with the Oak Ridge, Los Alamos and Richland Department of Energy site offices, shall complete a general management plan for the Historical Park in accordance with section 12(b) of Public Law 91–383 (commonly known as the National Park Service General Authorities Act; 16 U.S.C. 1a–7(b)).

(3) INTERPRETIVE TOURS.—The Secretary may, subject to applicable law, provide interpretive tours of historically significant Manhattan Project sites and resources in the States of Tennessee, New Mexico, and Washington that are located outside the boundary of the Historical Park.

(4) LAND ACQUISITION.—

(A) IN GENERAL.—The Secretary may acquire land and interests in land within the eligible areas described in subsection (c)(2) by—

(i) transfer of administrative jurisdiction from the Department of Energy by agreement between the Secretary and the Secretary of Energy;

(ii) donation;

(iii) exchange; or

(iv) in the case of land and interests in land within the eligible areas described in subparagraphs (A) and (B) of subsection (c)(2), purchase from a willing seller.

(B) NO USE OF CONDEMNATION.—The Secretary may not acquire by condemnation any land or interest in land under this section.

(C) FACILITIES.—The Secretary may acquire land or interests in land in the vicinity of the Historical Park for visitor and administrative facilities.

(5) DONATIONS; COOPERATIVE AGREEMENTS.—

(A) FEDERAL FACILITIES.—

(i) IN GENERAL.—The Secretary may enter into one or more agreements with the head of a Federal agency to provide public access to, and management, interpretation, and historic preservation of, historically significant Manhattan Project resources under the jurisdiction or control of the Federal agency.

(ii) DONATIONS; COOPERATIVE AGREEMENTS.—The Secretary may accept donations from, and enter into cooperative agreements with, State governments, units of local government, tribal governments, organizations, or individuals to further the purpose of an interagency agreement entered into under clause (i) or to provide visitor services and administrative facilities within reasonable proximity to the Historical Park.

(B) TECHNICAL ASSISTANCE.—The Secretary may provide technical assistance to State, local, or tribal governments, organizations, or individuals for the management, interpretation, and historic preservation of historically significant Manhattan Project resources not included within the Historical Park.

(C) DONATIONS TO DEPARTMENT OF ENERGY.—For the purposes of this section, or for the purpose of preserving and providing access to historically significant Manhattan Project resources, the Secretary of Energy may accept, hold, administer, and use gifts, bequests, and devises (including labor and services).

(g) ADJACENT MANAGEMENT.—

(1) IN GENERAL.—Nothing in this section creates a protective perimeter or buffer zone around the boundary of the Historical Park.

(2) ACTIVITIES OUTSIDE THE BOUNDARY OF THE HISTORICAL PARK.—The fact that an activity or use on land outside the boundary of the Historical Park can be seen or heard from within the boundary shall not preclude the activity or use outside the boundary of the Historical Park.

(h) NO CAUSE OF ACTION.—Nothing in this section shall be construed to create a cause of action with respect to activities outside or adjacent to the established boundary of the Historical Park.

Appendix B: Inventory of Administrative Commitments

Administrative Commitments for Manhattan Project National Historical Park on the Oak Ridge Reservation

Title / Agency / Organization	Purpose / Description	Expiration Date	Responsible Parties
Memorandums of Understanding/Mutual Aid Agreements			
Y-12 mutual aid emergency ambulance services	Providing ambulance services on Y-12 as appropriate	None	National Nuclear Security Administration (NNSA)
Oak Ridge National Laboratory (ORNL) mutual aid emergency ambulance services	Providing ambulance services on ORNL as appropriate	None	DOE Office of Science
Mutual aid ambulance service Anderson County	Providing ambulance services in Anderson County as appropriate	None	Anderson County, DOE/ NNSA
Mutual aid fire protection	Mutual aid for fire protection between DOE and City of Oak Ridge	None	DOE, City of Oak Ridge
Memorandums of Agreement			
East Tennessee Technology Park (ETTP) section 106 memorandum of agreement	To satisfy National Historic Preservation Act requirements for adverse effects to ETTP		DOE, signatories
ETTP fire protection and emergency response	To document intent of the parties for use of ETTP fire station and subsequent provision of specified fire and emergency services to ETTP by the City of Oak Ridge	9/30/2019	DOE, City of Oak Ridge
Anderson County Sherriff's Office	Emergency Services	8/13/2018	
Knox County Sherriff's Office	Emergency Services	8/20/2018	
Loudon County Sherriff's Office	Emergency Services	8/19/2018	
Oak Ridge Police Department	Emergency Services	8/20/2018	
Roane County Sherriff's Department	Emergency Services	8/19/2018	

Title / Agency / Organization	Purpose / Description	Expiration Date	Responsible Parties
Cooperative Agreements			
Center for Oak Ridge Oral History	To seek oral histories of those who played a role in Oak Ridge before, during, and after the Manhattan Project		City of Oak Ridge
General Agreements			
Emergency medical services operating protocols on Oak Ridge Reservation	Outlines recommended emergency medical services response actions to be taken on the Oak Ridge Reservation	None	DOE/NNSA

Administrative Commitments for Manhattan Project National Historical Park on the Los Alamos Site

Title / Agency / Organization	Purpose / Description	Expiration Date	Responsible Party
Programmatic Agreements			
Programmatic Agreement Between the U.S. Department of Energy, National Nuclear Security Administration, Los Alamos Field Office, the New Mexico State Historic Preservation Office and the Advisory Council on Historic Preservation Concerning Management of the Historic Properties of Los Alamos National Laboratory, New Mexico	Agreement on how historic properties are managed at Los Alamos National Laboratory. This programmatic agreement is being revised and will probably have a 10-year term	12/31/2016	Los Alamos Field Office and the New Mexico State Historic Preservation Officer
Interagency Agreements			
Five-year interagency agreement with National Park Service Manhattan Project support	Interagency agreement to facilitate work performed by NPS for NNSA at Los Alamos	Five years after signature	Los Alamos Field Office and NPS

Title / Agency / Organization	Purpose / Description	Expiration Date	Responsible Party
Cooperative Agreements			
New Mexico Wildland Fire Management Joint Powers Master Agreement, signed February 2008	The purpose of this New Mexico Wildland Fire Management Joint Powers Master Agreement is to document the agencies' commitment to this agreement to improve efficiency by facilitating the coordination and exchange of personnel, equipment, supplies, services, and funds among the agencies to this agreement for management of wildland fires; in addition, presidentially declared emergencies and disasters or other emergencies and disasters under the Federal Emergency Management Agency authority are covered under this agreement		Multiple federal and state entities
General Agreements			
New Mexico Environment Department order on consent agreement	A new draft of this compliance order on consent order became effective on June 24, 2016		DOE/ Environmental Management – Los Alamos and New Mexico Environment Department
Special Park Uses			
DOE mission continues in some areas and may impact access to areas in the park or eligible to be in the park			
Access to monitoring stations			
Access by Los Alamos National Laboratory			

Administrative Commitments That Apply to the Manhattan Project National Historical Park on the Hanford Site

Title / Agency / Organization	Purpose / Description	Expiration Date	Responsible Party
Memorandums of Understanding			
U.S. Fish and Wildlife Service	Memorandum of understanding between DOE Richland Operations Office and DOI's Fish and Wildlife Service for ALE (1st Amendment) and Wahluke Slope Permit (4th Amendment), June 14, 2001	None	Richland Site Office
U.S. Fish and Wildlife Service	Memorandum of understanding between the U.S. Department of Energy and the U.S. Fish and Wildlife Service regarding the long-term protection of important and ecologically sensitive lands on the Department of Energy Hanford Site in Richland, Washington, dated August 8, 2014	None	Richland Site Office
U.S. Fish and Wildlife Service	Responsibilities of federal agencies to protect migratory birds	None	DOE
Confederated Tribes of the Umatilla Indian Reservation	Memorandum of understanding between U.S. Department of Energy Richland Operations Office and the Confederated Tribes of the Umatilla Indian Reservation for increased access to the Hanford Site, January 2016	None	Richland Site Office
Wanapum Band of Indians	Memorandum of understanding between U.S. Department of Energy Richland Operations Office and the Wanapum Band of Indians for increased access to the Hanford Site, January 2016	None	Richland Site Office
Interagency Agreements			
DOE, Advisory Council on Historic Preservation, Washington State Historic Preservation Office	Maintenance, deactivation, alteration, and demolition of the built environment on the Hanford site	None	Richland Site Office

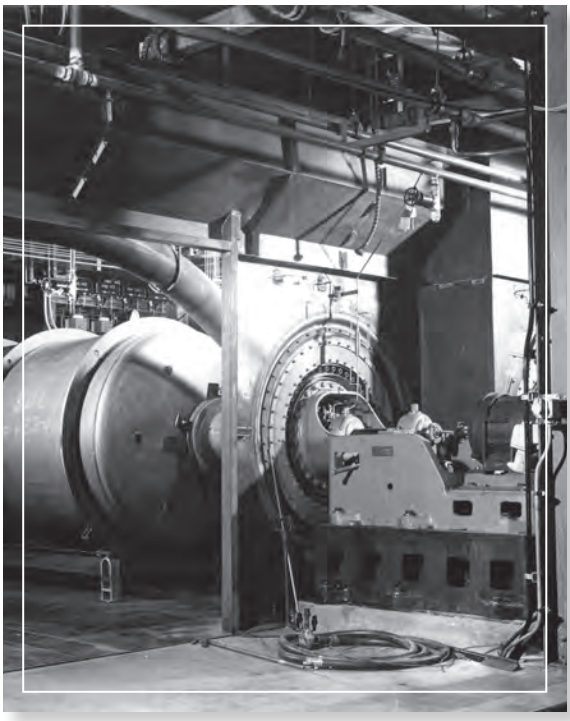
Title / Agency / Organization	Purpose / Description	Expiration Date	Responsible Party
Interagency Agreements (continued)			
Washington State Department of Archaeology and Historic Preservation, the Advisory Council on Historic Preservation, Confederated Tribes and Bands of the Yakama Nation, and Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, and Wanapum	Memorandum of agreement, Rev. 7, September 14, 2015, titled "Memorandum of Agreement Among The U.S. Department of Energy Richland Operations Office, the Washington State Department of Archaeology and Historic Preservation, the Advisory Council on Historic Preservation, Confederated Tribes and Bands of the Yakama Nation, Confederated Tribes of the Umatilla Indian Reservation, Nez Perce Tribe, and Wanapum Regarding the Adverse Effect of the Final Area of Potential Effect Deed Transfer on Yakama Traditional Cultural Property, First Foods Gathering Areas Traditional Cultural Property, Óykalla Ayn Wéetes Traditional Cultural Property, Shu Wipa Traditional Cultural Property, Hanford Site Plant Railroad (45BN1107), the Richland Irrigation Canal (45BN1125), and Wooded Island Archaeological District (DT31) to mitigate the adverse effect of the federal land transfer on the Shu Wipa Traditional Cultural Property (TCP)"	None	Richland Site Office
General Agreements			
Hanford Comprehensive Land-Use Plan and Environmental Impact Statement	Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS0222F), Record of Decision, 1999, and two supplement analyses defines current and future use for the Hanford site	None	Richland Site Office
Hanford Federal Facility agreement and consent order	Comprehensive cleanup and compliance agreement signed on May 15, 1989	None	DOE/ Hanford, U.S. Environmental Protection Agency, and State of Washington Department of Ecology

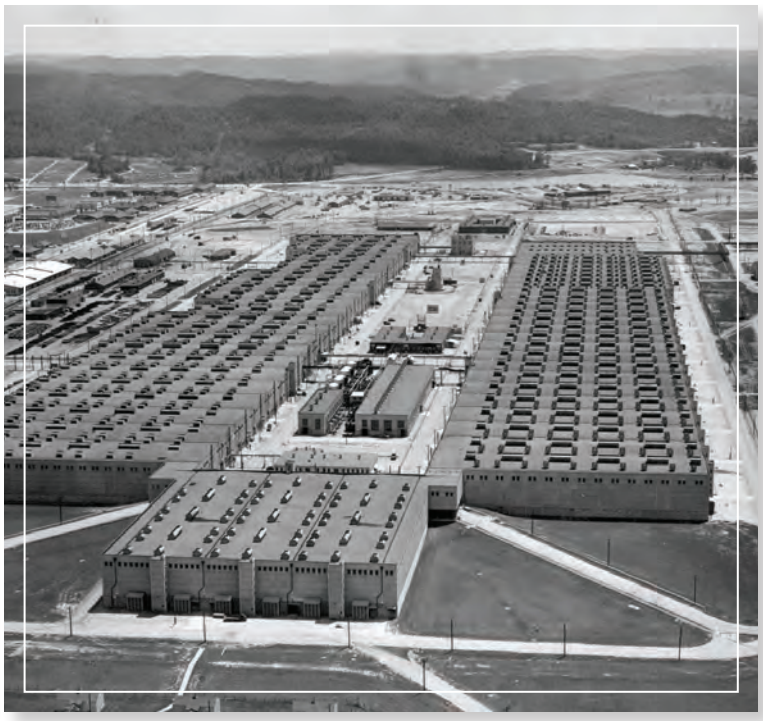
Appendix C: Fundamental Resources and Values Analysis Tables

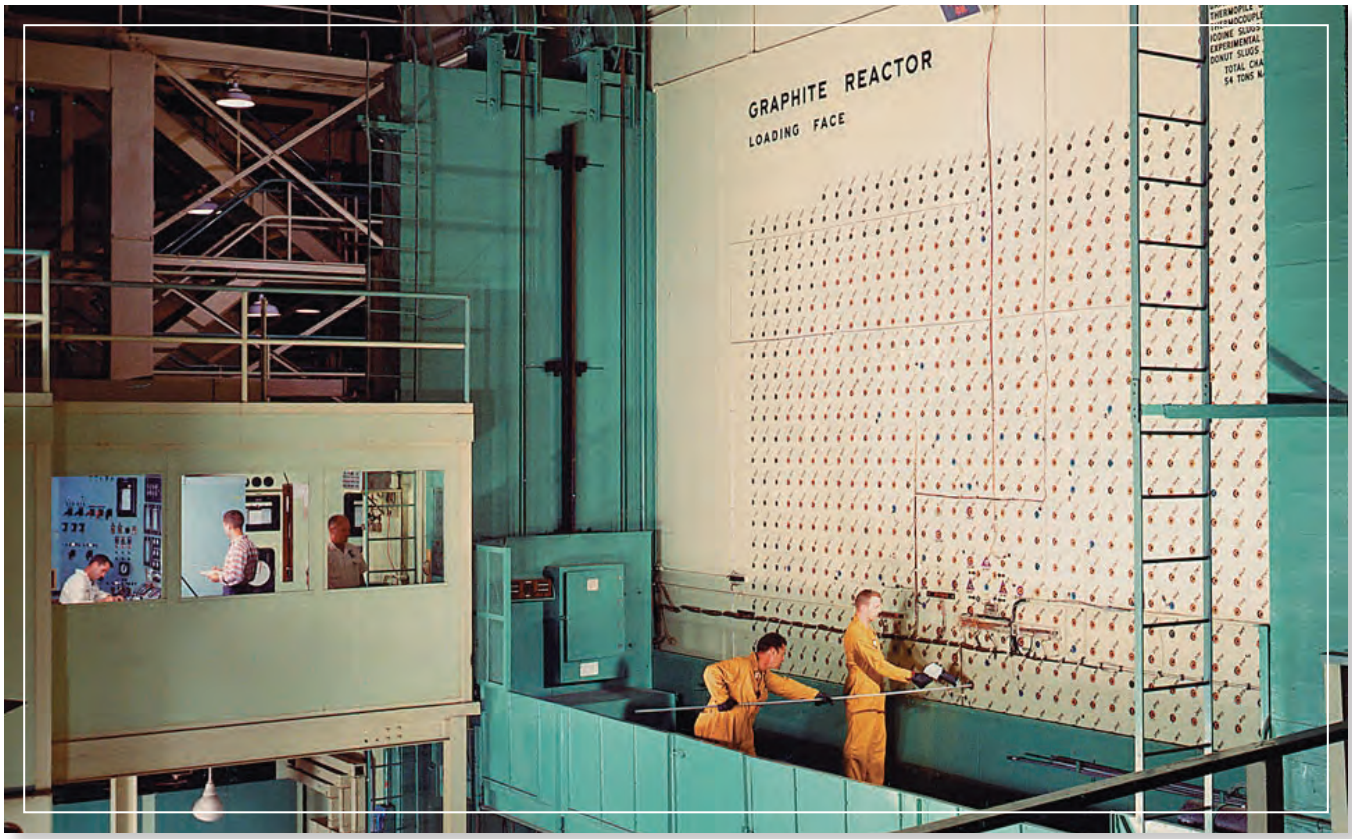
Fundamental Resource or Value	Oak Ridge: K-25 Building Site
Related Significance Statements	Significance statements 1, 2, 3, 6, 7, and 9
Current Conditions and Trends	**Conditions** • Demolition of the K-25 building was completed in 2013 and all debris was removed from the site, leaving the building footprint/foundation exposed. • The footprint is currently undergoing characterization to determine the level of contamination and degree of remediation necessary to meet regulatory requirements. • In addition to potential contamination, areas of the footprint are uneven and not safe for foot traffic. • There is no drainage system for removing water from the footprint, including the remaining slab. **Trends** • Following characterization of the footprint, remedial actions will be defined and completed to meet regulatory requirements for final disposition of the building site. • Beyond the completion of remedial actions, additional work is anticipated to enable roadway access around the K-25 footprint and safe public access to those portions of the footprint that meet or exceed regulatory requirements.
Threats and Opportunities	**Threats** • Contamination may drive remedial actions requiring removal of portions of the original building slab, which would threaten its historic integrity. • There is at times standing water on the existing footprint slab (due to a lack of proper drainage). • There is the potential for erosion of the existing footprint slab. **Opportunities** • The K-25 Historic Interpretation Project, a separate effort underway by the Department of Energy, is preparing a design approach for delineating the K-25 Building Site with interpretive displays, a walking/biking trail, as well as a K-25 History Center, a viewing tower and equipment building that will complement the visitor experience at the K-25 Building Site. The Department of Energy is seeking input from the National Park Service to ensure that the K-25 Historic Interpretation Project provides a visitor experience consistent with NPS expectations for the parkwide visitor experience. • The National Historic Preservation Act is identified as an "applicable or relevant and appropriate requirement" in the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) documents prepared for the demolition of K-25, and CERCLA actions must comply with applicable or relevant and appropriate requirements. Hence, funding for final footprint disposition, facility construction and public access, including drainage, will be driven by the Comprehensive Environmental Response, Compensation, and Liability Act. • The K-25 virtual museum currently allows visitors virtual access to this park resource, as well as a robust tool to communicate the rich history of the K-25 site that spans more than 70 years.

Fundamental Resource or Value	Oak Ridge: K-25 Building Site
Existing Data and Plans Related to the FRV	• Secretary of the Interior's Report to the Advisory Council on Historic Preservation in accordance with section 213 of the National Historic Preservation Act. • Memorandum of agreement among the U.S. Department of Energy Oak Ridge Office of Environmental Management, Department of Energy Federal Preservation Officer, the Tennessee State Historic Preservation Office, the Advisory Council on Historic Preservation, the City of Oak Ridge, Tennessee, and the East Tennessee Preservation Alliance, Pursuant to 36 CFR Part 800.6(b)(2) for Decommissioning and Demolition of the K-25 Site and Interpretation of the East Tennessee Technology Park, on the Oak Ridge Reservation, Roane County, Tennessee. • Execution Plan for the Final Memorandum of Agreement Regarding Site Interpretation of the East Tennessee Technology Park. • Oak Ridge Environmental Information System. • Evaluation of Retention of the Concrete Slab Under the K-25 Building, Oak Ridge, Tennessee (DRAFT). • (Currently being drafted) Historic American Buildings Survey / Historic American Engineering Record documentation for the K-25 building. • Portal 4 Historic American Engineering Record documentation. • K-1037 Building Historic American Engineering Record documentation. • Oak Ridge Reservation Programmatic Agreement among DOE Oak Ridge Office, the Tennessee State Historic Preservation Officer and the Advisory Council on Historic Preservation concerning management of historic and cultural properties on the Oak Ridge Reservation, 1997. • DOE Oak Ridge Reservation Cultural Resource Management Plan Anderson and Roane Counties, 2005.
Data and/or GIS Needs	• Transfer GIS data from DOE (NPS and DOE). • Historic resource study (DOE).
Planning Needs	• Interpretive plan (NPS with DOE assistance).
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) • *Record of Decision for Soil, Buried Waste, and Subsurface Structure Actions in Zone 2, East Tennessee Technology Park, Oak Ridge, Tennessee* (DOE/OR/01-2161&D2) (Zone 2 ROD) • Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (PL 105-216) • Economy Act of 1933 (31 USC 1535 et seq.)

Fundamental Resource or Value	Oak Ridge: K-25 Building Site
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change" • Director's Policy Memorandum 14-02, "Climate Change and Stewardship of Cultural Resources" • Director's Policy Memorandum 15-01, "Addressing Climate Change and Natural Hazards for Facilities" **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 522.1 – Pricing of Departmental Materials and Services







Fundamental Resource or Value	Oak Ridge: X-10 Graphite Reactor
Related Significance Statements	Significance statements 1, 2, 3, 6, 7, and 9
Current Conditions and Trends	**Conditions** • The general metal building outer structure and roof are in good condition. • There are roof/wall leaks in a few isolated areas of the building not currently accessible to the public. • Open roof vents that were taken out of service many years ago allow birds to enter the building. • Paint is flaking from the ceiling in various locations. Paint flakes are currently being characterized for any hazardous constituents. • Currently vehicle access is restricted; arrangements can be made to accommodate special needs, as required. • Currently there are personnel access controls and restrictions to the building and the area due to potential hazards and facility conditions. • The following radiological conditions exist in the building: Radioactive Materials Area; fixed contamination on some floor areas; isolated rooms posted as "Contamination Area" and "High Contamination Area"; and equipment with internal contamination. • The building contains isolated rooms with the potential for lead, asbestos, and mold hazards. • There is a working materials elevator that has not been certified for passenger usage. • The facility is not fully Americans with Disabilities Act (ADA)-accessible. **Trends** • The facility is stable. However, ongoing surveillance and maintenance is required.

Fundamental Resource or Value	Oak Ridge: X-10 Graphite Reactor
Threats and Opportunities	**Threats** • Weather: high winds, severe rain or snow accumulations, which are likely to be exacerbated by climate change. • Birds nesting cause disruptions and biting/stinging insects negatively impact visitor/staff experience at the building site. • Burrowing animals and bird nesting in the structure via open roof vents impact its structural integrity and historic fabric. • The general age of the structure, and accompanying deterioration in pipe insulation, the roof, and some walls. **Opportunities** • An established, ongoing, surveillance and maintenance program is in place to maintain the general integrity of the building. • The existing, regularly scheduled U.S. Department of Energy's Oak Ridge Facilities Public Bus Tour. • There are established, pre-approved, routes and schedules in place for escorted tour access to some restricted portions of the building relevant to reactor operations. • A virtual tour could be developed to increase public access, including virtual access to portions of the building with physical access restrictions. • A number of simple, low cost improvements could make the facility more accessible (pursuing ADA compliance).
Existing Data and Plans Related to the FRV	• Site-Wide Programmatic Agreement for the Oak Ridge National Laboratory (ORNL) on the Oak Ridge Reservation, Roane County, Tennessee, among the DOE Oak Ridge Office, Tennessee State Historic Preservation Officer and the Advisory Council on Historic Preservation concerning the management of historical and cultural properties at the Oak Ridge National Laboratory (April 2005). • National Historic Preservation Act Historic Preservation Plan: Oak Ridge National Laboratory National, Oak Ridge, Tennessee (April 2004). • National Historic Landmark nomination for the Graphite Reactor. • Oak Ridge National Laboratory Interpretive Plan (January 2008). • Oak Ridge National Laboratory Machinery and Equipment Survey (January 2008). • Oak Ridge Reservation Programmatic Agreement among DOE Oak Ridge Office, the State Historic Preservation Officer and the Advisory Council on Historic Preservation concerning management of historical and cultural properties on the Oak Ridge Reservation (1997). • DOE Oak Ridge Reservation Cultural Resource Management Plan Anderson and Roane Counties (July 2005).
Data and/or GIS Needs	• Historic resource study (DOE).
Planning Needs	• Historic structure reports and cultural resource reports for Oak Ridge. • Interpretive plan (NPS with DOE assistance).

Fundamental Resource or Value	Oak Ridge: X-10 Graphite Reactor
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) • *CERCLA Record(s) of Decision for the Oak Ridge National Laboratory covering the Graphite Reactor.* • Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (PL 105-216) • Economy Act of 1933 (31 USC 1535 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change" • Director's Policy Memorandum 14-02, "Climate Change and Stewardship of Cultural Resources" • Director's Policy Memorandum 15-01, "Addressing Climate Change and Natural Hazards for Facilities" **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 433.1B – Maintenance Program for DOE Nuclear Facilities • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Oak Ridge: Y-12 Building 9731
Related Significance Statements	Significance statements 1, 2, 3, 6, 7, 9, and 10
Current Conditions and Trends	**Conditions** • The building structure is in fair condition, with some spalling concrete. • The facility's mechanical and electrical equipment are in poor condition. • The calutron structures are in good condition. • Clean up of excess materials and equipment in the facility is needed. • Some small scale mission operations will need to be relocated. • The Department of Energy allows irregular public access; more regular access may be feasible with existing mission relocation. **Trends** • The building structure is stable, with some recent roofing repairs to address water leaks. • The facility's mechanical systems (HVAC, etc.) continue to degrade.
Threats and Opportunities	**Threats** • Further roof leaks lead to continued degradation of structure and facility systems. • The ability to identify alternate locations for existing mission operations and move these from the building in a timely manner. **Opportunities** • The facility is eligible to obtain national historic landmark status. • As part of park planning and implementation, the National Nuclear Security Administration can develop a detailed plan for stabilization, preservation, and facility improvements. • As part of park implementation, the National Nuclear Security Administration can seek and obtain additional funding for stabilization, preservation, and facility improvements. • As part of park planning and implementation, the agencies can explore opportunities to provide more frequent public access. • The Department of Energy / National Nuclear Security Administration is working on virtual access to Building 9731 in furtherance of enhanced public access in the near term.
Existing Data and Plans Related to the FRV	• Site-Wide Programmatic Agreement among the DOE Oak Ridge Office, National Security Administration, the Tennessee Historic Preservation Officer and the Advisory Council on Historic Preservation concerning the management of historical and cultural properties at the Y-12 National Security Complex (September 2003). • National Historic Preservation Act Historic Preservation Plan, Y-12 National Security Complex (September 2003). • Y-12 National Security Complex Interpretive Plan (November 2004). • Y-12 National Security Complex Machinery and Equipment Survey (September 2007). • Oak Ridge Reservation Programmatic Agreement among DOE Oak Ridge Office, the State Historic Preservation Officer and the Advisory Council on Historic Preservation concerning management of historical and cultural properties on the Oak Ridge Reservation (1997). • DOE Oak Ridge Reservation Cultural Resource Management Plan Anderson and Roane Counties (July 2005).
Data and/or GIS Needs	• None identified.
Planning Needs	• Historic structure reports and cultural resource reports for Oak Ridge. • Interpretive plan (NPS with DOE assistance).

Fundamental Resource or Value	Oak Ridge: Y-12 Building 9731
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) • National Nuclear Security Administration Act (50 USC 2401 et seq.) • *CERCLA Record(s) of Decision for Y-12 National Security Complex* • Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (PL 105-216) • Economy Act of 1933 (31 USC 1535 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 433.1B – Maintenance Program for DOE Nuclear Facilities • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Oak Ridge: Y-12 Building 9204-3
Related Significance Statements	Significance statements 1, 2, 3, 6, 7, and 9
Current Conditions and Trends	**Conditions** • The Actinide Facility located in the northeast quadrant of the building consists of several highly contaminated radiological areas and glove box systems. These systems and areas remain under negative pressure and require continued surveillance and maintenance. • For the last 10-plus years, the only maintenance performed is that which has been required to ensure the integrity of the building envelope and the negative pressure systems associated with the Actinide Facility. The former goal of this maintenance is continued safety until eventual disposition; that goal will need reevaluation given the new national park requirements for the facility. • Some water issues exist in the basement but are being addressed as the problem has become known over the past few years. The groundwater leakage requires close monitoring and regular response. • Flooding in the basement has spread radiological contamination on the floor. Efforts are underway to determine the extent of the problem. **Trends** • The facility continues to suffer from irregular water infiltration. • Due in part to issues with water infiltration, potential future public access planning and artifact cataloguing and review, radiological contamination monitoring and characterization is required.
Threats and Opportunities	**Threats** • The radiological contamination in the Actinide Facility and basement are a significant concern, and contribute to restricted facility access. • Beta-3's location in a protected area and proximity to ongoing DOE mission activities additionally impede access. • No funding is currently available to address contamination issues or prepare the facility for public access. **Opportunities** • The best opportunity for near-term interpretation is a virtual tour of Beta-3. • Beta-3 offers the only opportunity in the world to display beta calutrons to visitors in their original Manhattan Project setting. • The facility is eligible to obtain national historic landmark status.
Existing Data and Plans Related to the FRV	• Site-Wide Programmatic Agreement among the DOE Oak Ridge Office, National Security Administration, the Tennessee Historic Preservation Officer and the Advisory Council on Historic Preservation concerning the management of historical and cultural properties at the Y-12 National Security Complex (September 2003). • National Historic Preservation Act Historic Preservation Plan, Y-12 National Security Complex (September 2003). • Y-12 National Security Complex Interpretive Plan (November 2004). • Y-12 National Security Complex Machinery and Equipment Survey (September 2007). • Oak Ridge Reservation Programmatic Agreement among DOE Oak Ridge Office, the State Historic Preservation Officer and the Advisory Council on Historic Preservation concerning management of historical and cultural properties on the Oak Ridge Reservation (1997). • DOE Oak Ridge Reservation Cultural Resource Management Plan Anderson and Roane Counties (July 2005).
Data and/or GIS Needs	• None identified.

Fundamental Resource or Value	Oak Ridge: Y-12 Building 9204-3
Planning Needs	• Historic structure reports and cultural resource reports for Oak Ridge. • Interpretive plan (NPS with DOE assistance).
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) • National Nuclear Security Administration Act (50 USC 2401 et seq.) • *CERCLA Record(s) of Decision for Y-12 National Security Complex* • Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 (PL 105-216) • Economy Act of 1933 (31 USC 1535 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 433.1B – Maintenance Program for DOE Nuclear Facilities • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Los Alamos: Pond Cabin (TA-18-29)
Related Significance Statements	Significance statements 1, 2, 4, 6, 7, 9
Current Conditions and Trends	**Conditions** • The cabin has deteriorating wooden elements including its wall logs and roof supports. • Rodent droppings are prevalent throughout. • Sections of chinking (both wood and adobe) are absent. • Some of the window panes are broken and frames are in overall poor condition. • The chimney has white staining indicating possible water damage from interior roof leaks. • The logs making up the south wall of the cabin have compressed and the wall has a noticeable slump. **Trends** • The cabin is currently stable although it needs a complete structural assessment. • The existing artifacts (wooden furniture, heating stove, and metal bed frame) within the cabin are stable and protected but will need a full assessment.

Fundamental Resource or Value	Los Alamos: Pond Cabin (TA-18-29)
Threats and Opportunities	**Threats** • Wildfire risk is elevated due to grass and vegetation near the cabin, and is likely to be exacerbated by climate change. • Occasional high winds cause damage to corrugated roofing panels. • Rodents and other animals can enter the building (risk of hantavirus). • The cabin is located in a canyon bottom setting within a floodplain. Climate change increases threat of extreme storms and flooding. • Increased interior visitation due to the development of the cabin as a park site may threaten its structural integrity. • Elk graze near the cabin and could damage the property. • Surveillance of the cabin is being conducted only on a quarterly basis and maintenance needs have not been addressed for many years. • Park visitors may deface the cabin (initials carved into the logs, removal of souvenirs, etc.). **Opportunities** • Restoration work at the cabin could result in preservation training opportunities, including partnering with the NPS Western Center for Historic Preservation. • Work at the cabin could result in data sharing with other preservation groups and NPS units. • The preservation of the cabin would enhance the park's historical interpretation efforts. The cabin can be used to tell the story of the Pajarito Plateau's pre-Manhattan Project history as well as its wartime and Cold War history. • Restoration of the cabin and the development of park infrastructure would result in enhanced public access.
Existing Data and Plans Related to the FRV	• A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico, Los Alamos National Laboratory, LA-UR-04-8964. • Habitat management plan. • Biological resource management plan. • National Historic Landmark Nomination – Los Alamos Scientific Laboratory (LASL) NHL District (Working Draft of NHL Revision), Los Alamos National Laboratory, LA-UR 12-00387. • Of Critical Importance: An Assessment of Historic Buildings at Pajarito Site (TA-18), Los Alamos National Laboratory, LA-UR-09-03456. • The History and Legacy of the Manhattan Project at Los Alamos National Laboratory, Los Alamos National Laboratory, LA-UR-15-23560. • Sentinels of the Atomic Dawn: A Multiple-Property Evaluation of the Remaining Manhattan Project Properties at Los Alamos (1942–1946), Los Alamos National Laboratory, LA-UR-03-0726. • Decision Support Application (GIS data).
Data and/or GIS Needs	• Historic resource study.
Planning Needs	• Historic structure reports and cultural resource reports for Los Alamos.

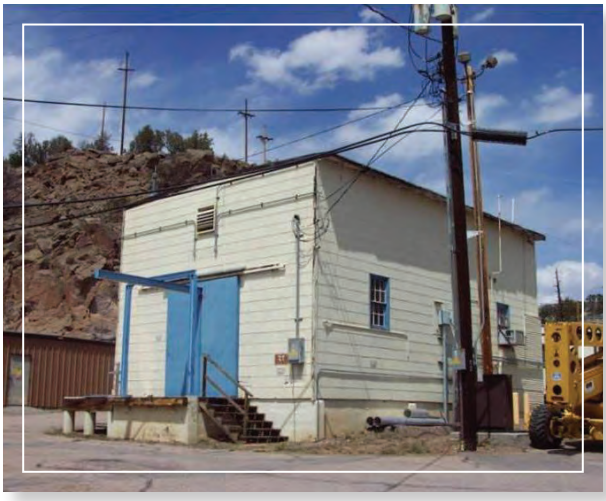
Fundamental Resource or Value	Los Alamos: Pond Cabin (TA-18-29)
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change" • Director's Policy Memorandum 14-02, "Climate Change and Stewardship of Cultural Resources" • Director's Policy Memorandum 15-01, "Addressing Climate Change and Natural Hazards for Facilities" **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Los Alamos: Battleship Bunker (TA-18-2)
Related Significance Statements	Significance statements 1, 2, 4, 6, 7, and 9
Current Conditions and Trends	**Conditions** • Poor with deteriorating and spalling exterior concrete surfaces (threatened building). • Rodent droppings and nests are prevalent throughout the interior. • The entrance door is damaged. **Trends** • Without stabilization, concrete spalling and deterioration will continue. • There is an emergency need for concrete stabilization. • Access is increasingly limited due to door damage.
Threats and Opportunities	**Threats** • Rodent issues. • Freeze, thaw, and water damage to concrete. • Infrequent surveillance and maintenance. • Potential visitor vandalism. **Opportunities** • Restoration work at the bunker could result in preservation training opportunities, including partnering with the NPS Western Center for Historic Preservation. • Work at the bunker could result in data sharing with other preservation groups and NPS units. • Possible tour beyond park boundary to second battleship bunker. • Interpretation and tours of adjacent Cold War properties. • Greater public access.
Existing Data and Plans Related to the FRV	• A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico, Los Alamos National Laboratory, LA-UR-04-8964. Habitat management plan. • Biological resource management plan. • National Historic Landmark Nomination – Los Alamos Scientific Laboratory (LASL) NHL District (Working Draft of NHL Revision), Los Alamos National Laboratory, LA-UR 12-00387.

Fundamental Resource or Value	Los Alamos: Battleship Bunker (TA-18-2)
Existing Data and Plans Related to the FRV (continued)	• Of Critical Importance: An Assessment of Historic Buildings at Pajarito Site (TA-18), Los Alamos National Laboratory, LA-UR-09-03456. • The History and Legacy of the Manhattan Project at Los Alamos National Laboratory, Los Alamos National Laboratory, LA-UR-15-23560. • Sentinels of the Atomic Dawn: A Multiple-Property Evaluation of the Remaining Manhattan Project Properties at Los Alamos (1942–1946), Los Alamos National Laboratory, LA-UR-03-0726. • Decision Support Application (GIS data).
Data and/or GIS Needs	• Historic resource study.
Planning Needs	• Historic structure reports and cultural resource reports for Los Alamos.
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Los Alamos: Slotin Building (TA-18-1)
Related Significance Statements	Significance statements 1, 2, 4, 6, 7, 8, 9, and 10
Current Conditions and Trends	**Conditions** • There are deteriorating wooden elements. • Stairs and loading dock are failing. • Broken asbestos shingles need to be replaced. • There are broken and deteriorating windows. • There is possible roof damage. • Bathroom is not in working condition. • There is exterior wall damage. **Trends** • Stable, although needs complete structural assessment. • Existing artifacts are intact but need assessment.
Threats and Opportunities	**Threats** • Wildfire. • Occasional high winds are a threat to roof and siding. • Bird entry and nesting. • Increased visitation may threaten structural integrity. • Infrequent surveillance and maintenance. • Potential for visitor vandalism. **Opportunities** • Restoration work at the Slotin Building could result in preservation training opportunities, including partnering with NPS historic preservation crews. • Work at the Slotin Building could result in data sharing with other preservation groups and NPS units. • Greater public access.
Existing Data and Plans Related to the FRV	• A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico, Los Alamos National Laboratory, LA-UR-04-8964. • Habitat management plan. • Biological resource management plan. • National Historic Landmark Nomination – Los Alamos Scientific Laboratory (LASL) NHL District (Working Draft of NHL Revision), Los Alamos National Laboratory, LA-UR 12-00387. • Of Critical Importance: An Assessment of Historic Buildings at Pajarito Site (TA-18), Los Alamos National Laboratory, LA-UR-09-03456. • The History and Legacy of the Manhattan Project at Los Alamos National Laboratory, Los Alamos National Laboratory, LA-UR-15-23560. • Sentinels of the Atomic Dawn: A Multiple-Property Evaluation of the Remaining Manhattan Project Properties at Los Alamos (1942–1946), Los Alamos National Laboratory, LA-UR-03-0726. • Decision Support Application (GIS data).
Data and/or GIS Needs	• Historic resource study.
Planning Needs	• Historic structure reports and cultural resource reports for Los Alamos.

Fundamental Resource or Value	Los Alamos: Slotin Building (TA-18-1)
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 522.1 – Pricing of Departmental Materials and Services



Fundamental Resource or Value	Los Alamos: Gun Site Buildings; Laboratory and Shop (TA-8-1); Shop and Storage (TA-8-2); Diesel Generator Building (TA-8-3)
Related Significance Statements	Significance statements 1, 2, 4, 6, 7, and 9
Current Conditions and Trends	**Conditions** • Gun Site is in stable condition. • There have been recent concrete repairs to parapet. • Recent drainage improvement and landscaping completed on roof. • There are missing architectural features (tower and walkway). • There is possible water damage to interior/exterior concrete. • There is animal activity within the buildings. • There are damaged and deteriorating doors. • Above housekeeping levels of lead are present inside buildings. • Sampling and analysis needed for laboratory workspace that is post Manhattan Project. • There is poor interior lighting and no electricity. • Roadway between Buildings 1 and 3 has water damage. • Gun emplacements are in a ruined state. • The field near gun emplacements contains buried wartime artifacts. **Trends** • Buildings are stable although recent restoration work needs routine monitoring. • Some building access is limited due to damaged or missing doors.

Fundamental Resource or Value	Los Alamos: Gun Site Buildings; Laboratory and Shop (TA-8-1); Shop and Storage (TA-8-2); Diesel Generator Building (TA-8-3)
Threats and Opportunities	**Threats** • Rodent or other animal issues. • Freeze, thaw, and water damage. • Flooding/poor drainage. • A drain pipe with possible high explosive contamination is located at the site and is a solid waste management unit. • Hazards may exist in gun emplacement field area including additional solid waste management units. • Environmental characterization and cleanup may be required. • Infrequent surveillance and maintenance. • Potential for visitor vandalism. **Opportunities** • Restoration work at Gun Site could result in preservation training opportunities, including partnering with NPS historic preservation crews. • Work at the Gun Site could result in data sharing with other preservation groups and NPS units. • Greater public access.
Existing Data and Plans Related to the FRV	• A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico, Los Alamos National Laboratory, LA-UR-04-8964. • Habitat management plan. • Biological resource management plan. • National Historic Landmark Nomination – Los Alamos Scientific Laboratory (LASL) NHL District (Working Draft of NHL Revision), Los Alamos National Laboratory, LA-UR 12-00387. • Historic Preservation Assessment and Recommendation Report for the Gun Site Restoration Project, Los Alamos National Laboratory, LA-UR-08-05177. • From Ranching to Radiography: An Assessment of Historic Buildings at Anchor West Site (TA-8), Los Alamos National Laboratory, LA-UR-08-05335. • The History and Legacy of the Manhattan Project at Los Alamos National Laboratory, Los Alamos National Laboratory, LA-UR-15-23560. • Sentinels of the Atomic Dawn: A Multiple-Property Evaluation of the Remaining Manhattan Project Properties at Los Alamos (1942–1946), Los Alamos National Laboratory, LA-UR-03-0726. • Decision Support Application (GIS data).
Data and/or GIS Needs	• Historic resource study.
Planning Needs	• Historic structure reports and cultural resource reports for Los Alamos.

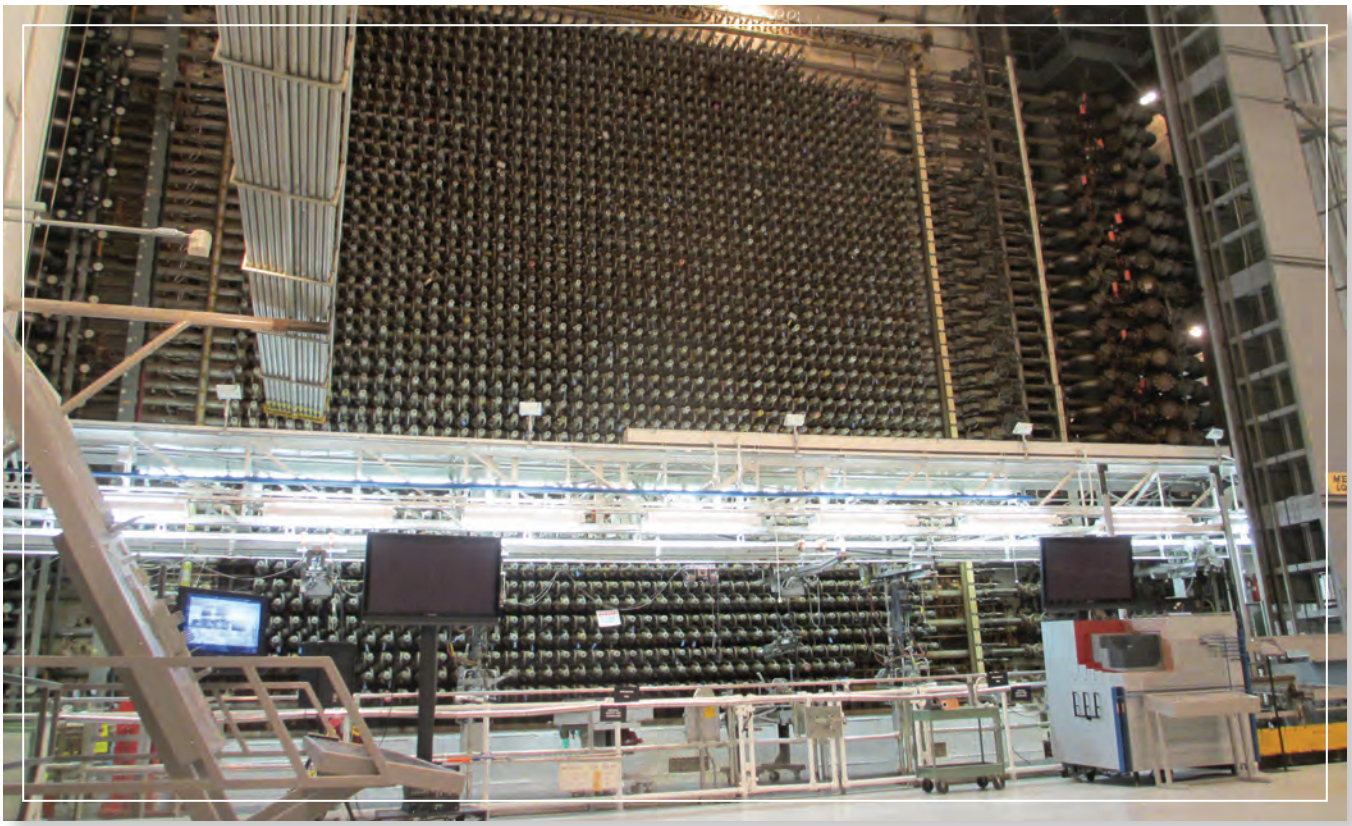
Fundamental Resource or Value	Los Alamos: Gun Site Buildings; Laboratory and Shop (TA-8-1); Shop and Storage (TA-8-2); Diesel Generator Building (TA-8-3)
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Los Alamos: Gun Site; Portable Guard Shack (TA-8-172)
Related Significance Statements	Significance statements 2, 4, and 6
Current Conditions and Trends	**Conditions** • The guard shack is in poor condition. • There are deteriorating wooden elements. • There are broken and deteriorating windows. • There is possible roof damage. • Lead paint may be present. **Trends** • It is deteriorating and needs repair/restoration.
Threats and Opportunities	**Threats** • Sits within a floodplain/arroyo. • Bird/rodents entry and nesting. • Increased visitation may threaten structural integrity. • Infrequent surveillance and maintenance. • Potential for visitor vandalism. **Opportunities** • Preservation training opportunities, including partnering with existing NPS carpentry crew. • Rehabilitation work could result in data sharing with other preservation groups and NPS units. • Enhanced public access.

Fundamental Resource or Value	Los Alamos: Gun Site; Portable Guard Shack (TA-8-172)
Existing Data and Plans Related to the FRV	• A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico, Los Alamos National Laboratory, LA-UR-04-8964. • Habitat management plan. • Biological resource management plan. • National Historic Landmark Nomination – Los Alamos Scientific Laboratory (LASL) NHL District (Working Draft of NHL Revision), Los Alamos National Laboratory, LA-UR 12-00387. • The History and Legacy of the Manhattan Project at Los Alamos National Laboratory, Los Alamos National Laboratory, LA-UR-15-23560. • Decision Support Application (GIS data).
Data and/or GIS Needs	• Historic resource study.
Planning Needs	• Historic structure reports and cultural resource reports for Los Alamos.
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Los Alamos: V-Site; Assembly Building (High Bay) (TA-16-516); Workshop (TA-16-517)
Related Significance Statements	Significance statements 1, 2, 4, 6, 7, and 9
Current Conditions and Trends	**Conditions** • V-Site is stable. • The French drain is failing. • Post-restoration soil settling and French drain failure has damaged the earthen berms. • There are deteriorating windows. • Some asbestos shingles are damaged and need to be replaced. • Lead paint may exist. • Exterior concrete retaining wall and former building foundations are failing. • Hubbellite surfaces are deteriorating. • No-peek fence, doors, and windows need to be painted or oiled. • There are burned artifacts on site that need to be assessed. • Former radiography building berms and structure are deteriorating. • Located within high explosives area and nearby roads are used to transport hazardous materials. **Trends** • Recent restoration work was not monitored as part of routine facility walk downs, and conditions are deteriorating.
Threats and Opportunities	**Threats** • Wildfire. • Post fire damage. • Located inside high explosives operations area. • Bird/rodents entry and nesting. • Increased visitation may threaten structural integrity. • Infrequent surveillance and maintenance. • Elk in the area cause damage to structures. • Potential visitor vandalism. **Opportunities** • Restoration work at the V-Site could result in preservation training opportunities, including partnering with NPS historic preservation crews. • Work could result in data sharing with other preservation groups and NPS units. • Greater public access.
Existing Data and Plans Related to the FRV	• A Plan for the Management of the Cultural Heritage at Los Alamos National Laboratory, New Mexico, Los Alamos National Laboratory, LA-UR-04-8964. • Habitat management plan. • Biological resource management plan. • National Historic Landmark Nomination – Los Alamos Scientific Laboratory (LASL) NHL District (Working Draft of NHL Revision), Los Alamos National Laboratory, LA-UR 12-00387. • The History and Legacy of the Manhattan Project at Los Alamos National Laboratory, Los Alamos National Laboratory, LA-UR-15-23560. • Sentinels of the Atomic Dawn: A Multiple-Property Evaluation of the Remaining Manhattan Project Properties at Los Alamos (1942–1946), Los Alamos National Laboratory, LA-UR-03-0726. • Decision Support Application (GIS data).

Fundamental Resource or Value	Los Alamos: V-Site; Assembly Building (High Bay) (TA-16-516); Workshop (TA-16-517)
Data and/or GIS Needs	• Historic resource study.
Planning Needs	• Historic structure reports and cultural resource reports for Los Alamos.
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • Nuclear Non-Proliferation Act of 1978 (22 USC 3201 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 433.1B – Maintenance Program for DOE Nuclear Facilities • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services



Fundamental Resource or Value	Hanford: B Reactor
Related Significance Statements	Significance statements 1, 2, 5, 6, 7, 8, 9, and 10
Current Conditions and Trends	**Conditions** • The building is currently in fair condition and is being preserved for long-term public access. • There is a significant amount of deferred maintenance on the building, including a faulty and leaking roof. • While much of the building has been cleaned up to enable public access, the "back side" of the facility (where irradiated fuel was pushed out of the reactor and into cooling pools) requires a significant amount of cleanup and stabilization prior to public access. • The building electrical system dates to 1940s, and lacks sufficient capacity for broad public access. There is also no HVAC system, which limits tour accessibility and exhibit options, and also causes significant wear and tear on the building. **Trends** • The building is stable but requires an increase in routine and/or preventative maintenance. • The Department of Energy has completed detailed design for a project to replace the roof and provide integral structural and seismic improvements. • The Department of Energy has provided seasonal public access since 2009; available tours fill very quickly and remain in high demand from visitors across the country and around the world. • Storytelling to date has focused on the construction and operation of the reactor in the context of Hanford's role in the Manhattan Project. Visitors have expressed interest in understanding the impact and legacy of nuclear weapons as well as the broad World War II context for the Manhattan Project.

Fundamental Resource or Value	Hanford: B Reactor
Threats and Opportunities	**Threats** • Lack of an HVAC system leads to thermal expansion/contraction of the building envelope, stressing grout joints. • The building has water leaks, bird nesting, and animal intrusion. • Although the facility sits in a cleaned-up area, there is the potential for a broad-scale emergency on the Hanford Site that would require protective measures for visitors and staff. • Potential for wildfire and destructive fire control methods. **Opportunities** • There have been public tours since 2009 (~10,000 visitors per year); access can be increased. • The facility is in an area designated for "high density recreation" use and development in the 2000 Hanford Site Comprehensive Land Use Plan Record of Decision. • Large cleaned-up areas around the reactor (outside the facility fence line) may provide opportunities to site parking or other visitor infrastructure. • The facility is large enough to also host some interpretation of the critical role of the T Plant Chemical Separations Plant and other key facilities in producing plutonium.
Existing Data and Plans Related to the FRV	• Historic American Engineering Record form, May 2001. • National Historic Landmark Documentation, August 2008. • "B Reactor," National Register of Historic Places nomination form, U.S. Department of the Interior, National Park Service, Richland, Washington. • Hanford Site Historic District: History of the Plutonium Production Facilities 1943–1990, Hanford Cultural & Historical Resources Program, DOE/RL, 2003. (See references and bibliography for source documents for selected themes). • National Register of Historic Places Multiple Property Documentation Form - - Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington, DOE/RL-97-02, Rev. 0, Department of Energy, Richland, Washington. • Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS-0222-F) and Record of Decision, 1999. • Programmatic Agreement Among the U.S. Department of Energy, Richland Operations Office, the Advisory Council on Historic Preservation, and the Washington State Historic Preservation Office for the Maintenance, Deactivation, Alteration, and Demolition of the Built Environment of the Hanford Site, Washington, DOE/RL-96-77. • Hanford Site Project and Cold War Era Historic District Treatment Plan. • Mitigation of selected Hanford Site Manhattan Project and Cold War Era Artifacts. • Manhattan Project and Cold War Artifacts status and index. • 105-B Building Seismic, Structural and Historic Preservation Consulting Services, WJE Report No. 2009.5322, 7/10/2010. • 105-B Building Field Observations and Concrete Channel Plank Retrofit Testing, WJE Report No. 2010.4760, 3/4/2015. • 105-B Building Structural Roof Rehabilitation Design Drawings and Construction Specification, WJE Project No. 2010.4760, 7/28/2015. • Existing images, including historic maps, drawings and photographs. • Manhattan Project Buildings and Facilities at the Hanford Site: A Construction History. • Hanford Engineer Works History of Operations (DuPont). • B Area Technical Baseline Report.

Fundamental Resource or Value	Hanford: B Reactor
Data and/or GIS Needs	• Historic resource study. • Document Manhattan Project-related archives and artifacts (DOE with NPS assistance).
Planning Needs	• Historic structure reports and cultural resource reports for Hanford.
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • National Environmental Policy Act of 1969 (42 USC 4321) • Clean Air Act of 1963 (42 USC 7401) • Resource Recovery and Conservation Act of 1976 (42 USC 6901 et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 433.1B – Maintenance Program for DOE Nuclear Facilities • DOE Order 436.1 – Departmental Sustainability • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Hanford: Bruggemann's Agricultural Complex Warehouse
Related Significance Statements	Significance statements 2, 5, and 6
Current Conditions and Trends	**Conditions** • The Bruggemann warehouse is the last remaining building from the once thriving 530-acre agricultural complex. It is in poor condition with an extensively deteriorated exterior envelope and structural system. It is surrounded by aboveground irrigation features (weir boxes, ditches, pipes, and canals) in deteriorating condition, as well as aboveground foundations and structures in ruin. • The area also has numerous buried or subsurface structures and features, as well as associated archaeological materials in unknown condition. • Surface artifacts in mostly poor condition are visible around the warehouse, and extending across the large historic property. **Trends** • Erosion/deterioration of features in ruin. • The structure's poor, unstable condition could lead to structural failure. • Loss of surface artifacts, particularly wood and other organic materials. • Lack of knowledge about subsurface features and artifacts. • Loss of knowledge as early settlers pass. • Access could be limited at times due to wildlife restrictions. • The facility is part of an annual tour program that highlights the pre-Manhattan Project historic facilities. Visitors remain outside the facility fence and utilize pre-existing roads. Public demand for the tours exceeds current capacity and there is public interest in seeing more of the property. Stabilization and/or improvements may enable public access to the interior of the building.
Threats and Opportunities	**Threats** • No current program for building maintenance or stabilization. • Weather, high winds, erosion, gravity. • Potential impact of visitor use on buried deposits, artifacts, and surface features. • Potential collection of surface artifacts or objects. • Bird nesting and burrowing animals threaten the structure and buried archeological resources; deer and elk cause damage to surfaces. • Potential for wildfire and destructive fire control methods. • Potential development of infrastructure could threaten archeological resources. • Potential for unauthorized access to the historic site. **Opportunities** • Planned stabilization and improvement. Ability to tailor improvement plans to how the facility will be used as part of the park (e.g., as a ruin vs. as a visitor contact station). • Facility and original homestead site are located within a large area zoned for "low density recreation" use and development that stretches all the way from the nearby public highway to B Reactor as written in the Hanford Site Comprehensive Land Use Plan and Record of Decision. • Interpretation of ranch/agricultural history and early settlement. • Ethnohistoric investigation of pre-contact habitation, early settler life, transition from private land to federal ownership. • Preservation and interpretation of related features in the historic site to expand public understanding and visitor experience. • Archeological investigation.

Fundamental Resource or Value	Hanford: Bruggemann's Agricultural Complex Warehouse
Existing Data and Plans Related to the FRV	• State of Washington Archeological Site Form (1/21/2000). • National Register of Historic Places Registration Form, U.S. Department of the Interior, National Park Service, Richland, Washington (5/1/2000). • "Request for Determination of Eligibility for Site HT-98-039," Bruggemann Agricultural Complex – Riverlands Ranch. Department of Energy, Pacific Northwest National Laboratory, Richland, Washington, 2000. • Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS-0222-F) and Record of Decision, 1999. • Proposed approach and architectural drawings for future rehabilitation by Meier Architecture and Engineering, Inc. • Site conditions monitoring records. • Existing images, including historic maps, drawings, and photographs. • The Hanford and White Bluffs Agricultural Landscape: Evaluation for Listing in the National Register of Historic Places (Draft 2005 – not for public release). • "Euro-American Resettlement of the Hanford Site," in National Register of Historic Places Multiple Property Documentation Form – Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington, DOE/RL-97-02, Rev. 0, Department of Energy, Richland, WA, 1997.
Data and/or GIS Needs	• National Register of Historic Places documentation (DOE with NPS assistance). • Document pre-Manhattan Project and Manhattan Project-related archives and artifacts (DOE with NPS assistance). • Historic resource study (DOE). • Ethnographic overview, assessment, and inventory (NPS and DOE).
Planning Needs	• Historic structure reports and cultural resource reports for Hanford.
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • National Environmental Policy Act of 1969 (42 USC 4321) • Clean Air Act of 1963 (42 USC 7401) • Resource Recovery and Conservation Act of 1976 (42 USC 6901 et seq.) • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • Executive Order 13007, "Indian Sacred Sites" • Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 USC 3001 et seq.) • Archaeological Resources Protection Act (Public Law 96-95; 16 USC 470aa et seq.)

Fundamental Resource or Value	Hanford: Bruggemann's Agricultural Complex Warehouse
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* • Department of the Interior Policy on Consultation with Indian Tribes **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Hanford: White Bluffs Bank
Related Significance Statements	Significance statements 2, 5, and 6
Current Conditions and Trends	**Conditions** • The bank is the last remaining building in the historic town of White Bluffs. A single structure constructed in 1907, it was in very poor condition (including a partial wall collapse) prior to the start of stabilization and rehabilitation work in 2014. Rehabilitation will be complete in 2016. • The facility boundary (as well as the surrounding area) also includes aboveground landscape features (e.g., sidewalks) and structures in poor condition, buried or subsurface structures and features in unknown condition, and associated archeological materials in unknown condition. • The bank is a contributing element of a national register-eligible historic district (the White Bluffs Historic District) that is also in poor condition with no current plans for treatment. **Trends** • There is continued erosion/deterioration of features in ruin. • Surface archeological artifacts at risk for theft or damage. • Loss of knowledge as early settlers pass. • Lack of knowledge about subsurface features and artifacts. • Access could be occasionally limited due to wildlife restrictions. • The facility is currently part of an annual tour program that highlights the pre-Manhattan Project historic facilities. Visitors remain outside the facility fence and use pre-existing roads. Public demand for the tours exceeds current capacity and there is public interest in seeing more of the property.

Fundamental Resource or Value	Hanford: White Bluffs Bank
Threats and Opportunities	**Threats** • There is no current plan for preservation and maintenance of historic, archeological and landscape features (inside facility boundary or in surrounding historic district). • Weather, high winds, erosion, gravity. • Potential impact of visitor use on buried deposits, artifacts, and surface features (damage or theft) and potential collection of surface artifacts or objects. • Potential for wildfire and destructive fire control methods. • The building lacks an HVAC system, and there is concern that the building will deteriorate faster than it would if it had interior climate control. • Potential development of infrastructure could threaten archeological resources. **Opportunities** • Ongoing stabilization and rehabilitation of historic and landscape features. • Interpretation of agricultural and early settlement/town building history. • Expansion of public tours to include facility interior and nearby associated elements of the historic district. • Ethnohistoric investigation of pre-contact habitation, early settler life, transition from private land to federal ownership. • Preservation and interpretation of related features in the historic district to expand public understanding and visitor experience. • Archeological investigation.
Existing Data and Plans Related to the FRV	• Historic Property Inventory Form (9/2/93). • State of Washington Archaeological Site Form (7/25/95; 5/28/10; 1/27/11; 2/8/11; 2/9/11; 2/11/11). • National Register of Historic Places Registration Form (2010). • Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS-0222-F) and Record of Decision, 1999. • First Bank of White Bluffs Recommendations for Historic Treatment, WJE Report No. 2012.3465, 5/2/2013. • First Bank of White Bluffs Historic Rehabilitation Design Drawings and Construction Specification, WJE Project No. 2012.3465, 6/2/2014. • The Hanford and White Bluffs Agricultural Landscape: Evaluation for Listing in the National Register of Historic Places (Draft 2005 – not for public release). • "Euro-America American Resettlement of the Hanford Site," in National Register of Historic Places Multiple Property Documentation Form – Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington, DOE/RL-97-02, Rev. 0, Department of Energy, Richland, WA, 1997. • Existing images, including historic maps, drawings and photographs.
Data and/or GIS Needs	• National Register of Historic Places documentation (DOE with NPS assistance). • Document pre-Manhattan Project and Manhattan Project-related archives and artifacts (DOE with NPS assistance). • Ethnographic overview, assessment, and inventory (NPS and DOE).
Planning Needs	• Historic structure reports and cultural resource reports for Hanford.

Fundamental Resource or Value	Hanford: White Bluffs Bank
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • National Environmental Policy Act of 1969 (42 USC 4321) • Clean Air Act of 1963 (42 USC 7401 et seq.) • Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • Executive Order 13007, "Indian Sacred Sites" • Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 USC 3001 et seq.) • Archaeological Resources Protection Act (Public Law 96-95; 16 USC 470aa et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* • Department of the Interior Policy on Consultation with Indian Tribes **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Hanford: Hanford High School
Related Significance Statements	Significance statements 2, 5, 6
Current Conditions and Trends	**Conditions** • The Hanford High School, constructed in 1916, is one of two remaining buildings from the historic Town of Hanford. • The building consists of standing concrete walls in ruin condition. The two-story portion of the building retains its roof and floors; the gymnasium portion of the building is open-air and absent any flooring. • Around the high school there are aboveground landscape features and structures in poor condition. There are also buried/subsurface structures and features and archeological materials in unknown condition. • The facility is a contributing element of the Town of Hanford and Hanford Construction Camp Historic District, which is eligible for listing in the National Register of Historic Places. The entire district is in poor condition with no current plans for treatment. • Access roads are in poor condition, some of which are contributing elements. **Trends** • Lack of knowledge about subsurface features and artifacts. • Loss of knowledge as early settlers pass. • Access sometimes limited seasonally due to wildlife restrictions. • The facility is part of an annual tour program that highlights the pre-Manhattan Project historic facilities. Visitors remain outside the facility fence and use pre-existing roads. Public demand for the tours exceeds current capacity and there is public interest in seeing more of the property. Stabilization of the facility may allow for interior public tour access and/or more public tours.

Fundamental Resource or Value	Hanford: Hanford High School
Threats and Opportunities	**Threats** • Potential for structural collapse. • There is no current plan for preservation and maintenance of historic, archeological and landscape features (inside the facility boundary and in the surrounding historic district) allows for continued deterioration of both the building and its historic setting. • A proposed project to replace/modernize an existing commercial power line just outside the boundary of the park resource (and within the historic district) could cause impacts on park elements including viewshed and the historic district surrounding the building. • Potential for illegal collection of surface archeological artifacts or objects. • Potential for wildfire and destructive fire control methods. • Potential development of infrastructure could threaten archaeological resources. • Bird nesting and burrowing animals threaten the structure and buried archeological resources. **Opportunities** • Stabilization to allow visitors to enter the interior of the structure. • Interpretation of community history. • Interpretation of early settlement/town building, and broader themes of public education in rural communities. • Ethnohistoric investigation of pre-contact habitation, early settler life, transition from private land to federal ownership. • Overlap of the Town of Hanford and the Hanford Construction Camp provides ability to interpret the takeover of the town and its infrastructure by the U.S. Army Corps of Engineers for the Manhattan Project. • Facility is within land zoned for low-intensity recreation use and development in the Hanford Site Comprehensive Land Use Plan Record of Decision. • Expansion of public tours. • Preservation and interpretation of related features in the historic district to expand public understanding and visitor experience. • Archeological investigation.
Existing Data and Plans Related to the FRV	• Historic Property Inventory Form (7/31-8/4/2001). • State of Washington Archaeological Site Form (4/26/2005). • Town of Hanford and Hanford Construction Camp Historic District document. • National Register of Historic Places Registration Form (2010). • Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS-0222-F) and Record of Decision, 1999. • The Hanford and White Bluffs Agricultural Landscape: Evaluation for Listing in the National Register of Historic Places, 2005 Draft – no public release. • "Euro-America American Resettlement of the Hanford Site," in National Register of Historic Places Multiple Property Documentation Form – Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington, DOE/RL-97-02, Rev. 0, Department of Energy, Richland, WA, 1997. • Hanford High School Stabilization Study, prepared by Pacific Northwest National Laboratory for DOE/RL, July 2001. • "Hanford High School," Department of Archaeology & Historic Preservation Historic Property Inventory Form. Prepared by Pacific Northwest National Laboratory for DOE/RL, July 2001. • Existing images, including historic maps, drawings and photographs.
Data and/or GIS Needs	• National Register of Historic Places documentation (DOE with NPS assistance). • Document pre-Manhattan Project and Manhattan Project-related archives and artifacts (DOE with NPS assistance). • Ethnographic overview, assessment, and inventory (NPS and DOE).

Fundamental Resource or Value	Hanford: Hanford High School
Planning Needs	• Historic structure reports and cultural resource reports for Hanford.
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • National Environmental Policy Act of 1969 (42 USC 4321)
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV (continued)** • Clean Air Act of 1963 (42 USC 7401) • Resource Recovery and Conservation Act of 1976 (42 USC 6901 et seq.) • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • Executive Order 13007, "Indian Sacred Sites" • Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 USC 3001 et seq.) • Archaeological Resources Protection Act (Public Law 96-95; 16 USC 470aa et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* • Department of the Interior Policy on Consultation with Indian Tribes **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services

Fundamental Resource or Value	Hanford: Hanford Irrigation District Pump House
Related Significance Statements	Significance statements 2, 5, and 6
Current Conditions and Trends	**Conditions** • The Hanford Irrigation District Pump House, built in 1908, is a large and architecturally distinct concrete structure in fair condition. Key features are still intact, including an ornamental cornice, battlemented parapet, engraved sign, and interior structural arches. • The pump intakes in the river are intact, but the building's interior equipment has been removed, resulting in a large hole in the flooring, which has been backfilled with soil. • The building's original setting and landscape has been affected by the removal of the entrance ramp and the creation of a soil berm against the building. • There are buried or subsurface structures and features, along with associated archeological materials, in unknown condition. • Access roads to the facility are in poor condition. **Trends** • Continued erosion/deterioration of structure and associated features. • Access could occasionally be limited due to wildlife restrictions. • Loss of knowledge as early settlers pass. • A view of the facility is part of an annual public tour program focused on the pre-Manhattan Project historic facilities at the Hanford Site. Public demand for these tours exceeds current tour capacity. Stabilization of the facility may allow for interior public tour access and/or more public tours.

Fundamental Resource or Value	Hanford: Hanford Irrigation District Pump House
Threats and Opportunities	**Threats** • There is no plan for preservation and maintenance of historic, archeological and landscape features (inside and outside boundary). • Potential collection of surface artifacts or objects. • Potential for unauthorized boater access (structure stands on river bank), vandalism, and collection of artifacts. • Bird nesting and burrowing animals impact the structure and associated archeological features. • Potential for wildfire and destructive fire control methods. • Potential development of infrastructure could threaten archeological resources. • Lack of knowledge of subsurface features and artifacts; potential impact of improvements/visitor use on buried deposits. **Opportunities** • Interpretation of irrigation, agriculture, and early settlement history. • Ethnohistoric investigation of pre-contact habitation, early settler life, transition from private land to federal ownership. • Archeological investigation. • Potential to collaborate with the tribes on interpreting the significance of the site. • Stabilization to allow visitors to enter the interior of the structure. • Preservation and interpretation of associated features to expand public understanding and visitor experience (e.g., Hanford Irrigation Canal, Sam Allard's property).
Existing Data and Plans Related to the FRV	• Historic Property Inventory Form (7/6/01). • State of Washington Archeological Site Form (8/16/82), 2/24/10), 10/22/15) • National Register of Historic Places Registration Form for the Hanford Irrigation Canal (9/16/03) and 2/25/10, no SHPO signature). • The Hanford and White Bluffs Agricultural Landscape: Evaluation for Listing in the National Register of Historic Places (2005 draft – not for public release) • "Euro-America American Resettlement of the Hanford Site," in National Register of Historic Places Multiple Property Documentation Form – Historic, Archaeological and Traditional Cultural Properties of the Hanford Site, Washington, DOE/RL-97-02, Rev. 0, Department of Energy, Richland, WA, 1997. • Coyote Rapids HIPC Pump House Stabilization Study, prepared by Pacific Northwest National Laboratory for DOE/RL, August 2001. • Hanford Comprehensive Land-Use Plan Environmental Impact Statement (DOE/EIS-0222-F) and Record of Decision, 1999. • Existing images, including historic maps, drawings and photographs.
Data and/or GIS Needs	• National Register of Historic Places documentation (DOE with NPS assistance). • Document pre-Manhattan Project and Manhattan Project-related archives and artifacts (DOE with NPS assistance). • Historic resource study (DOE). • Ethnographic overview, assessment, and inventory (NPS and DOE).
Planning Needs	• Historic structure reports and cultural resource reports for Hanford.

Fundamental Resource or Value	Hanford: Hanford Irrigation District Pump House
Laws, Executive Orders, and Regulations That Apply to the FRV, NPS Policy-level Guidance, and Department of Energy Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Carl Levin and Howard P. "Buck" McKeon National Defense Authorization Act for Fiscal Year 2015 (Public Law 113-291) • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 USC 9601 et seq.) • National Historic Preservation Act of 1966 (Public Law 13-287; 54 USC 100101) • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • Atomic Energy Act of 1954 (42 USC 2011 et seq.) • Energy Reorganization Act of 1974 (42 USC 5801 et seq.) • National Environmental Policy Act of 1969 (42 USC 4321) • Clean Air Act of 1963 (42 USC 7401) • Resource Recovery and Conservation Act of 1976 (42 USC 6901 et seq.) • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • Executive Order 13007, "Indian Sacred Sites" • Native American Graves Protection and Repatriation Act (Public Law 101-601; 25 USC 3001 et seq.) • Archaeological Resources Protection Act (Public Law 96-95; 16 USC 470aa et seq.) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • NPS *Management Policies 2006* (chapter 9) "Park Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 6: *Interpretation and Education* • Director's Order 28: *Cultural Resource Management* • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • NPS *Transportation Planning Guidebook* • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* • Department of the Interior Policy on Consultation with Indian Tribes **Department of Energy Policy-level Guidance** • DOE Policy 141.1, "Department of Energy Management of Cultural Resources" • DOE Order 144.1 – American Indian Tribal Government Interactions and Policy • DOE Order 231.1B – Environment, Safety, and Health Reporting • DOE Order 430.1B – Real Property and Asset Management • DOE Order 451.1B – National Environmental Policy Act Compliance Program • DOE Order 458.1 – Radiation Protection of the Public and the Environment • DOE Order 522.1 – Pricing of Departmental Materials and Services

Appendix D: Traditionally Associated Tribes

Hanford

Confederated Tribes of the Umatilla Indian Reservation
46411 Timine Way
Pendleton, OR 97801

Nez Perce Tribal Executive Committee
PO Box 305
Lapwai, ID 83540

Confederated Tribes and Bands of the Yakama Nation
401 Fort Road, PO Box 151
Toppenish, WA 98948

Wanapum Band - Grant County P.U.D.
PO Box 878
Ephrata, WA 98823

Los Alamos

Jicarilla Apache Nation
PO Box 507
Dulce, NM 87528

Pueblo of Picuris
PO Box 127
Penasco, NM 87533

Pueblo of Ohkay Owingeh
PO Box 1099
San Juan Pueblo, NM 87566

Pueblo of Santa Clara
PO Box 580
Espanola, NM 87532

Pueblo of Taos
PO Box 1846
Taos, NM 87571

Pueblo of Nambe
Rt. 1 Box 117-BB
Santa Fe, NM 87506

Pueblo of San Ildefonso
02 Tunyo Po
Santa Fe, NM 87506

Pueblo of Jemez
PO Box 100
Jemez Pueblo, NM 87024

Pueblo of Cochiti
PO Box 70
Cochiti Pueblo, NM 87072

Pueblo of Pojoaque
78 Cities of Gold Road
Santa Fe, NM 87506

Oak Ridge

The Chickasaw Nation
PO Box 1548
Ada, OK 74821-1548

Cherokee Nation of Oklahoma
PO Box 948
Tahlequah, OK 74465

Muscogee (Creek) Nation of Oklahoma
PO Box 580
Okmulgee, OK 74447

Quapaw Tribe of Oklahoma
PO Box 765
Quapaw, OK 74363-0765

Eastern Shawnee Tribe of Oklahoma
12755 South 705 Road
Wyandotte, Oklahoma 74370

Seminole Nation of Oklahoma
PO Box 1498
Wewoka, OK 74884

Choctaw Nation of Oklahoma
PO Box 1210
Durant, OK 74702-1210

United Keetoowah Band of Cherokee Indians in Oklahoma
PO Box 746
Tahlequah, OK 74465-0746

Poarch Band of Creek Indians
5811 Jack Springs Road
Atmore, AL 36502

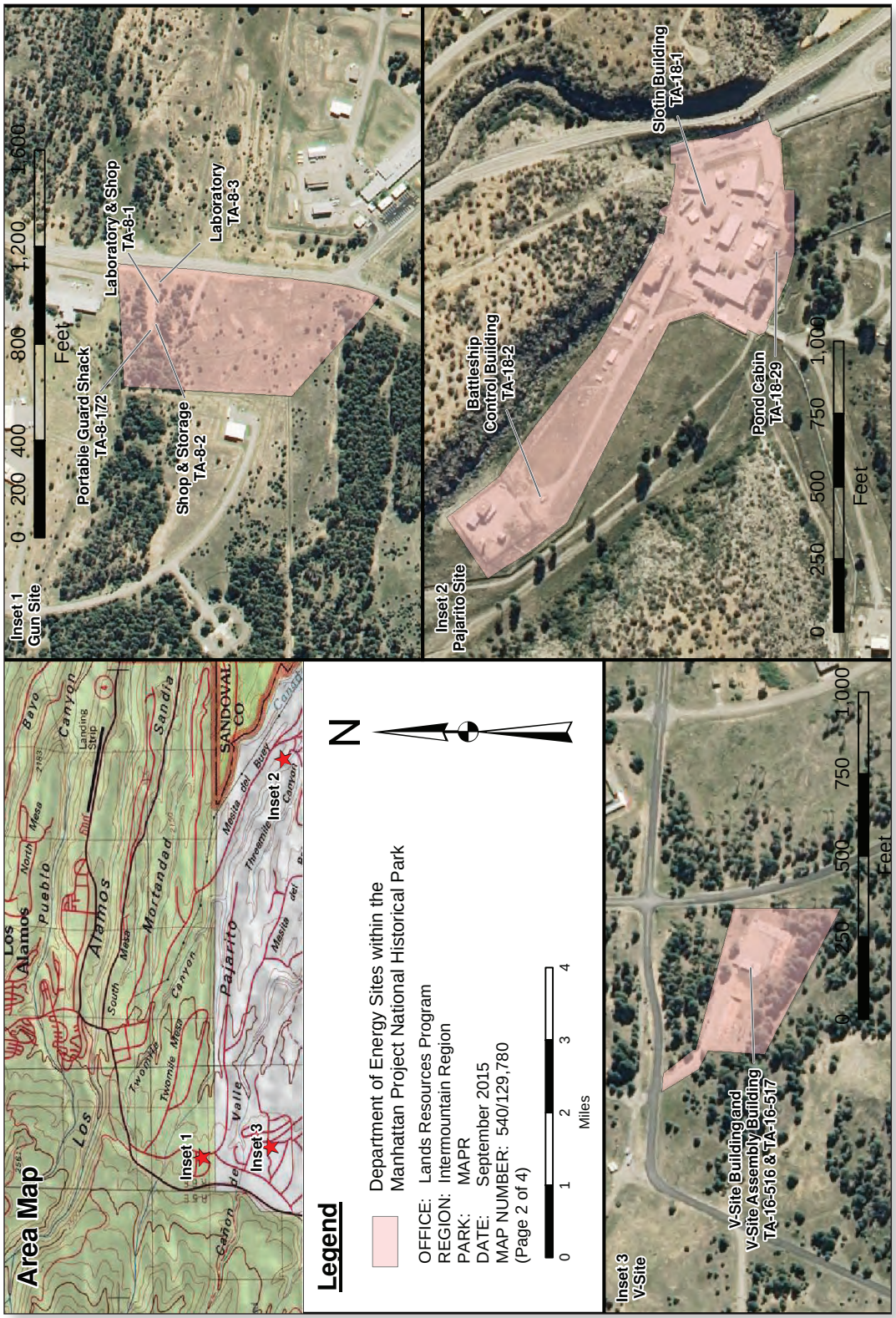
Eastern Band of Cherokee Indians of North Carolina
PO Box 455
Cherokee, NC 28719

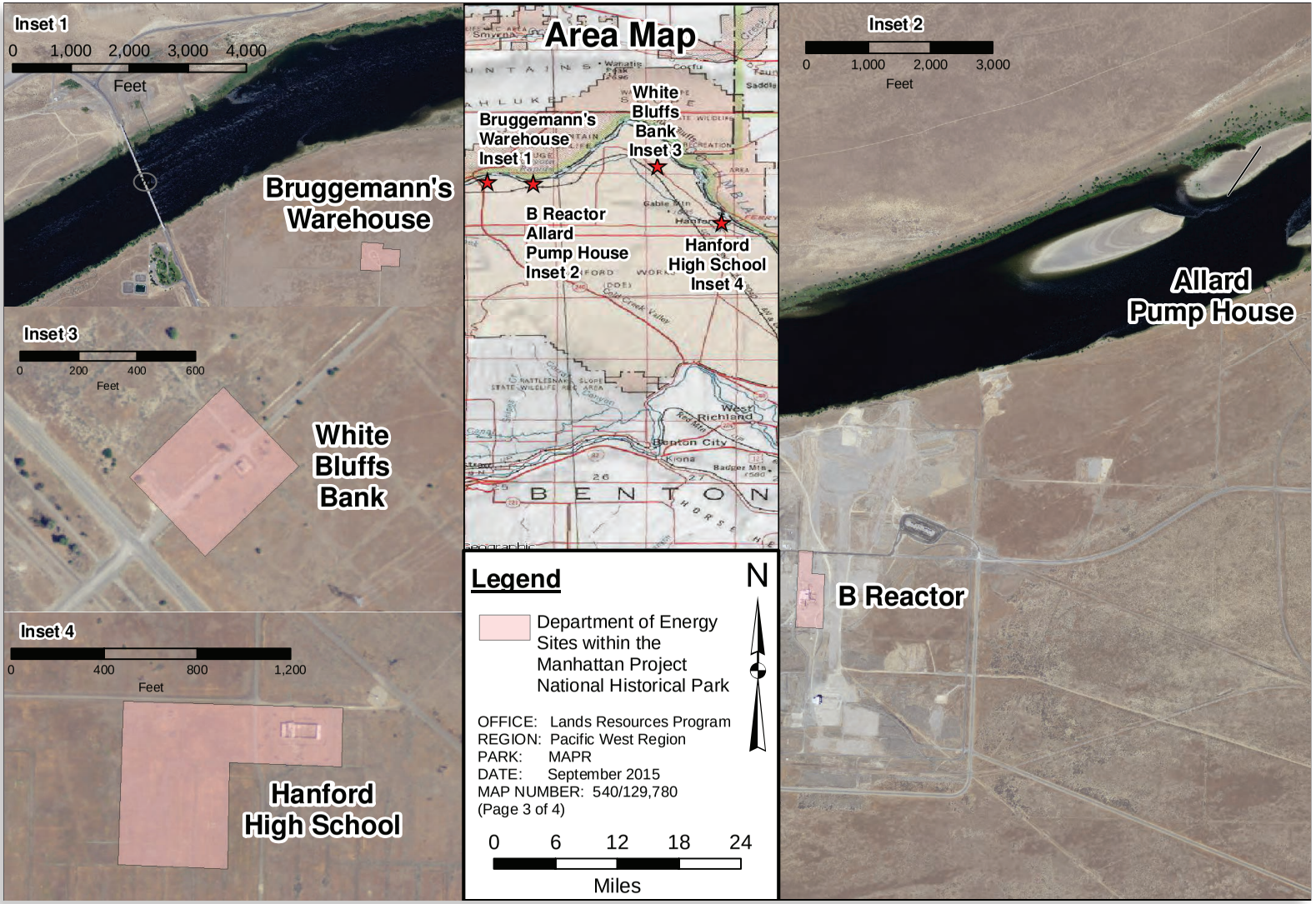
Absentee Shawnee Tribe of Oklahoma
2025 S. Gordon Cooper Drive
Shawnee, OK 74801

Shawnee Tribe
PO Box 189
Miami, OK 74355

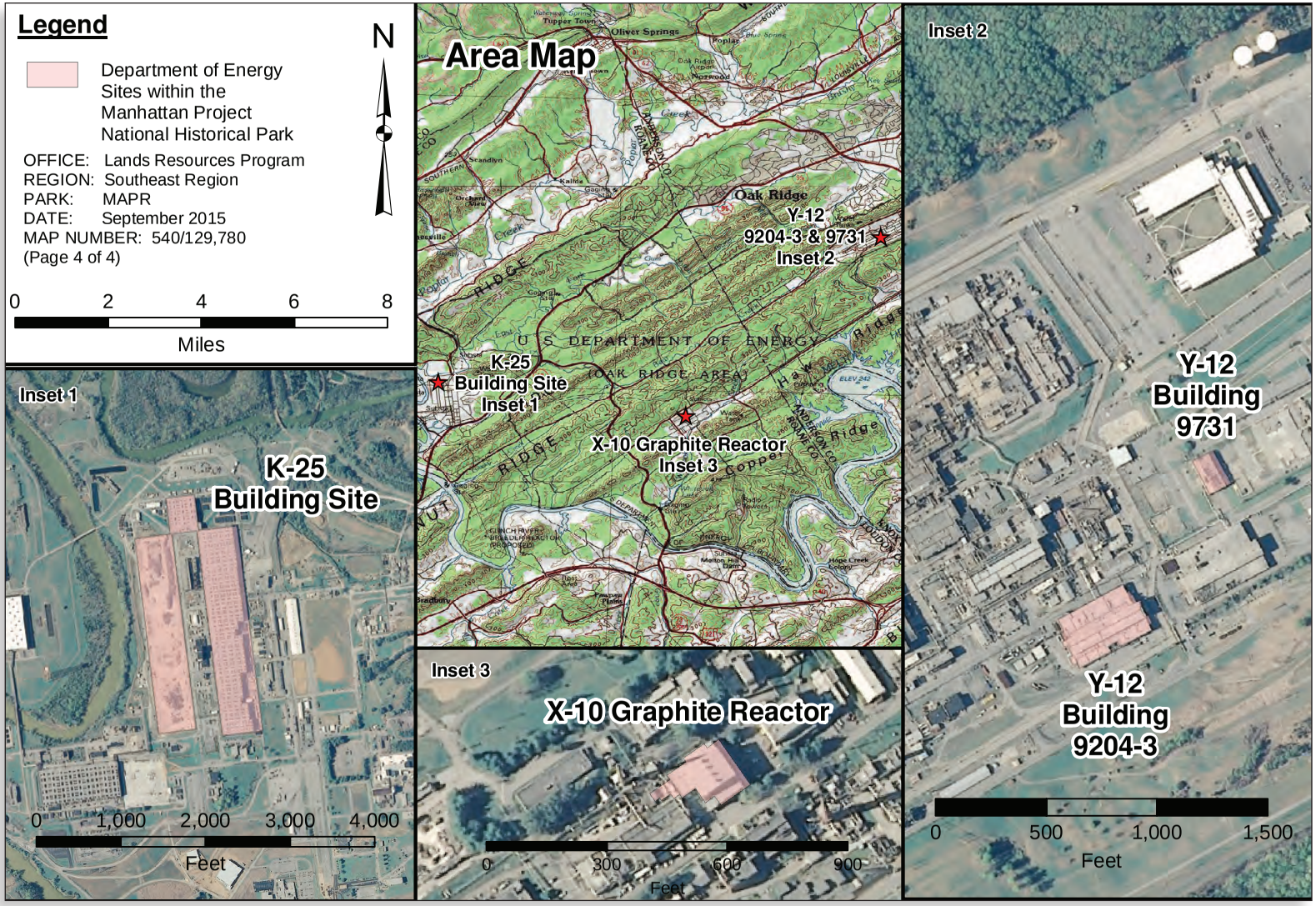
Appendix E: Department of Energy Sites within Manhattan Project National Historical Park

Los Alamos, New Mexico




Inset 1
0 1,000 2,000 3,000 4,000
Feet
Bruggemann's Warehouse
Inset 3
0 200 400 600
Feet
White Bluffs Bank
Inset 4
0 400 800 1,200
Feet
Hanford High School
Area Map
Bruggemann's Warehouse Inset 1
White Bluffs Bank Inset 3
B Reactor
Allard Pump House Inset 2
Hanford High School Inset 4
BENTON
Legend
Department of Energy Sites within the Manhattan Project National Historical Park
OFFICE: Lands Resources Program
REGION: Pacific West Region
PARK: MAPR
DATE: September 2015
MAP NUMBER: 540/129,780
(Page 3 of 4)
N
0 6 12 18 24
Miles
Inset 2
0 1,000 2,000 3,000
Feet
Allard Pump House
B Reactor

Oak Ridge, Tennessee



Intermountain Region Foundation Document Recommendation
Manhattan Project National Historical Park

December 2016

This Foundation Document has been prepared as a collaborative effort between National Park Service and Department of Energy staff and is recommended for approval by the NPS Intermountain Regional Director and the DOE Deputy Under Secretary for Management and Performance

12/23/16

RECOMMENDED
Kris Kirby, Superintendent, Manhattan Project National Historical Park **Date**

12/27/16

APPROVED
Sue E Masica, Regional Director, Intermountain Region, National Park Service **Date**

1/12/2017

APPROVED
David M Klaus, Deputy Under Secretary for Management and Performance, Department of Energy **Date**

As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

MAPR 540/135380
January 2017

Foundation Document • Manhattan Project National Historical Park

NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR